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Leveraging the Energy Transition: the role of long-term contracts

Leigh Hancher, Guillaume Dezobry, Jean-Michel Glachant, and Emma Menegatti

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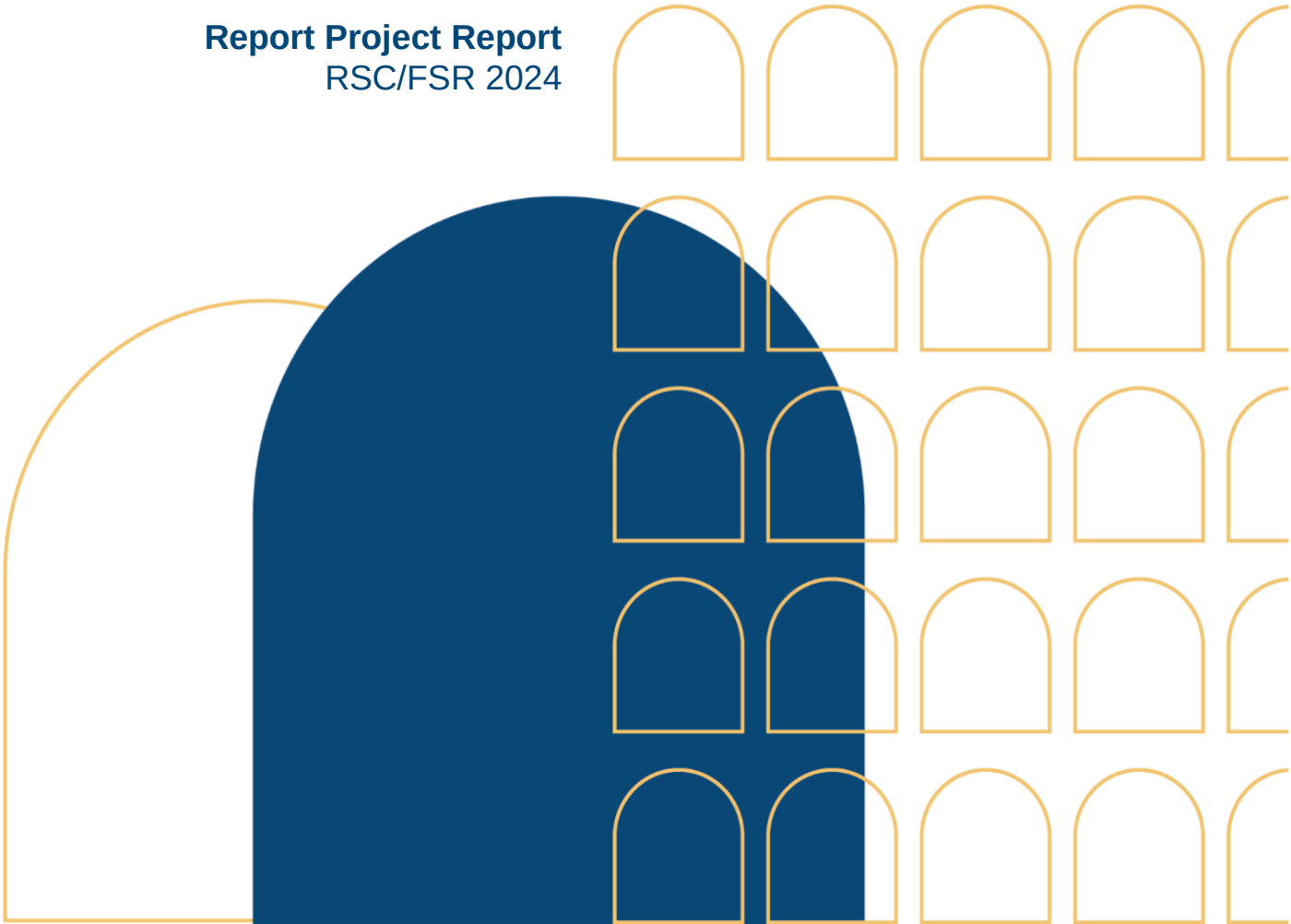

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Leveraging the Energy Transition: the role of long-term contracts[1,2]

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Executive summary

The interaction of *"Contracts", "Markets" and "Law and Regulation"* have informed the economic analysis of market economies for over 40 years. One of the main lessons learnt is that (*contracts*), (*markets*) and (*law and regulation*) always interact and co-determine the outcome and performances of the electricity industry.

This study identifies the "electricity world" in which long term contracts (LTCs) can be implemented. We distinguish between:

1° The old primary, and ideal, world of "*Just Building Open Markets*", the priority of our European authorities at the beginning of the 21st Century, to transition away from the previous world of vertically integrated monopolies and nationally closed borders.

2° The secondary, empirical, world of "*Co-building a Set of Working Markets*", in which law and regulation intervened into the pricing of peaking periods (in the wholesale market) and of capacity adequacy (in a parallel market), as well as for entry into nuclear or green generation investments (support schemes).

3° Finally, the tertiary, fully policy driven world of an "*Accelerated Decarbonization Push towards a Net Zero Industry";* where we now stand in the EU, expecting to transition in about a decade, around 2035, to entirely decarbonized electricity production and to already strong electrification of all professional energy consumption. In the meantime, LTCs offered to professional consumers, although not a core element of most of the market designs implemented in the succession of "worlds of electricity markets", has always existed in parallel to the mainstream changes.

As we explore, in the 1st world of "*Just building Open Markets*", the resistance of European competition policy to long term contracting has been rightly conceived as an active protection permitting "*Market building through antitrust*".

In the 2nd world of "*Co-building a Set of Working Markets*", private parties pushed anew LT contracting for a small group of professional consumers, now labelled as "Power Purchase Agreements". In the 3rd world of "*Accelerated Decarbonization Push towards a Net Zero Industry"*, PPAs were propelled into the draft of the EU electricity market design reform in March 2023 by European Commission to offer professional consumers a tool which might protect from fluctuating prices or supply volumes. And indeed, many types of LTCs -including but not limited to PPAs -promise ways of deepening the decarbonization of existing professional electricity consumption or facilitating the take-off of the needed electrification of most of the fossil fuel technologies and processes still prevailing in industry.

The European Union has now crossed three different electricity worlds since the adoption of the first energy liberalization package in 1996 and is now transitioning from hostility towards LTCs to tolerating a particular category of LT contracting, because the core of the market fixes

[1] We thankfully acknowledge the funding support by EDF for this study.

[2] We also acknowledge the research support by Sofia Nicolai.

being needed were LT contracts to enter generation (feeding the general wholesale market) and ad hoc mechanisms for capacity adequacy (delivering security).

We argue that in the new, third EU electricity world, and as a reaction to the European poly-crisis of the 2020s, the European Union cannot succeed into its deep and fast decarbonization and the launch of its maximal industry electrification while keeping its outdated hostility to most types of LTC contracting with professional consumers. The threat of strategic barriers blocking individual companies' decarbonization or entire industries' electrification through the dominance of a few generators or suppliers has not been substantiated. The former traditional "hostility doctrine" must pass a new test of in which long-term contracting with professional consumers has much more to offer for the realisation of the core EU public policies. These trends are explored in further detail in Part 2 of this paper.

Accordingly, a new European competition policy based on new facts, new realities and a revised reasoning has to be developed. To reach net zero as required by the EU Climate Law of 2021 (Regulation (EU) 2021/1119), the scale of investment in Europe (and across the globe) will need to drastically ramp up in the remaining 2020s, especially as many interim targets along the way are already being missed. The challenges to raise the predicted investments of over 650 billion euros -a large percentage of which must be mobilized from the private sector – requires an urgent rethink of the role of long-term contracts, in securing deep decarbonisation in the energy transition.

We argue that unlike the first EU electricity world, the real war in today's EU is not a war with the existing electricity generators and suppliers, be they big, medium or small; privately owned or publicly owned; incumbent, or innovative fringe. It is a war with itself: the EU has to reinvent its industrial energy fundamentals and to build a strong clean industrial base. The EU fortunately already has a working internal market; but it does not have yet these industry new fundamentals and that clean industrial base[3]. EU today's new decarbonization "Cold War economics" are just different from the successful and peaceful former liberalization process.

This report considers in further detail how many different types of commercial or 'private' LTCs can help achieve 'deep decarbonization'[4] by 2050, the EU's electricity market and its associated infrastructure and governance. The design of that market must therefore provide clarity and certainty for investors, while also ensuring fair outcomes.

As the main thrust of the new market design reforms is to encourage more long-term contracts - whether in the form of renewable power purchase agreements (PPAs)[5] or contracts for differences, (CfDs)[6] this is an ideal moment to re-consider the role of LTCs more generally and the application of competition law and policy to different types of commercial or. 'private' LTCs.

This paper argues that the existing precedent on the application of the Treaty competition rules to commercial LTCs - as applied in the 'first EU electricity world' is outdated. Today market actors have no clear indications on how the Commission (EC), or national competition authorities (NCAs) should apply Articles 101 and 102 TFEU to LTCs in the current and rapidly evolving new electricity world.

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[3] Enrico Letta, "*Much More than a Market. Empowering the Single Market to deliver a sustainable Future and prosperity for all Citizens*". Report to the European Council, April 2024.

[4] The phrase 'deep decarbonization' refers to the gradual elimination of carbon-emitting fuels, favoring more sustainable alternatives.

[5] See recitals 27-29 to the new draft Regulation on market design (Council of the European Union, 2023).

[6] See recital 30 to the new Regulation on market design (Council of the European Union, 2023).

As a generator can only hedge its production once and must decide between conventional futures contracts, longer term supply agreements or PPAs or CfDs, these different types of LTCs can be in competition with one another. We argue that for a fair 'competition of instruments' to flourish in the new electricity market a number of important conditions have to be in place.

A major aim of this part of the paper is to address these conditions and to put forward ideas on how to realise them urgently These conditions should reflect the new investment challenges to meet net zero emission (NZE) objectives as well as the overall direction of energy market integration. But they should also address very recent developments in European competition law and policy, on dealing with sustainability issues as well jurisprudence on market foreclosure as both these dimensions lead to the conclusion that a new perspective on the legality of different forms of commercial LTCs is urgently needed. At the same time a focus on market dynamics and dynamic competition is key. We therefore conclude that although there are important developments in the application of both Articles 101 and 102 TFEU to promote sustainability and related objectives, these do not yet address all the issues raised by the need to spur on 'deep decarbonisation' to address climate change.

This paper contends as a practical way forward, that we need a 'new analytical grid' for the application of the Treaty competition rules to a range of commercial LTCs, including new ways for risk sharing between generators and offtakers**.** Hence it must be recognised that in the new context, long-term contracts can facilitate market entry as opposed to hindering it but that is not to say that there could be a 'one size fits all' approach. The requisite LTCs may take different forms, and this must be reflected in the competition assessment.

The concluding section makes recommendations for achieving much needed legal certainty and argues that to this end, the Commission could adopt targeted guidance on different categories of LTCs. That guidance could deal with each of the three categories of. LTC that we analyse in this paper in further details. As we maintain, without such targeted guidance predictability is 'missing in action'. Without predictability investors cannot be properly motivated or encouraged to assume the level of risk required to commit extensive funds and to engage in the urgent race towards deep decarbonisation.

Table of Contents

Part 1 – Competition Law & Policy and Long-Term Contracts in the Electricity Sector

Leigh Hancher[1] and Guillaume Dezobry[2]

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Section 1: Introduction

"*Updating the current market design to better meet the objectives based on a static view of the system will end in failure. It will not provide incentives aligned with the deep transformations that are taking place*" (Pisani-Ferry, Tagliapietra, & Zachmann, 2023).

This paper explores the role of commercial or 'private 'long-term contracts (LTCs) in the energy transition. Until recently, the role of LTCs in the EU electricity market was at best ignored. As our colleague Prof dr J-M Glachant explains in his accompanying report there has been some -not necessarily positive - evolution of thinking on LTCs over the last decades.

"We *will actually find there three different postures. First "Hostility"; however, delivering a good support to our primary policy of opening markets. Second: "Ignorance"; with a benign neglect vis-à-vis our secondary policy of building a set of working markets. And third: "Ignition Delay"; with a promise opened by the March 2023 draft of electricity market reform, but a prolonged absence of review and redefinition of the very old hostility doctrine set in the first electricity world*."

This paper is designed to take up the latter issues and to prompt a legal review of the role of commercial LTCs in the current energy market and the net zero emission (NZE) goals embraced by European climate legislation.

1.1. Background to the current discussion on market reform

The initial electricity market reform debate in the EU was launched as a reaction to record high consumer electricity prices in Europe following the 2022 gas crisis. Given this situation, the immediate reform priority for many stakeholders at that time was fairness – a fair distribution of risks and rewards of market operation. But an equally vital aim for EU electricity market reform is to send clear investment signals in relation to the technologies needed to decarbonise the power system. Measures that could reduce consumer costs in the short-term could also hold back the energy transition. As the energy crisis has also decisively demonstrated that Europe's position as a net importer of energy leaves it vulnerable to supply shocks, any market reform must guarantee the supply system's resilience.

To achieve 'deep decarbonization'[7] by 2050, the EU's electricity market and its associated infrastructure and governance must therefore provide clarity and certainty for investors, while also ensuring fair outcomes. To reach net zero as required by the EU Climate Law of 2021 (Regulation (EU) 2021/1119), the scale of investment in Europe (and across the globe) will need to drastically ramp up in the remaining 2020s, especially as many interim targets along

[7] The phrase 'deep decarbonization' refers to the gradual elimination of carbon-emitting fuels, favoring more sustainable alternatives.

the way are already being missed. The challenges to raise the predicted investments of over 650 billion euros -a large percentage of which must be mobilized from the private sector – requires an urgent rethink of the role of different forms of commercial LTCs.

Several reform proposals and the stakeholder feedback that fed into the electricity market design reform consultation process in the first half of 2023 focused on increasing the share of various types of long-term contracts, in order to 'delink' or 'hedge' the volatile prices received by electricity producers from spot markets.

Indeed, a primary focus of the EC's proposed electricity market design reform (EMD) (European Commission, 2023d) is to address both aims by stimulating the use of long-term contracts. The underlying idea is simple: by providing investors with greater certainty about demand, they can access more affordable capital and make higher investments, ultimately leading to lower power prices for consumers. Additionally, consumers with long-term contracts experience less vulnerability to price fluctuations.

1.2. The proposed reform of the electricity market design.

The European Commission (EC) first proposed a reform of the electricity market design on 14 March 2023 (European Commission, 2023d). The main thrust of its March 2023 proposal is to encourage more long-term contracts by letting governments bear some of the risk of power purchase agreements (PPAs)[8] and recommending 'public' contracts for differences, (CfDs) [9] as the default instrument for provision of state support to non-fossil generation and supply. There is no further definition of an LTC in the current electricity market legislation or in the proposed EMD, but only references to two main categories of contracts – *CfDs and PPAs*.

It is therefore widely assumed that the current (wholesale) market design, although efficient in the short term, has failed to provide the right *investment* signals for renewable technologies and retrofitting of existing assets. Before the energy crisis, spot market revenues were seen as too uncertain and too low to cover the cost of capital for major projects. Long-term price certainty has already been recognized as vital in making an investment case for renewables. State support schemes have been widespread in the financing of renewable energy sources (*RES*).[10]

The Commission now seems to recognize that a more 'integrated supplier' model contributes to better protect consumers against volatility. This could be achieved in various ways for example by allowing users/consumers to invest directly in new or refurbished power plant or by signing an LTC with generators (often referred to as a 'utility PPA').

It is of note that the March 2023 Commission proposal to reform the electricity market was not backed up by an impact assessment. It was only underpinned by a public consultation and a staff working document.

A recent EP study notes – '*The current Commission proposal did show that there is not even a joint problem definition. When discussing the 2022 energy crisis, the justifications mainly focused on the lack of Russian gas – while in the same year electricity supply suffered also a massive shortfall of nuclear generation capacities and hydropower production. Including those in the analysis and discussions might have led to different policies being considered*

[8] See recitals 27 -29.

[9] See recital 30.

[10] The low amount of capacity signed on PPAs relative to support schemes is also notable.

appropriate. " (European Parliament, 2023). In other words –the wider impact of climate change on energy supply – including water shortages - also needs to be factored in.

Given the absence of a prior impact assessment, it is all the more important to stress that the different types of long-term contracts that are now being analysed in the context of market reform and that are discussed in detail in this paper, are not independent from each other. A generator can only hedge its production once and must decide between conventional futures contracts, long term supply contracts, or some form of PPA or CfD. Thus, when determining the price of a PPA, an investor will consider the alternative opportunity, for example, of going for a CfD, or a futures product or even spot market sales.

In other words, and as we explore in section 6 below, there is - and should be a **competition of instruments at the disposal of market actors**. This type of competition can only be beneficial. For example, if governments set the maximum administered or 'strike' prices for 'public' CfDs at a too low level low-carbon or RES asset buildout would not necessarily be stopped, as long as investors can contract directly with the demand side through PPAs or other types of commercial LTCs, and such investments can help drive down costs.

Indeed recital (46) of the draft EMD Regulation (Council of the European Union, 2023) recognizes that:

> '*Member States should be free to decide which instruments they use to achieve their decarbonisation objectives. Through PPAs, private investors contribute to additional renewable and low carbon energy deployment while locking low and stable electricity prices over the long-term. Likewise, through two-way contracts for difference or equivalent schemes with the same effects, the same objective is achieved by public entities on behalf of consumers. Both instruments are necessary to achieve the Union's decarbonisation targets through renewable and low carbon energy deployment, while bringing forward the benefits of low-cost electricity generation for consumers'*.

However, for a fair 'competition of instruments' to emerge and flourish in the new electricity market a number of important conditions have to be in place. A major aim of this paper is to address these conditions and to put forward ideas on how to realise them urgently. A focus on market dynamics and dynamic competition is key.

This part of the paper is structured as follows.

Section 2 explores the various categories of LTCs for electricity supply and outlines their main distinguishing features. As there is no definition of a 'long term contract' either in the current legislation governing the internal electricity market (IEM) or in the proposed EMD regulation, nor is there any fixed duration for an LTC to be classified as 'long term', it is useful to set out the various types of commercial or private as well as pubic LTCs and their main features.

As further analyzed in **Section 3**, LTCs may be subject to scrutiny under the Treaty state aid rules as well as the Treaty rules on competition. National authorities concluding various forms of agreement with generators, suppliers or consumers must adhere to the rules on prior notification of state aid measures and schemes. Although this process might be time consuming, a Commission decision determining any state aid element in a (non-commercial) LTC will provide the beneficiary with legal certainty.

At the same time market actors have no clear indications on how the Commission (EC) or national competition authorities (NCAs) should apply Articles 101 and 102 TFEU to commercial or private LTCs in the current and rapidly evolving electricity sector. The existing precedent on the application of these rules to LTCs is outdated – as we discuss in **Section 4**. The key

Commission settlement decisions were adopted almost two decades ago, imposing certain commitments on bilateral LTCs.

The EU electricity market has evolved considerably in the meantime. This theme is taken up in **Section 5** which builds on the themes discussed in the separate report from Professor Glachant and annexed to the legal report. It covers two strands of developments since 2009. First the exogenous dimension is discussed including the new investment challenges to meet net zero emission (NZE) objectives as well as the overall direction of energy market integration. Second the 'endogenous' dimension is explored, that is developments within competition law and policy, and especially case law and academic writing on sustainability and on market foreclosure. Both these dimensions lead to the conclusion that a new perspective on the legality of LTCs is urgently needed.

As a result, this paper contends as a practical way forward, that we need a 'new analytical grid' for the application of the Treaty competition rules, as developed in **Section 6**. Here we address the conventional steps in a competition law analysis in the light of new developments in the doctrine and new developments in the market against the challenges of urgent and far-reaching electrification - challenges that are further addressed in the accompanying report from Professor Glachant.

Section 7 recognizes that long-term contracts can facilitate market entry as opposed to hindering it but that is not to say that there is 'one size fits all'. The requisite LTCs may take different forms, and this must be reflected in the competition assessment. For example, and as will be shown in section 4, in the past the main concern regarding the risk of abuse of dominant position associated with long-term contracts has concerned the foreclosure effect both upstream and downstream. We have therefore grouped our analysis of commercial LTCs into three broad categories. Without claiming to be exhaustive in our coverage of possible contracts, we have divided potential LTCs into three main categories with varying duration:

- Corporate PPA signed as part of a greenfield project (between 15 and 20 years);
- "Risk sharing" contracts between an upstream integrated supplier (10 years) and a manufacturer;
- Pure supply contracts (downstream) between a supplier and a consumer (5 years).

Finally, in our concluding section we put forward several recommendations for targeted guidance for each of these categories with the aim of achieving much needed legal certainty for investors, producers, suppliers and consumers alike.

Section 2: Types of LTCs

As we have observed in the introduction there is no definition of a 'long term' contract either in the current legislation governing the internal electricity market -the IEM - or in the proposed Electricity Market Design (*EMD*). There is no fixed duration for an LTC to be classified as 'long term'. In this section we introduce the various types of LTCs that are currently being discussed in European policy documents and in legislative initiatives.

The proposed EMD regulation focusses on PPAs and CfDs but these two broad categories can already take a wide variety of forms. LTCs can also take the form of long term, bilateral supply contracts and take or pay contracts as well as agreements to share the operational risks of existing assets. Certain types of capacity remuneration mechanisms – CRMs- may also be secured by means of an LTC with a capacity (or flexibility) provider.

The various types of LTCS that feature in the proposed EMD and their main elements are summarized in the table annexed to this paper.

2.1. CfDs

Contracts for difference (CfDs) are a type of financial contract that are commonly awarded through state-supported auctions for renewable electricity.[11] The Commission's March 2023 proposal on the EMD set CfDs as the default instrument for European countries to support non-fossil fuel electricity generation. At their simplest CfDs involve a strike price and a reference price (usually the spot price). In periods in which the reference price is **lower** than the strike price, CfD holders **receive** the difference between the two prices, multiplied by their generation output, from the counterparty (the state). In periods in which the reference is **higher** than the strike price, CfD holders must **pay** the difference between the two prices, multiplied by their generation output, back to the counterparty. The outcome is that the holder of a CfD receives a fixed price (the strike price) for the electricity they produce.[12]

The CfD strike price is often determined by competitive auctions, in which a national government tenders for a target energy demand over a certain time period, usually 15-20 years. Renewable projects compete by making bids for the required level of support. The lowest bids which meet the demand are awarded a CfD. Typically, the level of support (the strike price) is uniform and is set by the highest value bidder needed to meet the demand, otherwise known as pay-as-clear. The costs of paying the CfDs are then recovered via levies on consumer bills.

Historically, Contracts for Difference have been the UK government's chosen subsidy regime since 2014. CfDs are procured at auctions called Allocation Rounds (or AR). Different projects from different classes of technology compete on a "strike price" metric. Winning projects are guaranteed to receive this price via a "Contract for Difference," a financial mechanism which settles the difference between the market price and the strike price.

One benefit of this system is that the CfD has a limited budget impact. In periods of high-power prices, generators sell into the market as usual, and then after the fact they pay back any money they made above their strike price to the regulator. On the other hand, when the price is low, renewable generators are remunerated up to their strike price.[13]

2.2 Carbon Contracts for differences (CCfds)

As part of the 2020 EU Industrial Strategy[14] and then later**,** the European Commission has considered, as part of the proposal for a revised ETS Directive (Directive (EU) 2023/959), on an EU approach to CCfDs using ETS revenue. CCfds allow energy-intensive industries to be compensated via climate protection agreements for periods of between 15 years or longer to cover for their additional costs thus make green technologies more attractive for energy-intensive users. The explanatory memorandum of the ETS review proposal mentions states that CCfD are an important instrument to trigger emission reductions in industry, so that the range of measures that the EU's Innovation Fund can support should be extended to provide support to projects through price-competitive tendering such as CCfDs. Art 10a(8) ETS Directive establishes that in the case of support provided through competitive bidding, 100% of the relevant costs of the projects may be supported. The Commission is empowered to adopt delegated acts to supplement this Directive.

[11] See the definition in Art 2(76) of the draft regulation on EMD.

[12] See further, (Kitzing, 2023). See also, (Kitzing, et al., 2024)

[13] See further, (EMR Settlement Limited)

[14] See also for hydrogen, (Burmeister, Arhold, & Kistner, 2023)

2.3. Power Purchase Agreements (PPAs)

2.3.1. General features of PPAs

PPAs are at their simplest – bilateral contracts between electricity generators and consumers.[15] They are usually long-term contracts of 10 to 15 years and can be adjusted to meet the preferences of the parties. They can be linked to the physical delivery of electricity (in which the power producer has the obligation to sell electricity volumes to the consumer over the contract period[16]) or based only on financial obligations (effectively a commercial CfD between the contractual parties). In its simplest form, a renewable power or a renewable heat purchase agreement is a purchase agreement between a renewable energy producer and a corporate off-taker. The corporate off- taker commits to the purchase of a specific volume of renewable energy at a predetermined price over a longer period. In most cases, the corporate off-taker will also receive the guarantee of origin that is issued for each unit of renewable energy produced within the EU. These PPAs are then usually referred to as 'Corporate PPAs'.

The generators that sign PPAs in the EU are often renewable projects seeking price certainty, while the consumers are typically large energy users such as data centres or manufacturers in the metal industries. These types of agreement have become increasingly popular for such firms to comply with their so-called 'ESG' requirements, especially the large technology firms. In 2022, *Amazon* was the biggest buyer globally, with 10.9 GW of Corporate PPA deals. By comparison, other tech companies with major clean power purchases in 2022 were *Meta* (2.6 GW), *Google* (1.6 GW) and *Microsoft* (1.3 GW).

With many technology companies making ambitious ESG and net zero targets, such as *Microsoft* using 100% renewable energy by 2025 and *Amazon* by 2030, corporate PPAs enable them to source a significant proportion of their energy from renewable sources, thereby reducing carbon footprints and demonstrating commitment to sustainability targets.

As the technology sector must navigate the energy demands of blockchain and AI applications and pushes for innovative energy solutions in the data centre world (reducing companies' vulnerability to grid disruption), PPAs provide an important route to obtaining energy resilience.

The numbers of PPAs are growing significantly in most EU countries (RE-Source, 2024). Corporate power purchase agreements for renewable energy in Europe hit a record of 10.4 GW in 2023, a significant growth from the 6.7 GW of deals in 2022 (Tisheva, 2024). Spain and Germany were still the largest markets, accounting for almost half of total contracted capacity in 2023. Spain again led the chart with 2.77 GW of PPAs, followed by 2.04 GW of contracts in Germany, which could challenge Spain for the top spot in 2024, RE-Source said last week. France, the UK and Sweden also experienced significant growth, achieving 0.78 GW, 0.62 GW and 0.36 GW, respectively. A new trend is the emergence of multi-buyer PPAs, enabling smaller companies to procure renewables, the platform noted. In 2023, the market also witnessed the first PPAs bundling electricity and storage, as well as the first PPAs for green hydrogen. In terms of offtaker sectors, the PPA market in 2023 was led by heavy industry with 2.9 GW, followed by ICT with 2.5 GW, retail with 0.8 GW, telecoms with 0.7 GW, and engineering and technology with 0.5 GW. PPAs are becoming more appealing across industries, with automotive, food and drinks and retail companies showing significant growth, according to the announcement (RE-Source, 2024).

[15] See the definition in Art 2(77) of the draft regulation on EMD.

[16] It is worth noting that for physical PPA, ownership of the electricity is transferred at the point of injection into the grid.

Commencing in 2024, European companies will encounter more stringent legal obligations concerning Environment, Social, and Governance (ESG) compliance.[17] These regulations elevate the benchmarks for sustainability, social responsibility, and corporate governance standards. Responding promptly to these new rules is crucial to evade penalties, protect reputation, and mitigate other negative consequences of non-compliance. PPAs are therefore an increasingly attractive option from this perspective.

2.3.2. Cross border PPAs

In a physical cross-border PPA, the offtaker contracts with a generator/ renewable power generation asset in another country, and books physical or financial capacity rights on the relevant interconnectors to ensure a physical network connection. This entails risk and costs associated with the cross-border transfers.

In a virtual cross-border PPA, the power producer sells the electricity into the local wholesale market, while the offtaker buys its electricity in a different local wholesale market. The contract between the power producer on the one side of the border, and the offtaker on the other side of the border consists of a financial settlement, whereby the power producer receives a payment from the local wholesale electricity market and a net-settlement against the PPA price agreed with the corporate buyer (RE-Source, WBCSD, 2020).

The advantages for offtakers are a greater access to low-cost renewable power projects across the EU, the ability to aggregate loads in different locations, and to meet a larger extent of their electricity. For renewable power project developers, cross-border PPAs allow access to markets with higher electricity prices and therefore higher willingness to pay for renewable power. [18]

2.3.3. Virtual PPAs

A virtual PPA is a financial contract for difference between a wholesale electricity price and the PPA price. As virtual PPAs require access to the wholesale market, the majority of the corporate PPA growth occur in deregulated markets. A recent example of a virtual PPA is an innovative transaction exchanging a fixed-price for a variable price and renewable energy certificates. The completion of such contracts is beneficial to both renewable electricity producers and industrial consumers in the long term. It enables the seller to secure a given level of income and it grants the buyer visibility and stability on part of its energy sourcing costs.[19] As virtual PPAs do not appear to raise any specific competition concerns, the study is focused primarily on physical Long Term Contracts.

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[17] On 5 January 2024, the Corporate Sustainability Reporting Directive (CSRD) (Directive (EU) 2022/2464) entered into force. This new directive modernises and strengthens the rules concerning the social and environmental information that companies have to report. A broader set of large companies, as well as listed SMEs, will now be required to report on sustainability. Companies will have to apply the new rules for the first time in the 2024 financial year, for reports published in 2025.Companies subject to the CSRD will have to report according to European Sustainability Reporting Standards (ESRS).

[18] Besides cross-border PPAs within the European single electricity market, there are also opportunities to expand cross-border PPAs with third countries. A specific example is the collaboration between France, Germany, Portugal, Spain and Morocco, with the aim to analyse the options of cross-border PPAs between Morocco and EU Member States under the Sustainable Electricity Trade Roadmap-Signed at the COP22 in Morocco, see analysis (RES4Africa Foundation, PwC, 2021).

[19] The Statkraft/Air Liquide VPPAcontract provides for the supply of renewable energy certificates from Polish wind farms, linked to newly installed renewable production capacity. It will contribute to reducing CO2 emissions of Air Liquide by 38,000 tonnes/year, and help customers in Poland

2.3.4. Barriers to PPA uptake

In 2019, an EU-wide survey was conducted as well as a detailed analysis of 10 Member States to identify the key barriers for the uptake of corporate renewable PPAs. The results identified regulatory barriers, policy barriers, economic barriers, as well as awareness issues (European Commission DG ENER, 2019b), (European Commission DG ENER, 2019a). The Commission concluded that:

> *'Despite a year-on-year increase in corporate purchase agreements in the last five years, the percentage of renewable energy projects financed directly by corporate off-takers is only 15-20% of the annual market. The uptake of corporate purchase agreements is also mainly limited to certain Member States, to electricity as an energy carrier, and to large multinational consumer-facing companies' (para 20).* [20]

One study commissioned for the EC as part of this exercise noted that RES PPAs for large energy intensive users in Nordic countries:

> *"are quite appealing for four main reasons: i) competitive price of the energy component of the electricity price, as Norway and Sweden are a cost-effective wind and hydro location; ii) competitive price of the regulated components of the electricity price; iii) competitive costs to adapt the wind production profile to the baseload profile of aluminium smelters, due to liquid electricity markets and the prominent role played by hydropower in the national energy mix; and iv) market-based support schemes for renewables, which make PPAs an interesting financing mechanism for RE generators."*

In other words, and importantly, the availability of competitive base load costs has an important role to play in the development of renewable (RES) PPAs (European Commission DG ENER, 2019a, p. 9).

In the Commission's March 2023 proposal for a regulation on EMD, RES PPAs are included as an important tool for producers and consumers to enter long-term contracts. However, the proposal includes provisions to allow EU countries to act as guarantors of these contracts, with the aim to reduce risk for private parties and to encourage increased PPA trading.[21] This may invoke the application of the Treaty state aid rules as discussed below.[22]

2.4. Capacity markets

Capacity mechanisms[23] are support measures that provide 'capacity payments' to power plants for being available to generate electricity to meet peak demand when needed, especially

decarbonize their operations, by using industrial gases with a lower carbon footprint. This agreement also supports the country's target to reach at least 23% share of renewable energies in final energy consumption in 2030. (Air Liquide, 2024)

[20] See also, (Eurelectric, Compass Lexecon, 2023)

[21] See ~Chapter II, Art 19a(3) of the draft regulation (Council of the European Union, 2023).

[22] The InvestEU Programme can already support EU- sourced finance for PPA investments - as indicated explicitly in the Investment Guidelines for the InvestEU Fund (European Commission, 2021a), supplementing the InvestEU Regulation (Regulation 2021/523)

[23] As defined in Art 2(22) of the draft regulation (Council of the European Union, 2023).

during exceptional periods such as when many generators are on outage or there is low wind and solar availability. [24]

Wholesale electricity prices by themselves were considered insufficient to incentivise the investment in flexible technologies, such as gas-fired power plants, needed to complement renewables. As a way to resolve the so-called 'missing money' problem, as well as security of supply threats, many countries resorted to capacity mechanisms (or strategic reserves) to ensure the conventional generation required for reliability is kept online or newly installed. These mechanisms can take a variety of forms including contractual commitments between a public authority and a capacity provider. [25]

State aid approval is required to implement a capacity market remuneration mechanism when they are considered state subsidies for specific technologies (Zachmann & Heussaff, Phased European Union electricity market reform, 2023). Only some European countries have these mechanisms in operation (Roques & Verhaeghe, Different Approaches for Capacity Mechanisms in Europe: Rationale and Potential for Coordination?, 2022).

Contracts for capacity payments are usually awarded via competitive auctions, typically a few years before payment (and corresponding availability of capacity). Payments are made on a per kilowatt basis, remunerating generators for availability rather than for generation. The conditions for receiving payment differ across EU countries but are targeted towards giving generators an incentive to be available to deliver power during periods of scarcity. [26]

European rules on these types of CRMs have been adopted in recent years. On the one hand the Commission first issued and updated its state aid guidelines following its Sector Inquiry of 2015. On the other hand, harmonising rules were adopted in the Electricity Regulation of 2019. The proposed EMD Regulation aims to facilitate the approval of new CRMS and to make them a more permanent feature of the EU market.

In the Commission's State aid decisions on capacity mechanisms, the issue of long-term contracts plays an important role. More specifically, the Commission has repeatedly highlighted the fact that the development of new capacity requires the producer to be offered a long-term contract for the valuation of the capacity. This is particularly clear from its UK (European Commission, 2019)[27] and French (European Commission, 2016c) decisions.

In the case of France, the Commission expressed doubts in the Opening Decision about the possibility of developing new capacity without a long-term contract. France therefore decided to change the design of the mechanism by adding a long-term auction (AOLT) **allowing 7-year contracts** to be signed by the successful bidders.

This period, which is shorter than that chosen for the mechanism put in place to develop additional capacity at Landivisiau (20 years) (European Commission, 2017)or the 15 years of the British mechanism, was nevertheless validated by the Commission, which noted that:

"*The Commission takes the view that France has struck the right balance between the advantages and disadvantages of the different possible contract durations and that the*

[24] See recital 50 of the EMD regulation (Council of the European Union, 2023)

[25] See for example (European Commission, 2021b) on the Capacity remuneration mechanism of Belgium, at para 8 for a brief description of the measure.

[26] Article 22(4) of (Regulation 2019/943, 2019) sets out requirements regarding CO2 emission limits for capacity mechanisms. Capacity mechanisms should be open to the participation of all resources that are capable of providing the required technical performance, including gas-fired power plants, provided they satisfy the emission limit in Article 22(4). These limits may however be grandfathered.

[27] see §129

chosen duration offers satisfactory security for long-term investments, on the one hand, while preventing the risk of technology 'lock in' that could be brought about by longer contacts"[28].

2.5. Forward Contracts

Electricity forward markets allow participants to trade forward contracts and future contracts months and years ahead of the delivery of energy, although the contracts usually last no longer than four years. Prices are determined by bidding zones[29], which effectively overlap with national borders. Both baseload contracts and peak load contracts are available to trade as futures, linked to the average price in different hours. The volumes traded on forward markets far exceed those traded on the spot markets. The products available on forward markets are typically no longer than four years, which is considered too short for many generators to satisfactorily hedge their positions, especially renewables that require more price certainty (Zachmann & Heussaff, 2023).

ACER has issued an assessment report on the wholesale market design, which includes a dedicated section on how forward liquidity in the wholesale electricity markets can be improved to ensure the availability of efficient hedging products (ACER, 2022b).

Article 9 of the proposed EMD Regulation sets outs further conditions for the development of forward markets. Notably Art 9(9) provides that:

> '*Subject to compliance with Union competition law and with Directive (EU) 2014/65 and Regulations (EU) 648/2012 of the European Parliament and of the Council and 600/2014 of the European Parliament and of the Council, market operators may develop forward hedging products, including long-term forward hedging products, to provide market participants, including owners of power-generating facilities using renewable energy sources, with appropriate possibilities for hedging financial risks against price fluctuations. Member States shall not require that such hedging activity may be limited to trades within a Member State or bidding zone*.'

2.6. 'Risk sharing' contracts

For generators investing in new power plants and operating a portfolio of assets, the conclusion of long-term contracts with consumers which allow risk sharing is developing.

These contracts - which are referred to by the European Commission in its guidelines on vertical restraints (European Commission, 2022f)[30] - aim to encourage investment in decarbonisation by both producers and consumers.

For producers, these contracts make it possible to secure the price of production and limit the risks associated with the unavailability of production resources (portfolio effect).

For consumers, these contracts make it possible to limit their exposure to price volatility, and therefore to encourage investment in processes that have been decommissioned.

These contracts are analysed in more detail in section 7.1.

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[28] SA.39621 (European Commission, 2016c), §243

[29] (Regulation 2019/943, 2019) for definitions

[30] §316.

2.7 Summing-up

In conclusion, and as discussed in this section, there are many forms of LTCs – both public and private. The stated benefit of long-term contracts, albeit of undefined duration and whatever their form, is that these contracts are expected to be priced below (short term) spot market prices, thereby reducing costs and price volatility for consumers. On the generation side, the assumed benefit is that the guarantee of a fixed, stable income will reduce the cost of capital for new investment (or maintaining existing investments). Both consumers and suppliers need effective and efficient forward markets to cover their long-term price exposure and decrease the dependence on short-term prices.

The hope is that lowering capital costs and lowering the profits of power generators can be used to relieve pricing pressure on consumers.

Yet the proliferation and indeed the promotion of many of the different types of LTCs surveyed in this section has not accompanied with any comprehensive guidance on the potential application of Articles 101/102 TFEU. Indeed, although studies commissioned prior to the adoption of the 2022 Commission Recommendation on RES PPAs (European Commission, 2022c) recognised that certain suppliers exercised a dominant position in the market for RES generation, this was not considered to be a cause for concern.

As Professor Glachant remarks in his accompanying report to this paper: 'In fact, before the poly-crisis of the 2020s, the general European posture vis-à-vis new LT contracting for professional consumers was voluntary ignorance. It was not consequential though, because the dominant practice of using LT support schemes contracts for entering into renewable generation, plus *ad hoc* Capacity Mechanisms for security of supply, was delivering what the strict hostility to LT contracting was supposed to bar.'

Finally, the importance of the Treaty rules on free movement should also not be overlooked. Indeed, the draft regulation on EMD at its recital 50 et seq acknowledges that the design of CRMs/CfDs must not distort trade. Nevertheless, organizing meaningful cross border participation has already proved challenging in the case of national CRMs and is likely to be the case for other types of public contracts, such as CfDs.[31] Indeed, there are concerns emerging that the extensive reliance on public long term contracts like CfDs might compartmentalize the IEM along national lines (European Parliament, 2023).

Section 3: Public versus Private LTCs: The key issue of predictability regarding compliance with competition rules

As shown in section 2, LTCs can be divided into two main categories: private and public LTCs.

The debate among energy economists on the benefits of (public) CfDs versus (private) LTCs such as PPAs and on the advantages of the latter over the former is discussed in detail in the accompanying report to this paper by Professor Glachant.

In this part of the report we argue that from a legal perspective it must be emphasised that if all types of LTCs are needed to achieve deep decarbonisation - whether private, commercial LTCs or public, state backed LTCs, it is important to secure the same level of clarity and legal certainty for both categories of LTC regarding compliance with competition rules.

[31] See further (Hancher, de Hauteclocque, Huhta, & Sadowska, 2022). See also (European Commission, 2021b) section 1.10.

However, there is a significant difference between the level of legal certainty regarding the compliance of long-term contracts with competition law between public and private contracts. While the conditions under which long-term public contracts can develop are clear, the same cannot be said for private contracts. For the latter, predictability is 'missing in action'. This discrepancy could lead investor to favour unduly public LTCs with the side effect of preventing the development of private or commercial LTCs.

3.1. Both public and private LTCs are needed to achieve deep decarbonisation

As is clear from the proposed market design reform, private and public contracts are necessary and complementary:

> *"Thus, two-way contracts for difference or equivalent schemes with the same effects and power purchase agreements* ***play complementary roles in advancing the energy transition and bringing the benefits of renewables and low carbon energy to consumers****. Subject to the requirements set out in this Regulation, Member States should be free to decide which instruments they use to achieve their decarbonisation objectives. Through PPAs, private investors contribute to additional renewable and low carbon energy deployment while locking low and stable electricity prices over the long-term. Likewise, through two-way contracts for difference or equivalent schemes with the same effects, the same objective is achieved by public entities on behalf of consumers. Both instruments are necessary to achieve the Union's decarbonisation targets through renewable and low carbon energy deployment, while bringing forward the benefits of low-cost electricity generation for consumers"*[32]

For those long-term contracts to develop, being public or private, predictability and legal certainty are key to triggering investment decisions.

As the 2023 State of the EU Energy Union (S of EU) report concluded:[33]

> *"In order to achieve the EUs ambitious 2030 targets, investments in the clean energy transition will have to increase considerably, while public resources are expected to be limited. In its 2023 strategic foresight report, the Commission estimated that EUR 620 billion of additional annual investments are necessary to achieve the objectives of the European Green Deal and REPowerEU.* [34] *… Although European financial institutes like the European Investment Bank and the European Bank for Reconstruction and Development will play a key role, the bulk of investments will have to come from the private sector. The EU must create an attractive investment environment and leverage private funding. An important enabler for the necessary investments is long-term predictability in policy* "

When it comes to compliance with competition law rules, there is an important difference between public and private LTCs to the detriment of the latter.

3.2. The high level of legal certainty for public LTCs

[32] Draft Regulation (Council of the European Union, 2023) (§46).

[33] (European Commission, 2022); section 3.

[34] See COM(2023) 376 final (European Commission, 2023i); based on SWD (2023) 68 final (European Commission, 2023f) and COM/2022/438 final (European Commission, 2022h). In addition, the Net-Zero Industry Act requires in total EUR 92 billion over the period 2023-2030.

The high level of legal certainty for public LTCs regarding compliance with competition rules is due, on the one hand, to new decisions and, on the other hand, to recent guidelines of the Commission.

3.2.1. CfD and CCfD decisions

The use of CFDs as form of state support is not new – already by end of 2021, nine EU countries plus the UK were using two-sided CfDs. Both CfDs/CCfDs are likely to qualify as state aid measures but can be declared compatible. This provides legal certainty ex ante for the parties concerned. In 2014 the Commission had already approved a UK scheme for renewable support based on a CfD mechanism under Article 107(3)c).[35] It also approved CfD mechanisms for individual projects in the UK, such as the Drax power station and Hinkley Point. More recently, Danish support in the form of a 2- way CfD was approved for the Thor offshore wind farm project (2022) and similar form of state aid for a Lithuanian offshore wind project was approved in October 2023 under the then recently adopted Temporary Crisis and Transition Framework (TCTF).

All three sets of rules were applied in recent ESA decision of 19 December 2023 – on Phase I of Sørlige Nordsjø II. Noteworthy here is that the CfD would be for 15 years – and although CEEAG stipulates a maximum of 10 years for an aid measure[36], a longer duration can be approved under the TCTF.

CCfDs are being discussed within the framework of industrial decarbonization, while CfDs have been mainly employed in the context of power decarbonization (Zachmann & McWilliams, 2021). The Commission has also previously approved CCfDs under the state aid rules. A CCfD offsets the difference between the market price for emissions allowances and the carbon avoidance costs. If the market price for emission allowances is lower than the carbon avoidance costs, the State pays the difference. If the market price for emissions allowances is higher than the carbon avoidance costs, the company (i.e., the consumer) pays the difference (Europex, 2021).

In the revision of the EU-ETS Directive presented on July 14th, 2022, the Commission proposed to extend the scope of the EU Innovation Fund allowing it to provide support through competitive tendering mechanisms such as CCfDs, whereby up to 100% of the relevant costs of the projects may be supported. As EU funds are not subject to the Treaty State aid rules, ex ante clearance is not required for EU- backed CCfDs. Nationally funded CCfDs are however subject to the State aid rules.

3.2.2. CEEAG

The revised State Aid Guidelines – the CEEAG[37] - currently in force, specifically mention revenue stabilisation mechanisms in the form of two-sided Contracts for Difference (CfD) as a good model to support the further expansion of renewables. Importantly they offer Member States the flexibility to hold technology-specific auctions.

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[35] State aid SA.36196 (2014/N) (European Commission, 2014)

[36] As specified in the last sentence of point 70, of the CEEAG aid can be granted for a maximum period of 10 years but Point 78(e) TCTF requires that the aid be granted in the form of a two-way CfD in relation to the energy output of the installation and that the contract duration shall be no more than 20 years after the aided installation starts operations.

[37] The CEEAG was published in the OJ L 277, 27.10.2022, p. 218 (EFTA Surveillance Authority, 2022). The Communication from the Commission on the Temporary Crisis and Transition Framework for State aid measures to support the economy following the aggression against Ukraine by Russia was adopted in OJ C 101, 17.3.2023, p. 3 (European Commission, 2023e)

The CEEAG of 2022 (and to some extent the modifications introduced by the TCTF of March 2023) indicate that in principle, such aid should be awarded through competitive auctions.

Following notification of a proposed measure the Commission can conduct a detailed assessment. For example, the Commission has approved an Italian support scheme for the promotion of biomethane to be injected in August 2022.[38] That measure includes two forms of support, an investment grant of up to 40% of eligible investment cost and an incentive tariff in the form of a feed-in tariff or a feed-in premium that is granted cumulatively to biomethane producers via tenders.[39] In particular, the feed-in tariff mechanism prevents the beneficiary from receiving more than the contracted feed-in tariff, while the feed-in premium works as a two-way contract for difference under which the beneficiary is required to repay any revenue obtained in excess of the incentive tariff.[40] The Commission examined the proposed CfD at paras 67, 28 and 155 of its detailed decision finding the measures to be compatible state aid. Similarly in its decision on Hungary the Commission considered the annual support to be granted in the form of a two-way CfD, in line with point 78(e) of the Temporary Crisis and Transition Framework, for a period of 10 years after the supported storage facility starts operations, was compatible aid.[41] In its decision on Romania of 6 March 2024 the Commission approved aid to be granted to RES projects through competitive bidding procedures in the form of standardised **two-way contract for difference**. The strike price will be determined through the bidding procedures ("pay as bid") and the reference price will be calculated as a monthly output-weighted average of the market price of electricity in the day ahead markets (European Commission, 2024b). Finally, on 30 April 2024 the Commission has approved a two way CfD with a duration of 40 years for the construction and operation of a new nuclear power plant in Dukovany in the Czech Republic (European Commission, 2022e).

3.3. The low level of legal of certainty for private LTCs

The legal certainty provided by the legal framework applicable to state aid is limited as private and commercial LTCs will mostly fall outside the scope state aid rules (3.3.1.). Regarding antitrust rules, the lack of clarity can be considered as problematic and may hinder the development of private and commercial LTC (3.3.2.).

3.3.1. Limited applicability of state aid rules to private LTCs

Corporate PPAs and other forms of commercial contracts are unlikely to be subject to the Treaty state aid rules unless state resources are involved. This situation may well arise where state owned, or controlled companies conclude a long-term contract with a prospective undertaking and the decision to grant an economic advantage can be attributed to the state. The beneficiary may be a producer who has a guaranteed (public) buyer at a fixed volume and price or an offtaker who benefits from preferential tariffs charged by a publicly owned or controlled supplier. These contracts may of course still be deemed compatible state aid in accordance with Articles 107(2) or (3) TFEU.

[38] SA.100704 (2021/N) (European Commission, 2022g), para. 1

[39] SA.100704 (2021/N) (European Commission, 2022g), para. 3.

[40] SA.100704 (2021/N) (European Commission, 2022g), para. 89.

[41] See, SA.102428 (2022/N) (European Commission, 2023h) paras 101 to 102. Note also that whereas point 78(e) of the Temporary Crisis and Transition Framework sets out that the two-way CfD should be 'in relation to the energy output of the installation', storage facilities differ from renewable generation in so far as they have both energy intake and energy output, and their added value for the system thus lies in shifting the time of energy output, thereby increasing system flexibility

i) EU decisions on PPAs

There is little relevant case law on the application of the Treaty state aid rules to PPAs for the benefit of producers in the current markets. The state aid rulings concerning PPAs concluded in Hungary and in Poland in the late 1990 are of limited use today given that the ECJ did not take the past investments that the PPAs had been designed to realize into account in its assessment. These investments had occurred prior to accession. The EC had taken the date of Hungary's and Poland's accession to the European Union as the relevant date for the assessment of the PPA at issue**.** Hence the Court rejected the electricity producer's argument that the test of a private investor in a market economy must be analysed by reference to the economic context prevailing at the date of conclusion of the PPAs [42] The ECJ found that the PPAs could not be found to be compatible aid given that there was no link to new investment (after accession). Rather the contracts conferred operating aid on the relevant producers.[43] This form of aid is not usually considered to be compatible aid.

Long term contracts benefitting certain large industrial offtakers through preferential tariffs may also be classified as incompatible state aid. This is illustrated in the extensive litigation regarding the contracts between the Greek state-owned company and the country's main aluminum producer.[44]

Finally, in its opening decision on 'Support for the construction and operation of a new nuclear power plant at the Dukovany site' which had concerned inter alia an offtake contract in the form of a Power Purchase Agreement between the beneficiary and a Special Purpose Vehicle (SPV) owned and managed by the Czech government, by which the SPV commits to buy all electricity produced by the beneficiary at a fixed price during 60 years,[45] the Commission opened the second stage of the state aid procedures.[46] In its final decision the Commission approved a long term CfD as opposed to a PPA. (EFTA Surveillance Authority, 2011a)

ii) Efta Surveillance authority (ESA) decisions

Recent decisions adopted by the Efta Surveillance authority (ESA) provide more current examples of PPAs which have been held to be market based and therefore are not state aid or which have deemed to be aid that is compatible with the Treaty rules. ESA has cleared two PPAs concluded between the Icelandic state monopoly and energy intensive users as in line with the market economic operator – MEO- principle. [47]

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[42] See T--468/08 (Court of Justice of the European Union, 2014) par 86 ; ***Aucune source spécifiée.*** *paragraph 62.*

[43] See further (Hancher, Ottervanger, & Slot, 2021), at pt 21-034.

[44] SA.26117 (European Commission, 2011) . OJ 2012**,** L166/83 ; Case C-604/14P (Court of Justice of the European Union, 2016), as discussed also in L Hancher et al, (Hancher, Ottervanger, & Slot, 2021), at pt 21-015.

[45] In this case the SPV was to be mandated to sell all this electricity to the electricity wholesale market

[46] State resources – eg. Czech nuclear opening decision: SA.58207 (2021/N) OJ 22C 299/5 (European Commission, 2022e). The final decision was adopted on 30 April 2024.

[47] In Decision No 392/11/COL (EFTA Surveillance Authority, 2011c), ESA assessed a power contract entered into between the monopoly producer of electricity Landsvirkjun and Íslenska Kísilfélagið ehf. on the sale of electricity, and to make 35 MW of power ([…] GWh per year) available as of 2013 for a planned silicon metal plant in Helguvík. The Icelandic authorities informed at the time that the electricity Landsvirkjun had agreed to provide for this plant as of 2013 was already available in its power generation system and thus no further construction of power plants would be needed. The Authority concluded in its Decision No 392/11/COL that there was no State aid involved in the contract. But this contract never entered into effect. In a subsequent decision, 67-15-COL (EFTA Surveillance Authority, 2015) ESA found that the prices and terms negotiated in the Power Contract under its later assessment, in 2015, for the same volume of energy as in the previous contract, 'are not less favourable for Landsvirkjun than in the contract entered into with Íslenska Kísilfélagið ehf.,

In its decision in GIEK[48] in 2011 on as system of guarantees to back long-term power purchasing agreements the ESA observed that historically, the power intensive industry in Norway has covered most of its need for power through long-term contracts under terms set by the government. Such contracts have either already expired or would expire in 2011. Several enterprises within the power intensive industry in Norway had indicated that they wished to enter into new commercial long-term contracts.

For some undertakings, this was due to the expiration of existing long-term power contracts. For others, the need to enter into new long-term contracts was related to new investment plans (such as the upgrading of existing production facilities or the construction of new plants that use new production technologies). Long term contracts with the power intensive industry lasting for ten or twenty years involved considerable power deliveries and payment obligations and hence several power sellers demanded that the power intensive firms offer guarantees. Hence the state backed guaranteed system was found to be compatible state aid.

It is of note that the ESA in its decision in GEIK observes at p 11, section 3 that:

> "*Long-term electricity supply contracts to power intensive industries may give rise to competition concerns. Such contracts concluded with large electricity consumers may, in particular when the seller has a degree of market power, foreclose access to customers and thereby hinder the entry and expansion of the seller's actual or potential competitors. The Authority has in the present decision only reviewed the notified scheme with reference to the provisions of the EEA Agreement relating to state aid. The present decision does therefore not prejudge any future review the Authority may carry out under the provisions of the EEA Agreement relating to competition law*".

The proposed draft regulation on EMD sets out some further guidance on how state support for PPAs could be structured where necessary. If a guarantee scheme is backed by a member state, it shall include provisions to avoid lowering the liquidity in electricity markets (Art 19.3). Members states should restrict their support to RES PPAs and should not support fossil fuel contracts (see Articles 19(4 and 4A)).

Commercial PPAs entered into without any state involvement will of course not require any assessment under the state aid rules.

3.3.2. The limited clarity regarding application of antitrust rules

Articles 101 and 102 TFEU can be relevant to commercial as well in some cases, to state backed contracts. The application of these latter provisions to different types of LTCs will be discussed extensively in the next sections. However, it is useful to recall that an LTC is not per se prohibited. Earlier Commission decisions resulted in settlements with commitments to address the main competition concern relating to foreclosure of the retail market.

Hence as we will explore in sections 4 and 6 LTCs remain possible under Articles 101/102 TFEU and in certain cases, subject to adjustments, conditions and commitments. These rules, unlike Article 107 TFEU are however applied *ex post.* **This is why state backed or public LTCs can be put at an advantage as these forms of LTCs can obtain legal certainty whereas other forms of private LTCs cannot**. At most the parties can look to past precedent

according to the calculations provided by Landsvirkjun in the case at hand. This is another indicator for the Power Contract to be on market terms'.

[48] Dec. No: 56/11/COL (EFTA Surveillance Authority, 2011a); (EFTA Surveillance Authority, 2011b)

but as we go on to explain in section 4, that precedent is limited and outdated. Indeed many of the commitments given in these past cases have now expired.

This lack of certainty may prevent the development of private and commercial LTC and affect the effectiveness of other provisions of secondary legislation.

In that respect, it is worth recalling that Article 15 of the RED II Directive (Directive (EU) 2018/2001) already provides that all Member States should remove barriers to the uptake of renewable energy PPAs and it is also a requirement on all Member States to report on and to remove any barriers to these renewable PPAs in their National Energy and Climate Plans (NECPs).[49] 'Energy from renewable sources' or 'renewable energy' is defined as 'energy from renewable non-fossil sources, namely wind, solar (solar thermal and solar photovoltaic) and geothermal energy, ambient energy, tide, wave and other ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas, and biogas'. [50]

A recent Commission Recommendation of 18.5.2022[51] on speeding up permit-granting procedures for renewable energy projects and facilitating Power Purchase Agreements, provides further, albeit limited guidance and recommends that**:**

> (33) *Member States should swiftly remove any unjustified administrative or market barriers to corporate purchase agreements of renewable energy, in particular to accelerate the uptake of corporate purchase agreements of renewable energy by small and medium-sized enterprises*.
> (34) *Member States should design, schedule and implement support schemes – and guarantees of origin – in such a way that they are compatible with, complement and enable corporate purchase agreements of renewable energy*.

Further, Member States should make use of the practices described in Chapter II of the guidance in the Annex to the Recommendation. [52]

These obligations are further strengthened in the recast Renewables Directive - RED III (Directive (EU) 2023/2413). Article 15 as amended, requires Member states to assess the regulatory and administrative barriers faced by PPAs. They will also be tasked with removing unjustified barriers and to ensure that the associated Guarantees of Origin (GOs)[53] can be transferred to the buyers of the renewable PPAs.

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[49] Member States should communicate to the Commission, every two years starting in March 2023, as part of the integrated national energy and climate progress reports to be submitted pursuant to Article 17 of (Regulation (EU) 2018/1999), p. 1.

[50] The definition comes from (Directive (EU) 2018/2001) on the promotion of the use of energy from renewable sources (Renewable Energy Directive, RED II) adopted in December 2018.

[51] SWD C(2022) 3219 final (European Commission, 2022c), and accompanying guidelines, SWD(2022) 149 final (European Commission, 2022d), pp36-42.

[52] European Commission launched a public consultation in January 2022 on how to improve permit-granting procedures for renewables projects and facilitating PPAs **Aucune source spécifiée.**.]. With reference to the questions on facilitating Power Purchase Agreements, the participants ranked hedging electricity price over the mid to long term (54) as the main driver behind the willingness to engage in PPAs, followed by the need to find new forms of revenue stabilisation as public support decreases (34). Concerning the main barrier that the participants have encountered when entering into PPAs, 29 participants considered market prices volatility or market price uncertainty in general as the main limitation. See also, the Council Recommendation and the accompanying SWD(2022) 149 final (European Commission, 2022d).

[53] Art 19 RED III requires that MS must ensure that all energy produced can receive a GO. Under the current RED II, there is a right for countries to not issue GOs to renewable energy generators that receive state support. The amendment to Article 19 removes this exception, establishing a stronger link to PPAs, and makes it obligatory for electricity suppliers to use GOs in their fuel mix disclosure.

The use of credit guarantees has been proposed to help SMEs access the PPA market. Member states are also obliged to indicate the expected volume of national renewable power generation that will be supported by corporate PPAs.

The Commission in turn shall also analyse the barriers to long-term renewable energy purchase agreements and in particular to the deployment of cross-border renewable energy purchase agreements and shall issue guidance on the removal those barriers.

Conclusion to section 3

As shown in this section, currently there is a major gap in predictability depending on whether the LTC is public or private and also whether it concerns low carbon, fossil or renewable sources of electricity.

As highlighted above the 2022 Commission Recommendation on PPAs does not address the impact of competition law to renewable PPAs. As no prior impact assessment was carried out on the proposed EMD Regulation the 'predictability gap' was not identified or otherwise dealt with. Yet this legal void could act as a disincentive to invest, as commented upon by Professor Glachant in his accompanying report.

It could also lead to a perverse incentive for conclusion of CfDs if more legal certainty is provided through the system of ex ante clearance under the Treaty state aid rules for contracts based on administered prices.

We therefore draw the following conclusions.

First, although the new EMD proposal promotes the use of long-term contracts on the wholesale and retail markets, legal certainty for many forms of (commercial or private) LTCs is missing. This likely to be a deterrent for investors, with the no exception of state backed (or public) contracts where they fall under Article 107 TFEU on state aid, and where ex ante clearance from the Commission can be obtained.

Second, there seems to be no justification for such a discrepancy. State funded LTCs serve broadly similar purposes as any other LTC – as the EMD proposal itself makes clear. Commercial and state backed LTCs should stimulate new investment and reduce price volatility. The EMD proposal does not express a preference for one form as opposed to another and it is self-evident that the scale of the energy transition requires a massive and urgent wave of investment from both the public and the private sector. Furthermore, the EU competes globally for private capital and at all stages of the value chain:

"*To boost the EU's competitiveness, resilience, and leadership, it is crucial to ensure that capital keeps flowing to EU companies at the scale needed to accelerate the roll-out of strategic net-zero technologies. Deep and integrated capital markets and an effective sustainable finance framework are essential pre-requisites to mobilising private investments at scale towards clean energy technologies'*. (European Commission, 2023j)

Third, access to state funding is not evenly distributed across the EU. In the absence of extensive EU wide resources – the availability of EU funds can at best only help leverage private sector investment. In June 2023, the Commission proposed to set up the European Strategic Technologies for Europe Platform (STEP) to bolster and leverage the EU's current instruments (in particular, the EIC Fund, InvestEU, and the Innovation Fund) to allocate (e.g., by earmarking public funding) and disburse financial support to clean tech investments. This can help de-risk innovation investments, bridge the gap between project developers and corporate and institutional investors, and ultimately to channel further private-sector investment. But it cannot substitute the latter.

Fourth, subsidies through CfDs for competitive technologies may reduce competitive pressure. State-backed two-sided CfDs for RES expansion are considered to be detrimental to the forward market, as they entirely remove the price risk exposure for the beneficiaries of the instrument. With state backed CfDs, the state becomes the counterpart and market participants are no longer exposed to risk. Two-sided state backed CfDs adversely affect the demand side, which is lacking the possibility to hedge the long-term procurement of electricity due to shrinking liquidity provided from the supply side.

Fifth this 'predictability gap' leaves an important question - what assistance if any is past precedent on the application of Articles 101/102? What is still relevant today?

Sixth the guidance on compatibility of LTCs that are state backed has been updated as recently as 2022 and has been refined once again in 2023 in the light of recent economic and market developments. And yet we must look back some 15 years to a very different market situation in the case of past precedent on the application of the Treaty competition rules.

Finally, the issue of market power or dominance does not usually feature in state aid analysis. it is highly unusual for the Commission to consider whether the grant of state aid to a potential beneficiary would increase the latter's market power.[54] In the recent Case T-34/21, *Ryanair v European Commission*. Ryanair successfully sought the annulment of Commission decision SA.57153 of June 2020 by which the Commission approved injection of capital in Deutsche Lufthansa [DLH] of the amount of EUR 6 billion. The recapitalisation was considered to be State aid compatible with the internal market under Article 107(3)(b) TFEU but Ryanair successfully maintained before the GC that the Commission should have taken into account that the beneficiary – DLH- enjoyed significant market power to deny the compatibility of the proposed state aid. This case is however quite unique and indeed is now on appeal.[55]

In the next section we consider past Commission precedent on the application of Articles 101 and 102 TFEU to long term physical (as opposed to financial) contracts and question the current relevance of that precedence to what Professor Glachant terms the 'third world of electricity'.

Section 4: The Commission's policy on long-term contracts since the opening of markets to competition

Since the electricity markets were opened up to competition, the Commission has paid particular attention to long-term contracts. As Professor Glachant recalls in his paper annexed to this report, that attention was not always benign.

The purpose of this section is to describe the Commission's policy on the application of the competition rules to LTCs, based on a review of the main Commission decisions in antitrust cases relating to long-term contracts, as well as its reports (European Commission DG Competition, 2007) (European Commission, 2016b), guidelines and notices[56].

To explain the Commission's policy on the application of the competition rules to long-term contracts in the electricity sector, a distinction can be made between the issues raised by long-term contracts in the upstream segment and the issues raised by long-term contracts in the downstream segment.

The Upstream segment corresponds to electricity exchanges between producers and suppliers or buyers/retailers, as well as electricity trading activities. In other words, these are transactions that do not correspond to a sale of electricity to an end consumer.

The Downstream segment corresponds to the relationship between suppliers and end consumers (i.e. retail).

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[54] See also the anti-concentration rules at para 58 in the Hungarian case cited above (European Commission, 2023h). Hungary submitted that these anti-concentration rules will ensure that support will be granted under the measure to at least five independent beneficiaries.

[55] Case C-457/23 P- Deutsche Lufthansa v Ryanair and Others

[56] Several relevant decisions are presented in the appendix, together with extracts from the reports that illustrate the Commission's doctrine on LTCs, Appendix, Tables B and C.

4.1. Upstream long-term contracts and the risk of vertical foreclosure

In the Commission's view at that time, the main problem with long-term contracts on the upstream segment was that, like the upstream/downstream integration of operators, they limit the liquidity of wholesale markets, making it more difficult for new suppliers to enter the market.

> *"Vertical integration of generation and retail reduces the incentives to trade on wholesale markets. This might lead to a drying up of wholesale markets. Illiquid wholesale markets are a barrier to entry as they are characterised by higher price volatility. Volatile wholesale markets might oblige new entrants to enter as a vertically integrated generator and supplier, which is more difficult. [...]. Long-term power purchase agreements (PPAs) have similar effects to vertical integration"* (European Commission DG Competition, 2007, p. 169).

The importance attached by the European Commission to the liquidity of wholesale markets was explained by the fact that it considered that new suppliers could only enter the market if the wholesale market was sufficiently liquid to allow them to obtain the electricity they needed to supply their clients.

The Commission's reasoning was based on three steps:

Firstly, the Commission noted that a high level of maturity of the electricity markets prevailed at the time of liberalisation of the sector (4.1.1.).

Secondly, the Commission considered that competition could not be developed by upstream/downstream integrated operators but rather by stand-alone suppliers (4.1.2.).

Thirdly, the Commission highlighted the fact that the liquidity of wholesale markets was a necessary condition to enable 'stand-alone' suppliers to obtain the electricity needed to develop their activities under satisfactory conditions. In this regard, the Commission considered that upstream/downstream integration of operators as well as long-term electricity purchase/sale contracts between producers and electricity suppliers contribute to limiting the liquidity of wholesale markets (4.1.3.).

4.1.1. The high level of maturity of electricity markets since liberalisation

In its 2007 report, the Commission identified the very high degree of maturity of the electricity sector at the time of its liberalization as a major difficulty for market entry of new suppliers.

According to the Commission, this level of maturity was the result of the following two observations.

Firstly, on the upstream side, the production capacity installed in the various Member States when the markets were opened up to competition was more than sufficient to meet demand, and there was no obvious need to renew a significant proportion of the production facilities that had already reached the end of their useful life. It was even observed that there was excess capacity at European level. In its subsequent final report on the sector enquiry into capacity mechanisms, almost eight years later, the Commission stressed that *"the EU as a whole is currently in a situation of overcapacity" (p.3).*

As a result, investment in new production capacity did not necessarily make economic sense for a new entrant.

Secondly, on the downstream side, demand for electricity remained relatively stable. Moreover, as new consumers were rare, this meant that the customers of new entrants necessarily had to be customers lost by incumbent operators. The Commission noted in 2007 that:

> *"Since electricity markets are characterized by a high level of maturity, which manifests itself in a relatively low number of new connections to the grid as compared to the total number of customers, the bulk of new customers can only be recruited among existing customers by means of lower prices and/or better terms and conditions of sales"*[57] .

Two factors have further complicated market entry by aggravating the lack of economic space left to new entrants:

- Continued growth in installed capacity, mainly as a result of the development of renewable energies (thanks to the support schemes put in place by the Member States to achieve the objectives set at EU level). The Commission pointed out in 2016 that: "*Installed generation capacity has substantially increased over the last two decades, as a result of investments by both incumbent generators and new entrants. These investments focused notably on wind and solar technologies, but also on combustible fuel technologies, especially gas*"[58] .
- A contraction in demand as a result of the economic crisis in 2008, further reducing the economic space for new suppliers: "*The constant increase in total generation capacity since 2000 coupled with the decrease in average demand since 2008 has widened the margin between average demand and installed capacity since the beginning of the economic crisis*"[59]

4.1.2. The consequences in terms of market structure: the development of stand-alone suppliers

In view of the market configuration described above, the Commission considered that the development of competition could only be driven by the entry of "stand-alone" suppliers, i.e. suppliers with no upstream integration and therefore who need to buy the electricity they need on the wholesale market. As a result, the liquidity of the wholesale market is becoming a necessary condition for the development of competition on the electricity markets.

The Commission had in 2006 noted that:

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[57] SEC(2006), (European Commission DG Competition, 2007) p. 285.

[58] SWD(2016) 385 final (European Commission, 2016a), p. 11.

[59] *Ibid.*, p. 16.

> *"Cross-border entry in electricity markets is facilitated to an important degree if entrants do not have to enter as vertically-integrated companies acquiring simultaneously generation capacity and a customer portfolio, but can choose to enter as purely a supply company or generation company. This reduces the risks and costs of entry. However, this is only possible if a liquid wholesale market exists. Liquid wholesale markets are therefore key for the erosion of incumbent's market power"*[60].

In the Commission's view, the main consequence of an insufficiently liquid wholesale market could be to threaten the development of competition by preventing stand-alone suppliers from proposing offers that are competitive with those of integrated operators.

> *Lack of liquidity can have many negative effects, such as: high volatility of prices, which increases costs for hedging (this can be an important barrier to entry) and a lack of trust that the exchange price reflects the overall supply and demand balance in the wholesale market (reduced reliability of the price signal).*
>
> *A lack of liquidity may also initiate a vicious circle by creating further incentives to vertical integration because operators do not want to rely on the wholesale market for their electricity supply. New entrants face higher risks when markets are volatile and consequently may not be able to match, at least not in the short run, market offers from their vertically integrated competitors and may only be able to attract capital at higher costs"*[61].

Accordingly, the Commission considered that measures capable of reducing the liquidity of wholesale markets could constitute an obstacle to the development of competition on electricity markets. This is why it considered that upstream long-term contracts could contribute to vertical foreclosure.

4.1.3. Upstream long-term contracts and the risks for the development of competition

From the point of view of wholesale market liquidity, the effects of the upstream/downstream integration of operators and those of long-term contracts between a producer and a supplier are comparable: they reduce - or even cancel out - a supplier's need to obtain supplies on the wholesale market and, symmetrically, they reduce - or even cancel out - a producer's need to sell his production on the wholesale market.

It is precisely because of their effects on the liquidity of wholesale markets that the Commission considered long-term contracts concluded between producers and suppliers (i.e. on the Upstream segment) to be problematic.

The Commission noted that:

> *"Another form of vertical foreclosure was found to exist by way of the integration of generation/imports and supply interests within the same group. This form of vertical integration reduces the incentives for incumbents to trade on wholesale markets and leads to sub-optimal levels of liquidity in these markets. [...]. Low levels of liquidity are an entry barrier to both gas and electricity markets"*[62].

[60] SEC(2006) (European Commission DG Competition, 2007) p.152.

[61] SEC(2006), *Ibid*., p.151.

[62] SEC(2006), *Ibid.*, p.9.

Its reasoning is explained in more detail in its 2006 Report:

> *"Vertical integration of generation and retail within the same group reduces, all other things being equal, the need to trade on wholesale markets. In turn, this can lead to a reduction of liquidity of wholesale markets. In a market without any vertically integrated companies, all electricity will necessarily be traded between generators and suppliers. In contrast, when all companies are vertically integrated, each vertically integrated group in the sector would meet (part of) its respective demand from final customers with own generation capacity and so would have less need to enter into wholesale transactions"*[63]*.*

The risk is the same in the case upstream long-term contracts, which can increase the vertical closure of the market:

> *"Exclusive long-term contracts may also result in* ***vertical foreclosure****. They have similar effects to vertical integration of generation and retail activities, as independent suppliers have (almost) no access to uncommitted generation and independent generators cannot supply electricity directly to the wholesale market"*[64] *.*

This risk has also been highlighted in the literature. De Hauteclocque noted that: *"If a significant part of electricity flow is contracted on a long-term bilateral basis, the development of wholesale spot markets is limited and price volatility increases, which complicate entry and encourage market players towards vertical integration or long-term contracting"* (de Hauteclocque, 2009)[65]*.*

This warrants two remarks on the past assessment of the Commission on upstream long-term contracts.

The first relates to the fact that there has been no decision to impose penalties for breaches of Articles 101 or 102 TFEU in relation to these upstream long-term contracts. It seems that the Commission has chosen not to seek to penalise behaviour that could have the effect of reducing the liquidity of the wholesale markets. Instead, it has sought to encourage the introduction of mechanisms designed to ensure greater liquidity of the wholesale markets, such as virtual power plants (VPPs).

The second relates to the fact that in its 2015 Report on capacity mechanisms, the European Commission recognised that long-term instruments are, nonetheless, essential to protect suppliers - and indirectly their customers - against price volatility on the markets.
It noted that:

> *"Member States might be concerned that removing price caps, and higher peak wholesale prices, will affect retail prices. The sector inquiry has found that such risks can be managed by the market itself, for instance by introducing hedging products which allow suppliers and end consumers to protect themselves against price peaks, including over the longer term via long term hedging contracts. Such longer term hedging can also help support a business case for investment by generators, by converting uncertain potential scarcity prices into a certain regular income stream. A further uptake of such hedging contracts should, therefore, be seen as a*

[63] *Ibid.*, p. 151.

[64] Ibid.

[65] spec. p.96.

> *useful development that could help reduce the need for capacity mechanisms in the first place"*[66]*.*

As we shall see below, the problem of the degree of upstream integration of suppliers is one of the main issues in the current reform of the market design of electricity markets.

4.2. Downstream long-term contracts and the risk of downstream foreclosure

Regarding long-term contracts concluded between a supplier and an end consumer, the risk identified by the Commission was market foreclosure as described as follows:

> *"The concept of downstream foreclosure refers to the anti-competitive effects which can arise from a bundle of parallel long-term agreements between final customers and their suppliers - be it a dominant supplier or a network of suppliers engaging in the same type of practice. A network of parallel contracts can adversely affect the market when the contracts prevent alternative suppliers from finding suitable outlets for their products. The customers have met their entire demand - or a large part thereof - on the basis of long-term contracts with incumbent suppliers and are thus no longer available on the market"*[67]*.*

As the Commission's report shows, the foreclosure effect[68] - i.e. the difficulty for new suppliers to enter and develop on the supply market - was linked to a combination of three factors:

- The length of supply contracts: the longer the contracts, the less chance alternative suppliers have of making an offer to consumers.
- The exclusive nature of the contracts: If the supply contracts cover all the consumers' electricity needs, these become unavailable to other suppliers. Conversely, if only part of the volumes required to cover consumers' needs is covered by their supply contract, other suppliers can submit offers to these consumers for the remaining volumes;
- The cumulative effect of signing a significant number of contracts: market foreclosure results from the multiplication of contracts with the above-mentioned characteristics, which has the effect of drying up the market for alternative suppliers.

Unlike upstream long-term contracts, downstream long-term contracts have given rise to several Commission decisions which are first presented (4.2.1.) before highlighting the commitments offered (4.2.2.).

4.2.1. Commission decisions on long-term energy supply contracts

While several Commission decisions were handed down between 2000 and 2010[69] , two decisions are particularly important and should be highlighted: the *Distrigaz* decision (European Commission, 2007) and the *EDF* decision (European Commission, 2010).

[66] (European Commission, 2016b), p.6.

[67] SEC(2006), (European Commission DG Competition, 2007), p.283.

[68] In its decision regarding the merger TRIMET/EDF/NEWCO (COMP/M.7019) (European Commission, 2013), the Commission also took into account foreclosure effects deriving from a merger: “Customer foreclosure may arise where a supplier integrates with an important customer on the downstream market, thus foreclosing upstream rival’s access to this customer base” (§60).

[69] See Appendix, Table B

The two decisions concern the supply markets for industrial customers: *Distrigaz* concerns the gas market in Belgium and *EDF* concerns the electricity market in France. In both cases, the Commission identified very similar competition problems:

For Distrigaz, it noted that:

> *"Distrigas had concluded a portfolio of contracts with customers in the relevant market(s) for varying durations, which require customers to purchase certain volumes of gas from Distrigas. Given the market position of Distrigas, the Commission's concern is that access to customers could be foreclosed due to the combination of two factors: the duration of the contracts and the volumes of gas tied to Distrigas. Alternative suppliers could therefore find it difficult to build up a viable customer base" (§18).*

For EDF, the Commission noted that:

> *"EDF may have abused its dominant position by concluding in France contracts with large industrial customers of electricity which, by their scope, duration and nature foreclosed the market for the supply of electricity to large industrial customers for both principal and secondary suppliers" (§30).*

It is interesting to note that, in the *EDF* decision, the Commission also noted that the risk of foreclosure would have been increased by the fact that the level of demand for electricity at national level was considered to be stable:

> *"Against the background of generally **stable demand**, EDF's behaviour may have had a direct and significant impact on the prospects for entering the market and the possibility for new entrants to expand their activities" (§35).*

In both cases, the commitments offered by the companies concerned resolved the competition concerns identified by the Commission.

These commitments were quite similar: see Table A below

Table A

		Proposed measure	
		Distrigaz case	**EDF case**
Object	**Limiting foreclosure effect**	Distrigas will ensure that for each calendar year a minimum of 65% and on average for all calendar years a minimum of 70% of the gas volumes supplied by itself and connected undertakings to industrial users and electricity producers in Belgium will return to the market, that is to say, alternative suppliers can make a competing offer to the customers concerned	EDF undertakes that from 1 January 2010, for each calendar year during which the commitments apply, at least 60%, and on average for all the calendar years during which the commitments apply, at least 65% of the electricity supplied to large industrial customers, either directly or through a buying group, will be returned to the market
	Duration of contracts	No new contract with industrial users and electricity producers can be longer than **five years**	EDF pledges that the maximum duration of new contracts for the supply

			of electricity to large industrial customers will not exceed **five years**
	Exclusive	None	In its offers to large industrial customers, EDF undertakes to systematically offer large industrial customers **two alternative types of contract**, one of which will effectively allow the customer to contract for additional supplies with another supplier of his choice

4.2.2. Limits to the scope of the commitments

Three limitations should be highlighted.

i. The first limit is temporal

In the two decisions mentioned above, the commitments were limited in time. The limit was 4 years for Distrigaz and 10 years for EDF. See Table B below.

Table B

	Distrigaz case	**EDF case**
Duration of commitments	The commitments are to have a duration of **four years from the start of 2007**. They are to apply as long as Distrigas holds a share of more than 40 percent of the market and at least 20 percent more than the share of its nearest competitor	The commitments concerning the foreclosure of the French market for the supply of electricity to large industrial customers will be applicable for **ten years from 1 January 2010.** They will not apply if the volumes sold by EDF on the reference market amount to 40% at most of the total volumes sold on the reference market during the preceding civil year

This time limit should be understood as an indication that the European Commission did not wish to prohibit long-term contracts with consumers, but sought above all to guarantee, for a set period, a certain frequency of renewal of the supply contracts concluded between the incumbent operator and its customers, in order to allow alternative suppliers to submit offers[70].

Both the commitments given in the Distrigaz case and those given in the EDF case have expired and are no longer binding on the companies concerned.

ii. The second limitation relates to the consumers concerned.

In both cases, the commitments are limited to industrial customers consuming a minimum annual quantity of energy: 12 GWh for Distrigaz and 7 GWh for EDF.

In other words, the suppliers involved in these cases remained free to offer long-term contracts to consumers whose annual consumption was below the thresholds in question.

iii. The third limitation concerns investments.

In the Distrigaz case, the commitments did not apply to gas contracts signed with electricity producers who had invested in a new installation of more than 10 MW. This exclusion was justified by the Commission insofar as *"the investment might not go ahead, unless greater predictability of prices and possibly increased security of supply is guaranteed for the investor"* (§37).

Although it notes that such an exception is not provided for in the case of industrial consumers embarking on investments in new industrial production capacity, it nevertheless stresses that in such a case, it could reopen the procedure. It notes that:

> *"For industrial users no such exclusion is provided for in the commitments, but given the time taken to build new production capacity and that no energy intensive industrial user came forward to present concrete projects to build new industrial production facilities, it is assumed that no such new capacity will be constructed during the lifetime of the commitments. If this were to change, the Commission is ready to reopen the proceedings on the grounds that there has been a material change in the facts on which the decision was based, in line with Article 9(2)(a) of Regulation (EC) No 1/2003,* ***provided the industrial user can demonstrate that it needs a gas supply contract with a duration of over five years and it needs to include Distrigas in the procurement process for this contract****" (§37).*

[70] In practice, however, long-term contract offers on the downstream market have all but disappeared.

Conclusion to section 4

On the basis of our analysis of the Commission decisions presented in this section, we would make the following observations:

First, the Commission's competitive analysis of long-term contracts was carried out in a very specific context:

- The analysis was carried out at the very beginning of the opening up of markets to competition in the 'first electricity world' as described by Professor Glachant.
- The markets were very mature (upstream: overcapacity, downstream: shrinking demand).
- Opening up to competition required the development of a more liquid wholesale market.

Second, the Commission's concerns in terms of competition law regarding long-term contracts and the resulting restrictions on dominant operators in the Commission's decisions were linked to this very specific context.

Third, the commitments entered into by operators under the above-mentioned decisions have expired and in the meantime, the market has evolved very significantly.

Fourth, the commitments were never tested in court. It is therefore important to stress that the Commission did not articulate – nor was it required to defend - a coherent theory of harm in these past cases.[71]

As we explained in section 3, the guidance on compatibility of LTCs that are state backed has been updated as recently as 2022 and has been refined once again in 2023 in the light of recent economic and market developments. Individual decisions have applied these concepts in some detail. And yet past precedent on the application of the Treaty competition rules to commercial or private contracts dates back some 15 years.

Section 5: Changing Objectives, Changing Markets, Changing Perspectives?

In this section we consider three principal reasons why in the interests of legal certainty new guidance on LTCs is needed. We consider three dimensions- the scale and urgency of the deep decarbonisation goal and the role of electrification as the 'linchpin' in this process.

We then move on to consider how the internal electricity market has evolved in the last 15 years facilitating market entry for new actors and new service providers across the Union.
As noted in Professor Glachant's paper accompanying this report, 'Contracts, markets and law & regulation always interact. It is therefore needed to start with the identification of the three successive worlds of electricity markets that we can acknowledge in the EU, since the start of our electricity liberalization at the end of the 1990's. The first world is rightly centered on "*Just building Open Markets*"; the second one on a pragmatic "*Co-building a set of working markets*"; and the third one is very typical of the 2020s-decade new frenzy: "A*ccelerated Decarbonization Push towards a Net Zero Industry".'*[72]

[71] See further (Spector, 2014)

[72] See Professor Glachant's accompanying paper.

Finally, in section 6, we examine the recent revisions (as well as ongoing revisions) to relevant guidance on the application of the Treaty competition rules in the light of climate change and sustainability objectives.

5.1. Changing Markets and Decarbonization objectives by 2030/2050:

5.1.1. The transition to RES

The transition to RES generation-based electricity has been underway for the last decade. It is estimated that the EU's transition to wind and solar is happening faster than the global average. Already since the presentation of the Fit-for-55 package in July 2021, a new energy reality has unfolded across Europe. The share of renewable energy in gross final energy consumption reached 21.8% in 2021. Wind and solar in early 2023 accounted for 22% of electricity production, up from just 13% in 2015. Globally, the share of wind and solar increased from 4.6% to 12.1% in the same period (EMBER, 2023).

As noted in the accompanying paper by Professor Glachant, 'the EU's response to the energy crisis, fueled by the Russian invasion of Ukraine, has turbocharged the Union's green transition with deployment of key clean technologies taking off at previously unprecedented levels Following the 2022 crisis the Union has accelerated the installation of renewable energy capacities and produced increasing amounts of renewable electricity. The EU agreed increased targets for the clean energy transition in line with REPowerEU and the European Green Deal. Co-legislators have agreed on the target of 42.5% renewables in the EU energy mix by 2030, with the ambition to reach 45%, and on the target to reduce final energy consumption at EU level by 11.7% by 2030 compared with the 2020 reference scenario projections.'

Nevertheless, with an average yearly increase of 0.67 percentage points since 2010, reaching the new 2030 EU target of 42.5% (and even more so the aspirational target of 45%) will require a massive faster growth in the coming years to deliver deep decarbonization.

5.1.2. Solar and Wind

Progress on RES generation has certainly been made in the last year. In 2022, 39% of electricity was generated by renewable sources and, in May 2023, wind and solar surpassed for the first-time total fossil electricity generation. 2022 was a record year for installed new solar photovoltaic (PV) capacity (41 GW), which is 60% more than in 2021 (26 GW). Similar results were achieved with onshore and offshore wind capacity (45% more capacity installed than in 2021), also thanks to accelerated permitting processes.

At the same time the market for PPAs in Europe continues to grow albeit unevenly. Growth is recorded especially for Solar/PV and especially in some EU markets such as Spain and Sweden (S&P Global Commodity Insights, 2023) (IEA, 2024); and for some markets – demand for PPAs could outstrip supply by 2030 – as in the UK.[73] Yet the volume of wind/offshore PPAs even declined in 2022.

[73] See (AURORA, 2022) (full report from pablo.mayo@auroraer.com)

5.1.3 Investments for Electrification and Deep Decarbonisation

In its 2023 strategic foresight report, the Commission estimated that EUR 620 billion of additional annual investments are necessary to achieve the objectives of the European Green Deal and REPowerEU.[74] This figure includes renewables and transmission networks, but the State of the Energy Union (S o EU) Report 2023 also recognizes that:

> "*Nuclear energy continues to contribute to the security of electricity supply. In 2023, it generated around 24% of total electricity produced in the EU (23% in 2022; 26% in 2021). The EU's nuclear power plants are ageing, while new advanced nuclear technologies, such as small modular reactors, are emerging, requiring significant investments in this sector. In view of this, the Commission has adopted measures to improve the investment environment for long-term operation and new capacities 72[75]. In this situation, those Member States having nuclear energy as a part of their energy mix need to take timely decisions regarding investments in the long-term operation of existing nuclear power plants and make appropriate safety and efficiency improvements*.

As Ember has reported in its 'European Energy Review' for 2022 (EMBER, 2022),

> '*The structural decline of nuclear power output has slowed emissions reductions in the EU power system. The last ten years have seen rapid growth in wind and solar (+334 TWh), while EU nuclear power output has declined by 105 TWh. Consequently, almost a third of wind and solar power growth in the last decade has replaced lost nuclear output, rather than fossil fuels, which has slowed decarbonisation efforts.*"

According to the IEA Net Zero Emissions scenario, nuclear power will play a limited role in the global power mix in 2030, keeping its share at about 10%. Yet, to meet the world's rising demand for power with zero-carbon energy source, the IEA pathway requires nuclear generation to grow by 3.8% annually from 2021 to 2030. From 2015 to 2022, the average growth rate was at just 0.6% and 2022 showed a 4.7% fall.

5.1.4. By 2050 - Electricity becomes 'the new linchpin of the global energy system'

As the IEA recognizes in its World Energy Outlook 2022 (IEA, 2022, p. 23):

> '*A huge increase in energy investment is essential to reduce the risks of future price spikes and volatility, and to get on track for net zero emissions by 2050. From USD 1.3 trillion today, clean energy investment rises above USD 2 trillion by 2030 in the STEPS[76], but it would have to be above USD 4 trillion by the same date in the [Net Zero Emissions] 'NZE' Scenario, highlighting the need to attract new investors to the energy sector. Governments should take the lead and provide strong strategic direction, but the investments required are far beyond the reaches of public finance. It is vital to harness the vast resources of markets and to incentivise private actors to play their part.*"

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[74] COM(2023) 376 final (European Commission, 2023i); based on SWD (2023) 68 final (European Commission, 2023f) and COM/2022/438 final (European Commission, 2022h). In addition, the Net-Zero Industry Act requires in total EUR 92 billion over the period 2023-2030.

[75] Reference is made to the Complementary DA - EU Complementary Delegated Act that under strict conditions includes specific nuclear activities in the EU taxonomy and Net-Zero Industry Act.

[76] STEPS = Stated Policies Scenario; APS = Announced Pledges Scenario.

In the NZE Scenario, electricity becomes the new linchpin of the global energy system, providing more than half of total final consumption and two-thirds of useful energy by 2050. Total electricity generation grows by 3.3% per year to 2050, which is faster than the global rate of economic growth across the period. Annual capacity additions of all renewables quadruple from 290 GW in 2021 to around 1 200 GW in 2030. With renewables reaching over 60% of total generation in 2030, no new unabated coal-fired plants are needed. Annual nuclear capacity additions to 2050 are nearly four-times their recent historical average. (at 121).

On the demand side, and as the IEA has remarked, in industry the highest potential for electrification is in low-temperature heat processes, such as food drying and beverage processes. Due to the highly competitive market and long lifetime of equipment, the electrification of industrial end uses is often slower compared to other demand sectors. Avoiding price volatility is therefore key. (IEA, 2023)

Today, supply side liquidity has gradually improved. Demand side liquidity on the other hand stems from industry demand and – in the case of fixed end-consumer tariffs – also from retail demand. Especially in the current energy crisis, priorly signed fixed consumer contracts based on long-term hedges have been beneficial for consumers to be protected from fast price increases. PPAs, which are complementarily hedged at forward markets to manage the price risk and counterparty risk, can contribute to the forward market liquidity. The rise of PPAs in the last five years as a proper alternative to subsidy schemes has already led to an improvement of the forward market by introducing longer-term trading products of up to ten years in advance.

Further room for improvement includes amongst others the matching of smaller PPAs by strengthening existing platforms (e.g., Pexapark), the provision of sufficient transmission capacity in power networks and permitting. A future-proof market design should contribute to the resilience of the energy system to respond to more structural risks. Short-term interventions should reflect this ongoing evolution.

5.1.5 Other EU Policies

In his analysis of *'Electrifying "à la carte'* and the importance of LTCs for industry in realizing the net zero target Professor Glachant concludes that this is only amplifying what the former strategy ("*Stronger PPAs for the hardcore")* confirmed.

As Professor Glachant observes, 'the many world industry value chains created during the last four decades of globalization are not strong enough, reactive enough and secure enough to guarantee our EU to successfully conduct its new and fundamentally transformational policies. For almost a decade, say since the first invasion of Ukraine in 2014, or the Paris agreement success in 2015, we might have thought that our EU demanding energy & climate policy would succeed if… the rest of the world was more or less following some kind of similar transition[77]… We today have raised so high the bar of transformations to undertake in the EU, that we must add new conditions and new options to increase the likelihood of a final EU success starting in 2035 or 2040 (Meeus, et al., 2023). Many of these new additional layers of transformation are strongly industrial: creating or expanding manufacturing capacity; feeding it with friendly enough raw materials or components; making an extensive inventory of our entire geological subsoil; training or re-skilling human resources; developing new clean techs; upgrading all our related infrastructures accordingly. The EU really saw the issue and rightly reacted with two

[77] Remarkably analysed by Nathalie Tocci, in her landmark book "*A Green and Global Europe*" (Tocci, 2023)

new policy focuses at the beginning of 2023: The Net Zero Industrial Act, and the Critical Raw Materials Act'.[78]

'Therefore, EU has tripled down its stakes, where the US is only adding a promising new layer of post-Covid industry push to its already strong national fossil industries. It is unfortunately obvious that the EU and the US are not living anymore in the same world of markets and policies. Of course the EU might fail, or succeed, but it cannot mimic the US current policy. Our EU has to do more than the US, because it does not have protective domestic fossil strength. And EU has to do more with less, because it does not have the strong central executive power[79] and the strong central financial capabilities that the US can benefit from.'

Hence the new Net Zero Industry Act (NZIA) – reflects the value chain approach which is needed to keep large consumers in Europe. LTCs can help co-ordinate contracts across the different stages of the value chain. This value chain approach combined with the increased options for LTCs should encourage an efficient switch to electrification and greening of industrial processes. That objective was indeed already recognized by the French Competition Authority in its opinion on the 'Exeltium' buyers consortia in 2005, as discussed below. That guidance focused on what at the time seemed to be an exception but what now has to be viewed the rule for many sectors.

5.1.6 PPAs in the US markets

Finally, and in the light of the increasing concerns as to the USA's competitive advantages on EU industry, it should not be overlooked that PPAs are a widely used instrument in the United States.[80] Not only do LTCs appear not to raise any anti-trust concerns whatsoever, but on the contrary, the need to create active incentives to encourage their conclusion is recognized.[81] While renewables costs have fallen dramatically in recent years and the actions of many large US corporations have led to significant additions of zero-carbon generation resources, the PPA market may not yet be deep enough to sustain its recent pace of annual procurements without further policy incentives (Kobus, Nasrallah, & Guidera, 2021).

Conclusion to section 5.1.

It is now widely recognized that an excessive focus on short term electricity markets cannot deliver deep decarbonization at the required depth and speed to achieve the net-zero targets. RES growth is of course important but concomitant investment in non-fossil baseload investments is also necessary – all the more so to correct the downward trend.

LTCs are also widely endorsed an important tool to deliver these objectives. Enhanced investment in RES is only one side of the equation. Active demand side management and the efficient use of demand side resources is equally important, especially for large energy users. The promotion of energy communities, self-consumption, storage as well as flexibility must all play a role. This requires diversification/innovation in the ways consumer obtain their electricity supply. There is no 'one size fits all' (Beiter, Guillet, Jansen, Wilson, & Kitzing, 2024).

[78] But the US too reacted in similar areas, to break more from China and rebuild more independent industrial strength, by incorporating a massive financing plan to its post-Covid recovery plan: The *Inflation Reduction Act*, endowed with hundreds of $ billions.

[79] See below, Jean-Michel Glachant and Emma Menegatti, p. 89

[80] See for example (Ballentine, Falwell, Biasucci, & Fisher, 2022), (Long Duration Energy Storage Council, 2022)

[81] See (ING Think, 2022) on the growing numbers of PPAs

As we explore in the next section the EU internal electricity market has facilitated the emergence of an integrated market for electricity as well as for related products and services, which can facilitate some but not all of these objectives.

5.2. The European electricity market.

The IEM as is stands at the end of 2023 is a complex system involving multiple economic agents at various levels who trade in numerous market timeframes, both short and long-term in the physical and financial market segments (upstream and downstream as well as hybrid) discussed above in section 4.

Gradually, markets across Europe have been integrated – or, more precisely, coupled – allowing for trade between different areas. Specifically, day-ahead markets are cleared simultaneously across Europe, thereby ensuring that interconnectors are efficiently utilised, and prices are brought as closely together as possible. This ensures that electricity is supplied from the cheapest sources and consumed where it has the highest value, thereby maximising value added across Europe. The integration of electricity markets is the realisation of the more general idea of the "single market", whereby gains from trade can and will be realised across Europe, in this case for electricity (and gas). (Roques, 2021)

The last electricity market reform took place as recently as 2019. The 'Clean Energy Package', is, in effect, the fourth electricity market reform, adopted after a series of legislative packages were put in place in 1996, 2003 and 2009 (Hancher & Salerno, 2012). The Clean Energy Package is comprised, inter alia, of Electricity Directive (EU) 2019/944, which made amendments to the previous electricity market directive (2009/72/EC), and Electricity Regulation (EU) 2019/943 as well as the ACER Regulation 2019/944. The proposed EMD Regulation would amend the 2019 Regulation and the 2019 Directive.

5.2.1. The Evolution of the IEM since 2007

In this section we note important changes since the Commission's 2007 Sector report[82] and recall the main/relevant regulatory principles now governing the EU's electricity market and structure of that market.

First, the structural unbundling of TSO assets and to a lesser extent DSOs, is now fully realized. These 'unbundled' companies hold a monopoly right to operate, and often own, the relevant part of the infrastructure. Nevertheless, access to unbundled networks is subject to complex ex ante regulation. TSOs must provide third party access to all suppliers on regulated terms. As a result of the adoption of structural unbundling in the ED of 2009, incumbent producers finally lost any control over the transmission function and could not deter new entrants from rival suppliers or imports. TSOs use market coupling to allocate transmission capacities. [83] This means that there are few possibilities for producers to impose any form of territorial or use restriction on their customers: they cannot block access to transmission capacity to influence the destination of their products.

Second, vertical integration of production/supply/ trade is still permissible in the IEM and is primarily governed by competition law as applied ex post: a parent should not confer unfair advantages on their downstream subsidiaries or related companies if that would amount to a

[82] SEC(2006), (European Commission DG Competition, 2007).

[83] See (Meeus, The Evolution of Electricity Markets in Europe, 2020) for a useful summary.

restriction of competition, as recently confirmed in the case law of the ECJ[84] and specialized regulatory authorities (NRAs) and competition authorities (NCA)s. All consumers irrespective of the volume of consumption have been free to choose their supplier since 2009 – they are not tied to local producers.

At the same time ex ante regulatory oversight of supplies to the retail sector and smaller commercial consumers remains prevalent at national level and subject to ACER oversight. Terms/conditions of supply as well as retail tariffs may be subject to strict regulatory approval at national level[85].

Third, at the wholesale and retail levels new entrants have to some extent eroded market share of former incumbents. [86] New entrants promote diversification of supply – including renewables but also of service offering – including energy efficiency services, demand management, aggregation etc. This means for example, that for the balancing services market- the need for the EON -type commitments -as discussed above at section 4 - is now outdated.

Fourth, as a main objective of the 2019 Clean Energy for All European Package was to make the European electricity market legislation fit for the clean energy transition, many of the new actors and services have gained recognition in the legislation, such as flexibility services, aggregators, energy communities and prosumers, among others.[87]

Fifth, since 2009 the EU has adopted extensive regulation to ensure interoperability and day ahead/intraday coupling.88 Before the introduction of market coupling, cross-border capacity on one hand and electricity on the other hand, had to be purchased separately. This body of detailed technical legislation which has evolved substantially since 2009 enhances access to key aspects of the electricity market for new entrants/competitors. Markets are well connected so that the EC could recently conclude in its opening decision in the Czech nuclear reactor case, that the relevant market for the assessment of the LTCs at issue is the 'CORE' region.[89]

Sixth, electricity is no longer traded only over the counter – OTC – but through increasingly consolidated power exchanges. The Sector Inquiry of 2007 had used several indicators to measure the performance of power exchanges, such as the number of players, traded volumes, the price-setting frequency of certain generators and price volatility. Not surprisingly, the smaller and/or more concentrated markets found that an exchange did not work very well in their contexts. Trade on spot markets has developed considerably since 2006. An organised market place operated by an exchange has various advantages for new entrants such as pooling of liquidity, transparency, emergence of a single reference price, payment and delivery security, anonymity and the application of market rules for its members.

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[84] As discussed in the next section.

[85] Since the entry into force of Directives 2009/72 and 2009/73.

[86] An analysis of developments between 2016 and 2021 reveals that among the 25 EU Member States for which data are available (no data for Austria and the Netherlands), six saw an increase in the market share of their leading electricity generator. The most rapid developments were in Portugal and Greece where the largest generator lost at least 35 % of its own market share. The two Member States where the share of the largest generator within the electricity generation market increased the most were Hungary (19.1 %) and Belgium (18.7 %). (Eurostat, 2023)

[87] See (European Commission, 2015); and the Electricity Directive (Directive (EU) 2019/944), Recital (6).

[88] Traders use the Intraday market to make last minute adjustments and to balance their positions closer to real time. Cross-border trading is essential in Intraday trading, and European Intraday markets are connected via the Single Intraday Coupling (SIDC).

[89] See paras 5 and para 174 of SA.58207 (European Commission, 2022e). The Core region is a region set up by ACER in its 2019 decision (ACER, 2019)

Seventh, products traded in futures and hedging markets were in their infancy in 2007 but are now a feature of the current European electricity market, even if further improvements to market integration are desirable (ACER, 2022b, p. 4).

New products are also making their way to market. With the uncertainty of the overall power market, many larger end users are looking to hedge their long-term GoO exposure instead of their full power exposure with longer term contracts. Hedging their full power exposure five to ten years forward is a massive liability that involves high costs because of unclear consumption rates. This is especially true for those consumers who are concerned that even if the overall power market will be well supplied, the renewables power market could become tighter as a result of new policies and regulation.

Conclusion to section 5

As we have seen in this section, the scale and urgency of the leap for deep decarbonization is immense and role of private or commercial LTCs widely recognized. Urgent action is required on all fronts including the promotion of the use of LTCs.

From this brief survey of progress on the IEM project we can conclude that major progress on market integration has been realized in period following the 2007 Sector Inquiry Report.

This already indicates that a new perspective on old commitments for certain types of LTCs is not only needed but also justified in so far as those commitments were grounded on a very different structure and operation, as well as regulation of the European electricity market at the relevant time. Because of the changes in the sector, the current assessment of the role of LTCs is outdated and should be reconsidered.

As the subject matter is of utmost importance, stakeholders must have clarity and legal certainty that their actions do not contravene European law.

Section 6: Competition law and recent policy developments

The Commission currently does not have a recent record of providing guidance on sustainability in individual cases but in 2022-2023 important revisions to its existing toolbox have been adopted. These include the revisions to the vertical guidelines and regulation as well as to the horizontal guidelines. These revisions deal primarily with the application of Article 101 TFEU and focus on the pursuit of 'sustainability objectives. We review these developments below. In this chapter we then turn to ongoing consultations on Article 102 TFEU and market foreclosure. Do these developments further a coherent and updated theory of harm?

We can conclude that on the basis of our review here, although there are important developments in the application of both Articles 101 and 102 TFEU to promote sustainability and related objectives, these do not yet address all the issues raised by the need to spur on 'deep decarbonisation' to address climate change.

6.1 The Horizontal Guidelines – the new chapter on sustainability agreements

The new chapter on sustainability agreements ('agreements between competitors that pursue sustainability objectives') of the Horizontal Guidelines ('HA') was consulted in March 2022 and

finally adopted in June 2023.[90] The content of this chapter was not just inspired by the broader global and European context but also by discussions of sustainability in the context of the OECD (OECD, 2020), the International Competition Network (ICN) (Hungarian Competition Authority, 2021), the European Competition Network (ECN), and by the adoption of measures to reconcile competition law and sustainability by various NCAs and Member States' governments. It also results from extensive public and academic debate on the issue.[91] In large part these developments have revolved around the interpretation of Article 101(3) TFEU and its national equivalents (Gassler, 2021).

First, it can be noted that the Horizontal Guidelines of 2023 (HA)[92] adopt a broad concept of sustainability and cite inter alia climate change, reducing pollution, making efficient use of natural resources. While competition law enforcement is assumed to contribute to all these goals, the existence of externalities – effects on third parties that are not reflected in the price – means the Commission recognizes the existence of a type of market failure[93] that may require collective action through public regulation or private cooperation agreements.

Second, sustainability agreements that fall outside the scope of Article 101(1) TFEU are identified such as joint awareness campaigns.

Third, if it can be substantiated that an agreement has as its main objective the pursuit of a sustainability objective, this leads to a presumption that it is not restrictive by object. In this case the effects that the agreement has on competition will have to be assessed.[94] It may be noted that unlike the policy on sustainability agreements, the guidance for other types of agreement such as Research & Development is subject to a market share threshold and includes several hard-core restrictions, notably restriction of the freedom of the parties to conduct other R&D efforts, limitations of output or sales and price fixing, and active and passive sales restrictions.

Fourth, the Guidelines include a qualitative 'soft safe harbour' for sustainability standards that carry the presumption they do not violate the prohibition of Article 101(1) TFEU.[95] Such standards are assumed to contribute to sustainable development and empower consumers.
To fall within the soft safe harbour, sustainability standards are required to be meet the following six cumulative conditions:
(i) they must be transparent; (ii) voluntary; (iii) non-exclusive vis-à-vis efforts to attain higher standards; (iv) not involve unnecessary exchange of commercially sensitive information; (v) include effective and non-discriminatory access to the outcomes of the standardisation procedure; and (vi) not result in significant increases in price or reductions of choice. If one of these conditions is not met, an individual assessment is required.

Fifth, under Article 101(3) TFEU and the fair share criterion for consumers (or pass-on), the Commission requires a net neutral effect as the result of costs and benefits for consumers in the relevant market.

Consumers receive a fair share of the benefits when the benefits deriving from the agreement outweigh the harm cause by the agreement, so that the overall effect on consumers in the

[90] Horizontal Guidelines (European Commission, 2023g) Chapter 9, Sustainability agreements, para 515.

[91] See e.g. (Monti & Mulder, 2017); (Nowag, 2016); (Gerbrandy, 2017); (Nowag, 2022); (Holmes, 2020)

[92] Para 535 and 558.

[93] On market failures in competition law see **Aucune source spécifiée.**

[94] Horizontal Guidelines, para 534.

[95] Ibid., paras 549-553

relevant market is at least neutral. Therefore, the sustainability benefits that result from an agreement must accrue to the consumers of the products covered by that agreement.

The Commission has identified three sources of relevant benefits that it would consider.[96]

These are:

> **(i)** individual-use value that covers more traditional consumer benefits in terms of price, quality or choice, for example, using organic instead of chemical fertilizers or replacing plastics with more durable materials.
> **(ii)** the novel individual non-use value that involves situations where consumers are willing to pay for broader environmental benefits that do not qualify as individual use because they do not derive a direct material benefit from them, such as improved working conditions or animal welfare standards; and
> **(iii)** even in the absence of individual willingness to pay, there may be collective sustainability benefits that benefit users in the relevant market if there is a significant overlap with the consumers enjoying the benefits as members of broader society – for instance by the limitation of greenhouse gases. (Sauter & Van de Sanden, 2023)

Cumulatively, these three sources will have to provide for full compensation of consumers within the relevant market for the fair share criterion under Article 101(3) TFEU to be met. The Commission requires the quantification of benefits.[97]

Finally, in parallel to the Horizontal Guidelines (HA), in 2022 the Commission adopted a new notice underlining that it is prepared to provide individual undertakings with guidance concerning their interpretation of the competition rules, which includes immunity from fines for bona fide parties.[98]

6.2. Vertical Agreements

The revised Guidelines on vertical agreements (VA) were adopted before the new Horizontal Guidelines brought about the substantial changes that we described above. Some important differences between the approach to vertical agreements should be kept in mind.

First, while the Vertical Block Exemption Regulation (VBER) (European Commission, 2022b) applies only below a market share threshold, the guidelines highlight that the Block Exemption also '*applies to vertical agreements that pursue sustainability, resilience and digital objectives.*'[99]

Second the VBER and guidelines do not address sustainability agreements as such. Instead, the Vertical Guidelines highlight that such agreements 'are not a distinct category of vertical agreements under Union competition law. These agreements must therefore be assessed using the principles set out in these Guidelines, while considering the specific objective that they pursue.'[100] As such the Vertical Guidelines discuss sustainability matters in the context of

[96] For the theoretical background to this approach see (Inderst, 2022); **Aucune source spécifiée.**

[97] Joint purchasing is explicitly covered by the Horizontal Guidelines, in its chapter 4. The Horizontal Guidelines also focus on infrastructure sharing in its chapter on production agreements, although the sustainability chapter (under use value) acknowledges that 'agreements to share infrastructure or distribution transport services between competitors may reduce the parties' costs and thus the price of the final product' and 'may also have positive externalities consisting of a reduced negative impact on the environment'.

[98] (European Commission, 2022i); revising (European Commission, 2004)

[99] Guidelines on vertical restraints (European Commission, 2022f) . para 8.

[100] Ibid.

selective distribution agreements[101] and regarding single branding and exclusive supply contracts.

These exclusive agreements are referred to as single branding agreements.[102] Conversely, where a renewable energy supplier is required to sell all or large parts of its output to one buyer such contracts are typically referred to as exclusive supply agreements.[103]

In both situation the potential anticompetitive risks are the same. Exclusive agreements which are binding for a longer period create foreclosure risks either on the buyer or the seller side.[104]

Third, in the assessment of anti-competitive risks, one has to take account of the volumes covered by the agreement and the intended duration.[105]

Fourth, to qualify for an exemption under Article 101(3) TFEU a hold up problem for the sustainable investment would need to be addressed. The reasoning regarding the hold-up problem applies not only to single branding but also exclusive supply agreements,[106] taking into consideration the specific bargaining power of the buyer versus the supplier side.[107]

The Vertical Guidelines explain that:

> *For example, a hold-up problem could arise where an energy supplier facing increased demand for renewable energy[108] wishes to invest in a hydropower plant or wind farm. The supplier may only be willing to take that long-term investment risk if a sufficient number of buyers are willing to commit to purchase renewable energy for a longer period. Such vertical agreements with buyers may be pro-competitive, as the long-term non-compete obligation may be necessary for the investment to take place at all, or for it to take place on the foreseen scale or within the foreseen time.[109]*

For situations of single branding where the energy supplier binds its clients, the Vertical Guidelines suggest that there would usually not be issues below 5 years of length. Yet, even longer periods might be justified and exempted under Article 101(3) TFEU in cases where the length is justified by a longer depreciation period.[110]

In contrast where the buyer requires exclusivity from the supplier, the Commission take a more critical stance. It highlights that:

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[101] Ibid., paras 144 and 235.

[102] Ibid., para 298.

[103] Ibid., para 321.

[104] For an overview of the case law regarding contracts in the energy field, see section [4] above and on when the threshold to anticompetitive effect is passed see (Talus, 2011) and in general also (de Hauteclocque, 2009)

[105] This is assessment is sometimes described as a two-step test first looking at the market shares and blacklisted clauses and then examining effects. See.**Aucune source spécifiée.**

[106] Guidelines on vertical restraints, paras 327, 329, 330.

[107] Ibid., para 327.

[108] See Article 2(1) of (Directive (EU) 2018/2001) on the promotion of the use of energy from renewable sources [2018] OJ L 328/82'.

[109] Guidelines on vertical restraint, para 316.

[110] See para 316 where the Commission explains that Article 101(3) TFEU can be fulfilled even where the length of 5 years stipulated in Article 5(1) of the Vertical Block Exemption is exceeded.

> *[e]xclusive supply agreements shorter than five 5 years entered into by non-dominant undertakings usually require a balancing of pro- and anti-competitive effects, while agreements lasting longer than five years are, for most types of investments, not necessary to achieve the claimed efficiencies, or the efficiencies are not sufficient to outweigh the foreclosure effect of such long-term exclusive supply agreements*[111]

In conclusion, the Vertical Guidelines do not reflect sustainability and climate change considerations to the same extent as the later Horizontal Guidelines. But there is nothing to suggest that the principles for the assessment under Article 101(3) TFEU set out in the new Horizontal Guidelines could not equally be applied in the context of vertical agreements.[112]

6.3. Art 102: review of the Guidance on Exclusionary conduct (ongoing)

The Commission's objective to adapt competition law to take account of market developments also applies to unilateral practices covered by Article 102 TFEU. Accordingly, on 27 March 2023, the Commission launched the process leading to the adoption of guidelines on exclusionary abuses. As pointed out by the Commission, "The guidelines will be based on the case law of the EU Courts and the Commission practice based on it. They will lead to greater legal certainty and help foster consistent enforcement between the Commission, national competition authorities and national courts. The Commission plans to publish a draft of the guidelines for public consultation by mid-2024" (European Commission, 2023a)

Unlike Article 101 TFEU the application of Article 102 on the prohibition of abuse of a dominant position has not been subject to extensive guidance or regulation. In 2008 the Commission had issued guidance on its enforcement priorities. This document was subject to considerable criticism at the time of its publication, and it is generally considered to be very much out date, especially in the light of the subsequent case law of the CJEU. [113]
Nevertheless, the existing Guidance of 2008[114] recognises and the CJEU has ruled, that dominance itself is not anticompetitive, but dominant undertakings have a special responsibility to ensure that their behaviour does not result in an anticompetitive effect in the market.

Where there is market failure in a market led by a single dominant firm or collective dominance, the Commission may enforce Article 102 TFEU only where that market failure is caused by and can be attributed to the dominant firm(s). It is necessary for the allegedly abusive conduct to "produce an anti-competitive exclusionary effect".[115]

In accordance with case law the CJEU has confirmed the need to establish causation of anticompetitive conduct. In *Brasserie de Haecht v Wilkin*, the CJEU stated that "*it would be pointless to consider an agreement, decision or practice by reason of its effects if those effects were to be taken distinct from the market in which they are seen to operate and could only be*

[111] Vertical Guidelines (European Commission, 2022f), para 324.

[112] See (Margvelashvili, 2023). See also Novag and Sauter in L. Hancher (ed), forthcoming.

[113] Furthermore, that guidance dealt with one of the two main categories of abuse as developed through the case law of the courts and commission practice – i.e. so-called exclusionary abuses. [The other category – exploitative abuse – was to be given less precedence in enforcement practice].

[114] Communication from the Commission (2009/C 45/02)**Aucune source spécifiée.**, para. 3

[115] Case C-23/14, *Post Danmark A/S v Konkurrenceradet*, para. 42 (emphasis added) (Court of Justice of the European Union, 2015)

examined apart from the body of effects, whether convergent or not, surrounding their implementation". [116]

This was further emphasised in *Delimitis,* where it was held that the relevant conduct "*must make a significant contribution to the sealing-off effect"* in the market, including its legal and economic context.[117]

It is useful in this context to recall ENEL 's recent comments to the consultation on the reform. ENEL reflected on the (current) 2008 Guidance priorities[118]:

> "*The current enforcement priorities are indeed useful for identifying ECs approach to determine whether to pursue cases as a matter of priority, but these are not sufficient to also provide clarity on the entire spectrum of potential abusive behaviors, in terms of both (i) guidance on how the dominant undertakings could shape their behaviors for not infringing competition rules, and (ii) an increased legal certainty and relevant assessment milestones to be taken into consideration in the benefit of all the stakeholders involved*."

The revised guidance is intended to tackle some of these issues and to consider new principles (European Commission, 2023c, p. 2). Final adoption of the new version of the guidance is scheduled 2025 (European Commission, 2023b).

6.3.1. New goals and new approach?

New goals?

The revision process was launched by a Commission 'Policy Brief 'in which the authors quote Vice-President Margrethe Vestager as stating that the antitrust provisions "*pursue multiple goals, such as fairness and level-playing field, market integration, preserving competitive processes, consumer welfare, efficiency and innovation, and ultimately plurality and democracy*".[119]

New approach?

In fact, the 2008 Guidance set out a methodological approach how to deal with (certain) cases under Article 102 TFEU. This approach is today identified as a "more economic approach" With the "more economic approach", consumer welfare was placed at the center of competition law and Article 102 TFEU and can be found at para 19 of the 2008 Guidance.

The CJEU has not however endorsed a narrow consumer welfare test as the main objective of Article 102 TFEU. This is one of the main reasons why the current 2008 Guidance needs to be updated. The Court considers that Article 102 TFEU pursues a much wider set of objectives as it confirmed in its recent ruling in *Servizio Elettrico Nazionale (SEN)*.

6.3.2. The Servizio Elettrico Nazionale case

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[116] Case 23/67 *Brasserie de Haecht v Wilkin*, p. 415. (Court of Justice of the European Union, 1967)

[117] Case C-234//*89 Delimitis v Henninger*, para. 27. (Court of Justice of the European Union, 1991)

[118] ENEL submission to consultation on new guidelines, F3407268- Submitted on 24 April 2023

[119] Vestager, '*A Principles Based approach to Competition Policy*' (Keynote at the Competition Law Tuesdays, 22 October 2022), quoted in the Competition Policy Brief (European Commission, 2023c) p. 1.

The Court in a recent high profile energy sector case - *Servizio Elettrico Nazionale* (SEN)[120] - clearly positioned the goal of Article 102 TFEU against the wider Treaty objectives and held that Article 102 TFEU is *"part of a set of rules, the function of which is to prevent .competition from being distorted to the detriment of the public interest, individual undertakings and consumers, which ensure well-being in the European Union".*[121]

The Court did not therefore reduce Article 102 TFEU to a provision that protects consumer welfare only. And it is argued, this confirms that consumer welfare or direct consumer harm (understood as negative price effects) are not the only or the correct benchmark for Article 102 TFEU.[122]

As one commentator observed of this approach (Podszun, 2019),

> *'[It] 'is fully in line with the long-standing jurisprudence of the Court of Justice that requires independence in decision-making from economic actors. This requirement of independent decision-making is not confined to Article 101- cases. Independent decisions are the very basis of a working market economy*".

The Court also explicitly states that it is "the effective competition structure" that Article 102 TFEU protects.[123] In this context the Court draws on the 'as efficient a competitor' test 'the 'AEC' test - to address foreclosure issues. The novelty of *SEN* is that it extends the AEC approach to non-pricing cases. [124] Indeed, in *SEN*, for example, the CJEU has held that:

> *"The relevance of the material or rational impossibility for a hypothetical competitor, which is as efficient but not in a dominant position, to imitate the practice in question, in order to determine whether that practice is based on means that come within the scope of competition on the merits, is clear from the case-law on practices both related and unrelated to prices."*

In fact, in *SEN,* the Court:

- sees as the purpose of Article 102 TFEU the "maintenance of the degree of competition existing in the market or the growth of that competition" (para 44);

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[120] Case C-377/20 (Court of Justice of the European Union, 2022) para 41, see also 42

[121] In this case the regulator had found that, between January 2012 and May 2017, SEN and EE, coordinated by their parent company, ENEL, had abused their dominant position, in breach of Article 102 TFEU, on the markets for the sale of electricity to domestic and non-domestic users connected to the low-voltage grid in the areas where the ENEL Group managed the distribution activity. The conduct complained of consisted in the implementation, from January 2012 to May 2017, of an exclusionary strategy for the purpose of transferring the client base of SEN, the incumbent manager of the protected market, which in 2017 still represented between 80% and 85% of households and between 70% and 85% of the other customers, to EE, which operates on the free market. The objective of the ENEL Group was thus to prevent the large-scale departure of SEN's customers to third-party suppliers, in anticipation of the complete abolition of the protected market, the date of which had, however, been set originally only in 2017.

[122] Servizio Elettrico Nazionale, (Court of Justice of the European Union, 2022) para 41

[123] Paras 44, 47 - Servizio Elettrico Nazionale (Court of Justice of the European Union, 2022). See also Unilever, 19 January 2023 (Court of Justice of the European Union, 2023) para 37. *That said,* ***it is not the purpose of Article 102 TFEU to prevent an undertaking from acquiring, on its own merits, on account of its skills and abilities in particular, a dominant position on a market, or to ensure that competitors less efficient than an undertaking in such a position should remain on the market****. Indeed, not every exclusionary effect is necessarily detrimental to competition, since competition on the merits may, by definition, lead to the departure from the market or the marginalization of competitors that are less efficient and so less attractive to consumers from the point of view of, among other things, price, choice, quality or innovation*."

[124] Case C-377/20 *SEN*, para. 80 (Court of Justice of the European Union, 2022)

- identifies practices "undermining an effective structure of competition" as violations of Article 102 TFEU (para 44);
- requires the dominant company to engage in "competition on the merits", a clear reference to a more normative assessment of behaviour (para 45);
- includes not only end consumers but also intermediary consumers in what it sees as the "ultimate objective" (para 46);
- speaks of "well-being" (thereby avoiding the term "welfare") of consumers as the ultimate goal, which is much broader and includes a normative dimension (para 46);
- names as values for consumers "among other things, price, choice, quality or innovation" (paras 45 and 47) or simply "positive effects" (para 47).

As this and related cases makes clear, Article 102 TFEU cannot prevent an undertaking from enjoying, on its own merits, a dominant position on a market, nor can it ensure that less efficient competitors than an undertaking holding such a position remain on the market.[125]

This means that not all foreclosure is necessarily anticompetitive, since, by definition, competition on the merits may lead to the disappearance from the market or the marginalisation of less efficient competitors.[126] Where there is evidence that a dominant company's practices are not likely to eliminate as efficient competitors, even if they may affect less efficient ones, it should be (much) more difficult for the Commission to establish an infringement of Article 102 TFEU.

The revisions to the 2008 guidelines are still under discussion. It is worth mentioning however that even if the 'AEC' case law can be extended to non-pricing practices to assess foreclosure, there is no reference to or discussion of the role of LTCs in this context. In this respect paragraph 68 of the Court's ruling in *SEN* is of interest in that it clarifies what is meant by practices that might change the structure of competition.[127]

> *'In practice, as is apparent from paragraph 44 of the present judgment that the concept covers any practice capable of adversely affecting, by way of resources other than those which govern normal competition, an effective competition structure. It is therefore intended to penalize the conduct of a dominant undertaking which on a market where the degree of competition is already weakened precisely because of the presence of the undertaking concerned, through recourse to means different from those governing normal competition in goods or services on the basis of the transactions of commercial operators, has the effect of hindering the maintenance of competition still existing in the market or the growth of that competition'*

How then can LTCs change the structure of competition especially in an electricity market where long-term contracts are to become 'the new normal?' In this context the Court also observed in the *SEN* case that dominant undertakings can defend themselves against their competitors but '*they must do so by using means that come within the scope of 'normal competition, that is to say, competition on the merits*' (at para 75).

It may well be that further, and separate guidance on this latter topic is all the more important given that LTCs are now to be normalized across the electricity market – at least for non-dominant companies.[128]

[125] See, in particular, Case C-377/20, para. 73. (Court of Justice of the European Union, 2022)

[126] Case C-413/14 P, *Intel*, paras. 133-134.

[127] See also C-680/20 Unilever, loc. cit at para 36. (Court of Justice of the European Union, 2023). See also the subsequent ruling in 'Superleague'.

[128] See further on the AEC test (Neven, 2023)

In conclusion, LTCs may also have environmental benefits, irrespective of whether the party involved is dominant. As ENEL has commented in its submissions to the consultation on the reform of the Guidance:

> *'The debate concerning environmental considerations in competition enforcement has been largely focused so far on horizontal agreements and cooperation. However, the achievement of sustainability goals requires significant investments in resources and know-how that may often be made only with the involvement of big companies, that could be discouraged to invest in sustainability because of the unclear risk of antitrust infringements. Therefore, it could be deemed appropriate to introduce specific guidelines on the antitrust assessment of sustainable unilateral conducts similar to those recently proposed for horizontal agreements. Indeed, the same considerations made by the EC in relation to environmental benefits associated to the sustainable horizontal agreements under article 101(3) may apply, mutatis mutandis, also to justify certain unilateral conducts that, even if could be considered potentially abusive, could bring significant green efficiencies for consumers and society.'*

It is as yet too early to know if or how the Commission will respond to the consultation exercise.

6.4. The new Guidelines on the definition of the relevant market.

On 8 February 2024, the Commission published the long-awaited Notice on the definition of the relevant market for the purposes of Union competition law (European Commission, 2024a).

The first version of the Notice dated back to 1997 and had not been updated since. This new version reiterates most of the key steps to define a relevant market and reflects the Commission's decisional practice and the case law of the Court of Justice.

Like the guidelines referred to above, the guidelines on defining the relevant market also make the link with the imperatives of sustainability and decarbonization. The Commission notes that:

> *"Competition policy preserves well-functioning markets and addresses market failures, thereby contributing to the twin green and digital transitions and the resilience of the single market. It aims to ensure that markets remain competitive, open and dynamic. Accordingly, competition policy can contribute to preventing excessive dependency and increasing the resilience of the Union economy by enabling strong and diversified supply chains and can complement the Union's regulatory framework on environmental sustainability by taking into account sustainability factors to the extent relevant to the competition assessment, including as part of market definition"* (European Commission, 2024a, p. 3)

While confirming the trend towards extending the key parameters of competition, the Commission is adding the sustainable dimension of products to the list.

> *"when defining the relevant market, the Commission takes into account the various parameters of competition that customers consider relevant in the area and period assessed. Those parameters may include the product's price, but also its degree of innovation and its quality in various aspects – such as its sustainability, resource efficiency, durability, the value and variety of uses offered by the product, the possibility to integrate the product with other products, the image conveyed or the security and privacy protection afforded, as well as its availability, including in terms of lead-time, resilience of supply chains, reliability of supply and transport costs"* (European Commission, 2024a, p. 8)

Finally, it is worth noting that one of the main purposes of the Notice is to increase transparency and ensure greater predictability in the assessments it makes, in order to provide greater legal certainty for companies and their advisers (European Commission, 2024a, p. 4).

Conclusion to Section 6

The various guidance documents discussed above (both recently adopted or in the course of being reviewed) already show awareness of some of the broader substantive objectives and concerns associated with the urgency of the energy transition. They appear to illustrate and confirm a trend towards a new balance in the assessment of the impact of various commercial practices on the electricity market.

Nevertheless, the content of the guidelines as such are either not of direct relevance (as for HA) or remain too general to bring the legal certainty needed for a predictable, updated assessment of long-term contracts in the changing competitive structure of the European electricity sector. The revised guidance on VAs fails to give any practical solace to the use of LTCS outside the rigourously defined 'safe harbours'- that is up to 5 years for exclusivity if both parties are below 30% market shares and if the cumulative effects of the LTCs do not exceed a 50% market coverage.

Clearer and more targeted guidance is needed to ensure that companies wishing to defend long term contracts can do so in the light of a coherent and updated theory of harm.[129]

Section 7: The need for clarity and legal certainty regarding the competition law assessment of 'private' LTCs.

The themes developed in the previous sections underline that the "private" long-term contracts that will be necessary to achieve the decarbonisation objectives.

As we reflected in section 5 and as other commentators have also noted, decarbonisation requires a step change in investment (Roques, 2024). Attracting private investment in clean energy assets requires predictable revenues to facilitate financing. Indeed, most of the existing renewable generation fleet in Europe has been supported by public or private long-term contracts. We have also stressed in section 5 that decarbonisation requires coordinated investment along the value chain. In addition to clean generation, there needs to be significant investment in the electricity grid as well as flexible resources such as storage or demand response (e.g. through electric vehicles and the associated smart charging infrastructure), to prepare the electricity system for new challenges that renewables cause. Coordinated investment requires stable long-term price signals that long-term contracts can facilitate. At the same time, uncertainty about political and regulatory intervention is higher than in the past. Consequently, it must be recognised that in the new context, long-term contracts can facilitate market entry as opposed to hindering it.

That is not to say that there is 'one size fits all'. The requisite LTCs may take different forms, and this must be reflected in the competition assessment. For this purpose, we have grouped LTCs into three categories (**7.1.**).

Developments in the electricity markets, the new decarbonisation obligations (section 5 above) and the recent developments in competition law outlined in section 6 highlight the need to

[129] See also (Roques, 2024)

review the competitive analyses of long-term contracts carried out almost two decades ago, both from the point of view of the risk of abuse of a dominant position and the delimitation of the relevant market. (**7.2.**).

In order to create a favourable context for the development of private long-term contracts, it is necessary to reinforce legal certainty by confirming the competitive analysis that must be made of these contracts. To this end, the Commission could adopt targeted guidelines as discussed in section 8.

7.1. Three main categories of 'private' LTCs

As we have already shown (see section 5 above), the Commission already recognises that part of the solution to the challenges of decarbonisation and limiting the risks associated with price volatility on the electricity markets lies in the development of long-term "private" contracts.

Because of their innovative nature and specific characteristics, the emergence of these new contracts will take different forms. Without claiming to be exhaustive in our coverage of possible contracts, we have divided potential LTCs into three main categories with varying duration:

- Corporate PPA signed as part of a greenfield project (between 15 and 20 years).
- "Risk sharing" contracts between an upstream integrated supplier (10 years) and a manufacturer.
- Pure supply contracts between a supplier and a consumer (minimum 5 years).

i. Corporate PPA signed as part of a greenfield project (between 15 to 20 years)

As indicated in Section 2, as part of the reform of the design of electricity markets, corporate PPAs are seen as one of the solutions enabling investors to trigger investment decisions in new generation capacity by enabling the investor to secure the price of the MWh over the plant's amortisation period. In addition, on the buyer's side, these contracts protect the buyer from the volatility of electricity prices for the part of its supply covered by the PPA.

These contracts generally have the following characteristics:

- PPAs are signed between a producer/seller and a final consumer/buyer[130]; or a consortium of buyers.
- They often relate to a specific new asset. The producer's greenfield investment decision is conditional on the conclusion of the PPA contract.
- They are "pay as produced" contracts, which means that the purchaser buys all the electricity produced by the installation, even when it does not need any electricity. This implies that the consumer may need to resell part of the volumes on the wholesale market;
- PPA can be physical or financial;
- PPA can be onsite or off-site[131];

[130] In the latest evolutions of some Member States legal framework, the conclusion of a PPA requires for the producer to hold the licence to supply. Nevertheless, those contracts remain, by their very nature, very different from supply contracts. See for instance, Article L.333-1 of the French energy code (Code de l'énergie).

[131] Onsite PPA refers to project of renewable energy that are located on the premises of the offtaker.

- They may be concluded following a competitive tendering procedure carried out by the consumer;
- The duration of the contract is linked to the lifetime of the plant or its depreciation period (e.g. up to 15 to 20 years for wind or solar plants)[132].

As noted, RES PPAs are expressly endorsed in the RED II and III as well as in the new EMD Regulation.

The cost structure of clean electricity production typically entails substantial upfront fixed costs, which increases investment exposure to volume and price risks. The technologies corresponding to most investments in the next years have changed; renewables, nuclear, carbon capture and storage, as well as batteries and other storage technologies are all capital intensive. In the past, gas plants had relatively low investment costs that they could hope to recover in periods of scarcity, where they could charge above their marginal cost. For renewables and other low carbon technologies, this merchant investment model raises a number of challenges and increases the costs of financing, given their capital intensity. Long-term contracts could provide the required certainty to ensure investment in the efficient production mix.

ii. A "risk sharing" contract between an upstream integrated supplier (10 years) and a manufacturer

When a supplier is integrated upstream, i.e. when it directly or indirectly operates production assets, it may seek to share and/or limit the operational risks associated with its portfolio of existing production assets by signing so-called "risk sharing" contracts with consumers, which are characterised in particular by their relatively long duration (around 10 years).

These operational risks can be of two kinds:
- Guaranteeing that production will be sold at a price sufficient to cover costs.
- Taking into account the risks of unavailability of production resources.

Although these contracts are not directly linked to the initial investment made by the supplier in the production assets concerned, they facilitate its optimalisation.

For consumers, this type of contract enables them to secure a significant proportion of their supply (baseload needs) at a stable and competitive price fixed for the duration of the contract, which in turn enables them to invest in equipment to further their own decarbonisation processes.

Risk sharing contracts are referred to in the Vertical Guidelines 2022 (European Commission, 2022f)(§316). However, it should be noted that the guidelines only refer to renewable assets.

It has already been observed these types of contracts allow parties to hedge their price and quantity risk, which makes revenues and expenses on both sides of the contract more stable and predictable. On the buyer's side, the long-term contract makes industrial customers more likely to invest in electrifying their processes to decarbonise if they can benefit from more stable and predictable energy costs.

On the seller's side, stability lowers the cost of capital for ongoing maintenance and operations, and thus frees up resources for further investment. These types of contracts can help parties coordinate directly by internalising externalities – to decarbonise on the same long-term

[132] Short term PPAs i.e, < 5 years are probably only acceptable if no debt financing is needed but longer periods of between 6-9 years if debt financing required.

horizon. They also help coordination indirectly, as long-term price signals in the energy sector increase confidence for investors in related complementary sectors (Roques, 2024).

iii. Pure supply contract between a supplier and a consumer (5 years or more)

More traditional supply contracts – that is involving physical delivery of pre-agreed volumes can last up to 5 years. These contracts enable consumers to secure a stable supply price over a relatively long period, although this is not necessarily enough on its own to justify higher investment by suppliers or by customers with a view to decarbonisation. Much depends on the sector involved.

The maximum of 5-year duration of these supply contracts is already anchored in the Commission's decision-making practice and in the recent VGER[133] (see further section 6, above). But these safe harbours do not cover long-term contracts with durations above five years. This may be too short a horizon for all the benefits to materialise, or contracts with incumbents, which can have an important role to play in the transition.

7.2. The necessity to review past assessments.

At the time of the past assessments made by the Commission in the decisions referred to in section 4, the products available were much more homogeneous and consisted mainly of traditional supply contracts (i.e., not linked to any assets or investments). The specific features of each of the three categories described above are therefore not reflected in these past decisions dating back almost 15 - 20 years.

However, as regards both the risk of abuse of a dominant position (7.2.1.) and the definition of the relevant market (7.2.2.), the issues raised by long-term contracts in the energy sector in the new context described in sections 5 and 6should lead to very different assessments and a different balancing of risks and benefits from those made almost 2 decades ago.

7.2.1. The need to review the assessment of long-term contracts with regard to the risk of abuse of a dominant position.

As shown in section 4, the main concern regarding the risk of abuse of dominant position associated with long-term downstream contracts concerned the foreclosure effect.

As is well known, the assessment of an exclusionary abuse must be carried out in two stages, as the Court pointed out in the *SEN* judgment cited above[134]: firstly, the risk of competitors being excluded must be identified and then it must be verified that this risk is not offset by advantages in terms of efficiency which could benefit consumers.

The Court notes in this respect that:

> *"Therefore, as the Court has previously held, an undertaking in such a position may show that an exclusionary practice escapes the prohibition laid down in Article 102 TFEU by, inter alia, demonstrating that the effects that could result from the practice at issue are counterbalanced or even outweighed by advantages in terms of efficiency which also benefit the consumer in terms of, specifically, price, choice, quality or innovation"* (§46).

[133] Articles 2 and 5.

[134] Case C-377/20, ECLI:EU:C:2022:379. (Court of Justice of the European Union, 2022)

However, assessed in the new context presented in sections 5 and 6, this risk of exclusion of downstream long-term contracts must be revised downwards (i). Moreover, the positive effects of long-term contracts in this new context are much stronger. (ii). Further, as regards the effects of these contracts on market liquidity, the risks identified at the time by the Commission are no longer so clear (iii). This has important implications for assessing potential foreclosure effects.

i. The risk of foreclosure should be reduced

The assessment of the risk of market foreclosure must take account of three major differences compared with the context in which the previous analyses outlined in section 4 above were carried out.

Firstly, and counter-intuitively, the maturity of the electricity markets will diminish over the next few years. Whereas the markets were very mature when the electricity markets were opened up to competition - not only because of a stable level of total consumption but also because of an overcapacity of generation capacity - the requirements of decarbonisation mean that large proportions of end uses will have to be electrified, which means new opportunities for electricity suppliers (incumbent and new entrants).

Secondly, as the average duration of the supply contracts has been mostly well below 5 years in application of the Commission's policy over the last 10 to 15 years, all consumers have had the opportunity to choose or switch to another supplier on several occasions. As a result, the incumbent suppliers' market shares are now contestable – and are mostly the result of competition on the merits. When incumbents remain dominant, this could be the result of normal competitive process as the Court of Justice recently recalled: "*That said, it is not the purpose of Article 102 TFEU to prevent an undertaking from acquiring, on its own merits, on account of its skills and abilities in particular, a dominant position on a market, or to ensure that competitors less efficient than an undertaking in such a position should remain on the market"*[135]*.*

Thirdly, and following on from the previous point, since the markets have been open to competition for almost two decades, and relevant geographical markets should no longer be seen as national, the market shares of the incumbent suppliers have fallen significantly.

Moreover, and in a complementary manner, the ongoing progress made in terms of TSO unbundling rules, third-party access to networks and the opening up of markets for ancillary services are helping to reduce further the risk of foreclosure.

ii. Positive effects of LTCs and efficiencies matters shall be increased.

The positive effects of long-term contracts in the new context described in sections 5 and 6can be presented as follows.

Firstly, these contracts are necessary to support the investments required in connection with decarbonisation.

This may concern:

[135] ECJ, 19 January 2023, *Unilever*, Case C-680/20, §37. (Court of Justice of the European Union, 2023)

- Investments which are conditional on the conclusion of a long-term contract, and which are borne either by the producer (investment in a new means of production) or by the consumer (investment with a view to decarbonising an industrial process, for example).
- Investments not directly linked to the conclusion of a long-term contract, but for which these long-term contracts create a favourable environment.

Secondly, long-term contracts protect consumers against price volatility on the markets. The energy price
supply and their propensity to diversify their sources will lead to even more opportunities crisis on the wholesale markets in 2022 has shown that the risk of this volatility is much greater today than it was in the 2010s.

Thirdly, economic studies have shown that long-term contracts have a positive effect on the operation of short-term markets.[136]

Fourthly, at international level, competition between the world's major regions to attract investment in decarbonisation has become very fierce, particularly following the adoption of the Inflation Reduction Act in the United States. In this competition, energy supply conditions are crucial. Long-term contracts make it possible to meet the expectations of major manufacturers and to keep these sites in Europe, thereby avoiding the risk of an erosion of demand for producers. This argument, which had already been put forward by certain national competition authorities[137] to justify long-term contracts, is much more forceful today.

In other words, in the new context of competition between jurisdictions to attract investment, the risk of destruction of demand following the delocalization of industrial production sites gives electricity suppliers a real economic interest in concluding long-term contracts, ruling out the possibility of such a contract constituting a means other than those which come within the scope of competition on the merits[138].

It should also be recalled that as explained in section 5 above, in jurisdictions such as the USA, long term PPAs are not perceived as problematic.

Fifthly, the change in consumers' approach to energy for suppliers to offer products to consumers. As the Commission recently pointed out, this may allow alternative suppliers *"to gain a foothold in the market, with the prospect of scaling up volumes and potentially increasing their efficiency at a later stage"* (European Commission, 2023c, p. 5).

iii. ***Regarding the risk of drying up short term markets***

The Commission's assumption that LTCs could reduce liquidity in the short-term markets would need to be further substantiated. Indeed, it will very much depend on the nature of the

[136]See in particular (Allaz & Vila, 1993).

[137] French Conseil de la concurrence Opinion no. 05-A-23 of 5 December 2005 relating to a system envisaged to enable electro-intensive industries to benefit from specific electricity purchase price conditions. (Conseil de la concurrence, 2005) At §98, the Conseil de la Concurrence notes that: « *D'autre part, face au risque de délocalisation hors de l'Union européenne des clients présentant une forte élasticité au prix de l'électricité, la mise en place de contrats adaptés à leur demande permettrait de sécuriser des débouchés* ».

[138] In the *SEN* case, the Court stated that: "Any practice the implementation of which holds no economic interest for a dominant undertaking, except that of eliminating competitors so as to enable it subsequently to raise its prices by taking advantage of its monopolistic position, must be regarded as a means other than those which come within the scope of competition on the merits" (§77). (Court of Justice of the European Union, 2022)

long-term contract. If a share of those contracts will be financial long-term contracts (such as financial PPA), the operator will be incentivized to sell the electricity on the market that serves as a reference price. LTCs can facilitate the development of forward markets.[139]

[139] See ACER Policy Paper on Forward Markets**Aucune source spécifiée.**

Table C - Summary- assessing the pros and cons of the different categories of LTC

	PPA – asset based contract (15 to 20 year)	**Risk sharing contract (10 year)**	**Purely supply contract (5 year)**
Favouring Investment into Decarbonized generation asset	**Decisive :** without the conclusion of the contract, there would be no decision to invest on the producer side.	**Strong :** securing the sale of its output helps the supplier to trigger investments in new or upgraded electricity decarbonized plant.	**Limited :** the duration of those contracts is not sufficient to trigger [asset specific] investment decision into new generation plants.
Favouring Investment into Decarbonized industrial process	**Limited :** Insofar as PPA relates mostly to new intermittent renewable generation resources, they do not provide operators with sufficient predictability regarding their energy costs. Baseload still needed. ESG requirements important here.	**Strong :** securing a price for electricity for a long period of time will favour investments by industrial consumers.	**Limited :** the duration of those contracts is not sufficient to trigger investment decision into heavy or high capital intensive decarbonized industrial process.
Protecting consumers against price volatility of electricity	**Strong:** consumers are protected against price volatility with regard to the proportion of their consumption that can be supplied under the PPA contract.	**Strong**: consumers are protected against price volatility with regard to the proportion of their consumption that can be supplied under the risk sharing contract.	**Strong :** consumers are protected against price volatility for the totality of the consumption and for the duration of the contract.
Protecting producers and suppliers from the destruction of demand caused by the relocation of large electricity consumers outside the EU	**Limited :** Insofar as PPA relate to new intermittent renewable generation resources, they do not provide operators with sufficient predictability regarding their energy costs and therefore are not sufficient to guarantee the competitiveness of the energy supply. Baseload still needed.	**Strong :** securing a price for electricity for a long period of time will enable high electricity intensive users to remain competitive at the international level.	**Limited :** the duration of those contracts is not in itself sufficient to guarantee the competitiveness of the operator in the long run.
Risk of drying up liquidity on short term markets	**Limited :** PPA mostly relates to new plant and therefore will not affect existing liquidity on the short term market. Besides, such contract, when financial, may increase liquidity on wholesale markets.	**Medium :** the volumes supplied through those contracts will not go through wholesale markets. However, part of these volumes may be resold on the wholesale market by the consumer.	**Limited:** There is no clear link between this type of contract and the liquidity of wholesale markets.
Risk of foreclosure	**Limited :** PPA is asset specific and will rarely/never be exclusive.	**Limited :** if the risk sharing contract only covers part of the consumption (e.g. baseload needs), the consumer will still remain “contestable” for the remaining volumes.	**Medium :** it will very much depend on the possibility for alternative suppliers to compete with the incumbent for consumers, and therefore it will depend on the liquidity of wholesale markets for hedging products of a duration of up to 5 years.

7.2.2. The need to review the assessment of long-term contracts with regard to market definition.

The delimitation of the relevant market is a decisive stage in the competitive analysis carried out on the basis of Article 102.

However, current developments in the electricity markets – and especially the uptake of PPA contracts - make past distinctions less clear and should lead the Commission to clarify the criteria used.

Traditionally - and in accordance with the case law of the Court of Justice - a distinction must be made between the product market and the geographical market.

7.2.2.1. Relevant market - The product market

If we put aside transmission and distribution, markets are traditionally split between:

- on the upstream side, **generation and wholesale market** (production of electricity in power station) and,
- on the downstream side, **retail supply market** (the sale of electricity to the final consumers).

Many sub-segments have been identified depending on the case at hand and on different factors such as: the degree of market opening, the characteristics of the national market in question... Several look particularly relevant regarding the new context and the new products.

7.2.2.1.1. Upstream: Generation and wholesale market

In the majority of its decisions, the Commission adopts a broad and inclusive approach to this market, which includes the various production technologies, bilateral contracts (OTC) and exchanges on organised markets.

In the SYDKRAFT/GRANINGE case (COMP/M.3268) (Commission of the European Communities, 2003), the Commission explained that:

> *"The Commission's market investigation confirmed that generation and wholesale of electricity constitutes a separate product market. The market encompasses electricity sold on bilateral contract as well as electricity sold on Elspot and Elbas. The main reason being that producers would easily be able to substitute between these different markets in reaction to permanent price differences" (§19).*

In the EDF / BRITISH ENERGY case (COMP/M.5224) (Commission of the European Communities, 2008), the Commission is more precise. It points out that :

> *"16. That being said the Commission has investigated whether the various sub-segments of the wholesale market (non-standard non-brokered, OTC brokered, Power Exchange and Balancing Mechanism) could comprise separate markets. In addition within the OTC brokered segment the Commission has investigated, whether the various products traded (such as baseload and peakload) are in fact separate markets, given that they consist to a large extent of different sources on the market,12 with different cost structures and are therefore priced differently.*
> *17. The results of the market investigation do not support the definition of narrower product markets but rather favours the definition of one wholesale electricity market comprised of different segments"*.

However, this approach is sometimes a little more nuanced. Two examples illustrate this.

The first is the question of subcategories: baseload/peak load or peak hours and off-peak hours

For the French competition authority, the distinction of peak load products and baseload products may lead to the delineation of different relevant markets. In its decision Direct Energie (07-MC-04), the Conseil de la Concurrence stated that:

> *"Blocks offered on the wholesale market are defined according to their duration and delivery period. In this respect, peak blocks are intended, as a matter of principle, to cover the needs of consumers' where baseload products are insufficient. These products are therefore imperfectly substitutable for baseload products and their price is higher. It is therefore conceivable to separate the wholesale market for baseload products from that of peakload products" (§65).*

Similarly, as mentioned by the Commission in the RWE/ESSENT case (COMP/M.5467), the Dutch Competition Authority (the "NMa") has made a similar distinction between "peak hours" and "off-peak hours": *"the NMa grouped the hours in which demand is high (07.00 to 23.00 on working days) defining them as a peak market. Other hours are defined as an off-peak market"*[140].

Moreover, it is interesting to highlight the fact that in its new Guidelines on the relevant market (see above, §6.3.4.), the Commission refers to this case and specifies that the temporal dimension can be an important element in the definition of the relevant market:

> *"In certain cases, temporal considerations may also be relevant when defining the relevant market, for example where factors such as seasonality or peak/off-peak time considerations substantially affect customer preferences or the structure of supply"* (European Commission, 2024a, p. 8).

The second is the question of subcategories between: physical and financial electricity trading:

In the VATTENFALL/ELSAM AND E2 ASSETS case (COMP/M.3867) (Commission of the European Communities, 2005), the Commission highlighted the difference between physical products and financial products. It explains that:

> *"§14: Financial electricity trading consists in the trading of financial products suitable for providing insurance against the risk of unforeseen future price developments in physical electricity wholesale markets ("financial hedging). In previous Commission decisions, the market definition for financial electricity trading has generally been left open.*
> *§15. There are, however, a number of functional differences between financial electricity trading and physical electricity trading which make it doubtful whether they can be regarded as belonging to the same product market. One difference is that all financial electricity trading terminates in a mere financial settling of contracts without any physical delivery of electricity whereas physical electricity trading obliges the supplier to physical delivery of electricity. Even if prices (and price expectations) in both areas mutually influence each other it is thus clear that physical electricity trading cannot be substituted by financial electricity trading".*

7.2.2.1.2. Downstream: Retail markets

[140] COMP/M.5467, 23/06/2009 (Commission of the European Communities, 2019), footnote 18.

On the downstream side, i.e. the sale of electricity to final consumers, the delimitation process is simpler. The main question is whether different markets should be distinguished for different categories of consumer.

During the liberalisation phase *stricto sensu*, i.e. the phase during which consumers became eligible in stages, a distinction was made between eligible and non-eligible consumers. This distinction is no longer relevant.

The majority of decisions define different markets according to the level of consumer consumption, as the Commission did in the above-mentioned EDF case (COMP/39.386 - Long-term contracts France) (European Commission, 2010).

> *"(17) In accordance with its previous decision-making practice concerning the electricity sector, the Commission has identified three distinct markets for the retail supply of electricity to final customers: (i) the supply of electricity to large industrial and commercial customers; (ii) the supply of electricity to small industrial and commercial customers; and (iii) the supply of electricity to residential customers";*

It should simply be noted here that this distinction is not systematically made. The Commission may, in certain decisions, consider that the market for supply to final consumers does not need to be further segmented.

7.2.2.1.3. This classification wholesale/retail does not fit in the new 'context.'

The difficulty to apply the usual distinction between wholesale and retail as applied to a (corporate) PPA is obvious.

i. Wholesale, retail or hybrid market?

As described above, a corporate PPA is signed between a producer and an end-consumer. As the contract aims at supplying the end-consumer for part of its needs, it cannot be considered as a wholesale product.

However, a corporate PPA is not a conventional supply contract either. Firstly, it is a contract signed by a producer. It is also a contract that is generally "pay as produced", which means that consumers buy volumes even when they are not consuming. These volumes will have to be resold on the markets.

As a result, corporate PPAs do not easily fit into either the wholesale market or the retail market. They belong to a specific market that could be described as hybrid.

ii. Physical PPA v. Financial PPA

As we have shown above, physical instruments and financial instruments have significant differences that would justify not including them in a single relevant product market. The geographical market may also be much wider than purely national – see below. Therefore, this could lead to define different relevant markets for physical PPA and financial PPA.

iii. Organising a competitive tendering procedure

Before entering into a PPA, the consumer will generally organize a competitive tendering procedure to select the operator who will invest, develop and operate the power plant for the duration of the contract.

Such a selection method could have two consequences in terms of defining the relevant market.

Firstly, the decision to organise a competitive tendering procedure could lead competition authorities to consider that each competitive tendering procedure corresponds to a relevant market. This is the practice of the French competition authority.

In a classic solution, the Autorité de la concurrence qualifies the tender procedure itself as the relevant market:

> *"a market is constituted by the meeting of supply and demand; that the single applicant, represented by the contracting authority, whose precise request was expressed in the contractual documents, was met by bids from companies, that consequently each invitation to tender constitutes a market in itself"*. (Conseil de la Concurrence, 2000)

This long-standing solution remains constant (Autorité de la concurrence, 2023) and, according to the Conseil de la concurrence, is shared by the Commission (Conseil de la concurrence, 2009).

This classification of the relevant market is not justified by the public nature of the contracts concluded following a call for tenders, but by the characteristics of the procedure.

This is why a call for tenders for the award of a private contract also constitutes a relevant market:

> *"each contract awarded by a call for tenders, whether public or private, constitutes a relevant market, resulting from the concrete confrontation of a demand from the client and the proposals made by the candidates who bid in the call for tenders"*. (Autorité de la concurrence, 2011, p. 268)

Secondly, the decision to organize a competitive tendering procedure may have an impact on the geographical delimitation of the relevant market. As long as the production activity does not require specific license in the country in which the plant is operated, national, European and even global operators can take part in the procedure to develop and operate a new production facility within a given geographical area.

In the case of the "risk sharing" category contract, the choice of whether to classify this contract as part of a wholesale or retail market will pose similar difficulties. These contracts will often be ‘hybrid’, as explained above.

7.2.2.2. Relevant market - The geographic market

In cases concerning the electricity sector, the geographic market has so far mainly been identified as covering the territory of the Member State in which the operators concerned by the case are based. However, two elements need to be highlighted.

The **first** is that, to our knowledge, there is no established practice for establishing the relevant geographical market for new electricity supply contracts such as PPAs even although these can be cross-border.

The **second** element is that the growing development of interconnection capacities between Member States reduces congestion justifying the consideration of a delimitation comprising several price zones. More precisely, the continuing increase in the level of interconnection in Europe is reinforcing the phenomenon of price convergence. In its past decisions, the Commission has confirmed that the criterion of the duration of price convergence is relevant

for delimiting a geographic market.[141] Thus, it seems that when the level of price convergence exceeds 40%, the geographic market could be defined as encompassing zones in which prices converge. Recently, this reasoning led the Commission to extend the geographic market to the CORE region in a case concerning Czech nuclear power. [142]

Conclusion to section 7

In conclusion, this new context underlines that the competition assessment of the long-term contracts that need to be developed to meet decarbonisation requirements cannot be made on the same basis as deployed two decades ago of the old conclusions reached by the Commission almost two decades ago. This is because, on the one hand, the risk of market foreclosure seems very limited compared to the old configuration and, on the other hand, because the potential positive benefits of long-term contracts, whatever their form, are much greater. At the same time the scope of the relevant product and geographical markets needs to be rethought, especially a some LTCs such as corporate PPAs do not easily fit into either the wholesale market or the retail market. They belong to a specific market that could be described as hybrid.

It is therefore essential for the Commission to be able to clarify its assessments in the light of the new context of Europe's electricity markets, otherwise the investments necessary for decarbonisation may not be undertaken, as the Commission itself recently recognized.

In its Competition Policy in Support of Europe's Green Ambition (European Commission, 2021c, p. 2) the Commission acknowledged that with regard to antitrust, "*the responses to the call for contributions indicated a demand for more clarity on how the pursuit of sustainability objectives affects antitrust assessment. Many respondents were concerned that, in the absence of clarity, the risk of breaching the competition rules would prevent them from investing in sustainable products or processes".*

[141] COMP/M.3268 30 October 2003. Sydkraft/Graninge (Commission of the European Communities, 2003), §§ 21-27; See also Decision 2006/211/CE (Commission of the European Communities, 2006)

[142] State aid SA.58207 (2021/N) – Dukovany case (European Commission, 2022e) §§174-175: "At the same time, it has been established that the Czech market is well interconnected in the Core region (see recitals (7) and (9)). For this reason, the relevant markets for the assessment of the measures at stake are the electricity market in Czechia and the electricity market in the Core region ».

Section 8: Recommendations and next steps

8.1. Recalling our goals

The goal of this report has been to prompt a legal re-assessment of the role of LTCs in the current energy market and in achieving the net zero emission (NZE) goals embraced by European climate legislation. The accompanying paper by Professor Glachant has demonstrated that economic analysis of the role of LTCs in energy markets has evolved considerably since the early days of market liberalization and it must continue to do so.

To achieve 'deep decarbonization' by 2050, the EU's electricity market and its associated infrastructure and governance framework must therefore provide clarity and certainty for producers, suppliers and investors, while also ensuring fair outcomes for end users. To reach net zero as required by the EU Climate Law of 2021 the scale of investment in Europe (and across the globe) will need to be drastically ramped up and at speed.

The urgency and complexity of this task is not in dispute. There may be many instruments and strategies that can be put into action. It is now widely acknowledged that LTCs can have an important role to play in securing the required levels of investment as well as reducing price volatility on the electricity market. The current European (wholesale) market design, although efficient in the short term, has failed to provide the right *investment* signals for renewable technologies and retrofitting of existing assets. It fails to give the necessary stability and resilience of supply to various classes of consumer who themselves require long lead times to switch to full electrification.

As Professor Glachant's paper has shown there is however an ongoing debate as to whether (and how) certain types of LTCs such as CfDs should be promoted in preference to others, such as PPAs. This paper has not taken a position in this latter discussion, which is not within our expertise. We refer in this respect to the accompanying report by Professor Glachant for a thorough examination of the pros and cons of these different types of contracts.[143]

Nevertheless, as we have stressed in this legal paper, given the scale of investments required to roll out renewable electrification in the power generation and in the industrial sectors, it is widely acknowledged that the bulk of that investment must come from private actors.

8.2. Missing in action

This paper has argued that a practical and up to date guidance on the legality of LTCs in European competition law is urgently required: predictability is 'missing in action'. Without predictability investors cannot be properly motivated or encouraged to assume the level of risk required to commit funds to investing in new technologies, to retrofitting existing assets or to make the necessary longer-term commitments through- out the value-chain.

The main contributor to the lack of predictability is in part due to the uneven and now partial guidance available to different types of LTCs and for their current use in different market segments. Public LTCs – usually CfDs - can benefit from ex ante clearance based on a series of guidelines that are already known in advance.

As we noted the 2023 Commission proposal to reform the electricity market was not backed up by an impact assessment. That is a regrettable omission as that might have served as the

[143] See also (Kitzing, et al., 2024)

proper point in time to assess the issue of predictability and the lack of comprehensive guidance on LTCs.

In this context we can also recall some of the findings that have emerged from recent evaluations of older guidelines on the application of the competition rules to vertical and horizontal agreements, prompting revisions in 2022 and 2023, and reassessing certain benefits and risks of different types of contracts.

A lack clarity in the rules defining certain classes of agreements or practices means that.

- there are difficulties in applying rules that are no longer adapted to the current business environment.
- there are also gaps in the rules especially as commitment decisions have expired.
- this means that there is scope for diverging interpretations of the rules by national competition authorities and national courts.

8.3. Competition between categories of LTCs

The different types of long-term contracts that are now promoted in the context of market reform are not independent from each other. A generator can only hedge its production once and must decide between, for example, conventional futures contracts, PPAs or CfDs. Thus, when determining the price of a PPA, an investor will consider the alternative opportunity of going for a CfD, or a futures product or even spot market sales.

In other words, and as we have advocated here, there should be sufficient competition **between the types of instruments at the disposal of market actors**. This type of competition can only be beneficial to the market. If governments set the maximum administered or 'strike' prices for CfDs at a too low level, low-carbon or RES asset buildout would not necessarily be stopped, as long as investors can contract directly with the demand side through LTCs such as PPAs, and such investments can help drive down costs.

The Commission itself has acknowledged that both instruments – both CfDs and PPAs - are necessary to achieve the Union's decarbonisation targets through renewable and low carbon energy deployment, while bringing forward the benefits of low-cost electricity generation for consumers. Yet at this stage we have no indication of how the Commission considers that wholesale market liquidity can best be maintained and developed depending on which type of instrument will be applied in practice.

We have argued that to ensure a fair 'competition of instruments' can emerge and flourish in the new electricity market a number of important conditions have to be in place. A focus on market dynamics and dynamic competition is key. This paper has addressed some of these conditions from a legal perspective. It has put forward some ideas on how to realise them urgently. We now elaborate on these ideas further in the final paragraphs of this report. We first recall these new conditions and then turn to practical steps forward.

8.4. Conditions for assessment

First we must acknowledge that there is much more legal certainty and transparency available for 'public' LTCs which are state backed or state funded and which will usually be assessed under the state aid rules. This will be the case for the majority of CfDs and CCfDs if the 'strike price' is set by public authorities and the shortfall or difference between that price and market prices will be funded by taxes or levies on users.

State aid clearance can be obtained ex ante and for contracts below a certain value that clearance may in fact be 'blocked exempted' so that notification is not required.

Second the guidance on the compatibility of such state backed or public contracts has been updated in 2022 and again to some extent in 2023. It is further refined in individual and often very detailed decisions on national schemes, which are publicly available.

Third in the assessment of these public contracts the focus is primarily on their appropriateness to realize climate and energy related objectives; there is little concern for the overall market structure or the market position of the aid beneficiaries.

Although these factors may not be conclusive for investors to opt for state backed contracts, they may well have a role to play and as such deserve to be kept in mind.

Fourth we have pointed out that for PPAs for renewable energy sources, there is broad legislative support as well as some guidance available both in secondary legislation - the RED II and the recent RED III Directives, as well as the planned EMD regulation, likely to be formally adopted in the second half of 2024. There is also a Commission Recommendation on removing barriers to PPAs at national level. Member States are obliged to report on their progress in doing so. Even although there is no guidance on the application of the Treaty competition rules there is a presumption that these types of 'commercial' or private PPAs – irrespective of duration – should be encouraged.

Fifth, the 'ESG' legislation that comes into force in 2024 will provide further incentives to certain classes of offtakers to enter into RES PPAs. The recently amended rules in RED III are designed to facilitate this process further.

This body of secondary legislation and the related Commission Recommendation of 2022 does not however offer guidance on other types of low carbon fuel or on the role of baseload supplies (hydropower, nuclear) to supplement the demand for intermittent renewables. We have seen in section 3 that in countries where PPAs have been prevalent for some time, the complementary role of baseload in promoting the transition to RES is acknowledged by the competition authorities, such as ESA.

Finally, we have pointed out that not only is there very little guidance on the application of the Treaty competition rules to LTCs – that guidance is now outdated. Importantly it does not reflect recent case law on Article 102 TFEU. That case law recognizes that Article 102 must be interpreted in the context of a broad set of objectives. Article 102 TFEU is "*part of a set of rules, the function of which is to prevent competition from being distorted to the detriment of the public interest, individual undertakings and consumers, which ensure well-being in the European Union*".

The Court has also explicitly stated that it is "the effective competition structure" that Article 102 TFEU protects.[144] In this context the Court draws on the 'as efficient a competitor test '- the 'AEC' test - to address the risk of market foreclosure. It is not the purpose of Article 102TFEU to prohibit competition on the merits.

[144] Paras 44, 47 - Servizio Elettrico Nazionale (SEN) (Court of Justice of the European Union, 2022). See also Unilever, 19 January 2023. (Court of Justice of the European Union, 2023)[ ] *That said, **it is not the purpose of Article 102 TFEU to prevent an undertaking from acquiring, on its own merits, on account of its skills and abilities in particular, a dominant position on a market, or to ensure that competitors less efficient than an undertaking in such a position should remain on the market**. Indeed, not every exclusionary effect is necessarily detrimental to competition, since competition on the merits may, by definition, lead to the departure from the market or the marginalization of competitors that are less efficient and so less attractive to consumers from the point of view of, among other things, price, choice, quality or innovation*."

Whereas guidance for state backed contracts such as CfDs is regularly updated, the Commission has not given any recent attention to individual LTCs or even to PPAs as a general category of LTCs, despite important changes in the market as well as in the light of the evolution of its own thinking on the application of the competition rules or indeed in the light of these important developments in the jurisprudence of the CJEU. In the meantime, the commitments provided in earlier cases have expired.

8.5. The way forward - targeted guidance

Prospective guidance in the light of the final adoption and subsequent entry into force of the new EMD regulation could focus on at least three broad categories of LTC– each of which raises separate issues, as we have discussed in section 7.

Obviously, there is no 'one size fits all' for the analysis of LTCs. Individual contracts must be assessed on their specificities and the benefits as well as to the risks must be investigated in depth. But the Commission could confirm general principles and acknowledge the overall benefits as well as the types of risks attached to various categories of LTCs. It could raise possible red flags and indicate how the parties can deal with them. The division of sets of issues into white, black, and grey lists is not uncommon in Commission practice.

In section 7 we distinguished between 3 broad categories of LTC:

- Corporate PPA signed as part of a greenfield project (between 15 and 20 years);
- "Risk sharing" contracts between an upstream integrated supplier (10 years) and a manufacturer.
- Pure supply contracts between a supplier and a consumer (5 years or more).

In the Table C in section 7 above we identified a non-exclusive list of the benefits as well as potential risks of each category.

We would recommend that for each class the Commission could adopt as 'confirm' or 'clarify' approach.

Given, as demonstrated in this report and the accompanying report by Professor Glachant, the growing importance of long-term contracts in achieving deep decarbonisation, it is key that the Commission brings much needed clarity and legal certainty on the assessment of these different types of LTCS with regard to competition law.

One way to do so would be to adopt targeted guidelines that could take into account the specificities of - at a minimum - the three different categories of contracts and their respective risks and benefits as discussed above in section 7.

Guidance could confirm the non-problematic (white) issues and could clarify new issues in the evolving market context as essentially non-problematic (grey) while identifying at a general level, possible red flags (blacklist) for each of the three broad types of LTCs discussed above. The next sub-sections outline some indicative topics for clarification and confirmation for each of the three categories of LTCs.

8.5.1. Guidance on LTCs for major new 'asset specific' investment

Scope: Type of asset – not only 'RES' as defined in RED II/RED III – but aligned with Taxonomy rules including the relevant DA.

Clarify:

- Relevant market - Product market - wholesale market/hybrid market? Geographical - impact of market integration on assessment

Confirm:

- Duration issues – seems to be possible to link to length of depreciation of the asset.

Guidance could also provide clarity on:

- Exclusivity and other issues? As asset specific – not likely to be an issue in the first place?

- Restrictions on further sale? For example, territorial restrictions? These are no longer of much relevance given that surplus can be sold into wholesale markets.

- Risk of foreclosure - if any? What factors could be identified?

  Develop 'soft safe harbour conditions' as in Horizontal Guidelines.

8.5.2. Guidance on risk sharing contracts:

Scope: Type of asset – not asset specific – is linked to existing 'offsite assets'

Confirm:

- Benefits for offtakers – mainly large industrials - price stability, ESG compliance

Clarify :

- Duration - the correct benchmark - link to needs of offtakers developing related investments for a secure value chain?

- The relevant product market – the impact of hybrid markets;

- The relevant geographical – now wider than national. Explain where market entry is possible.

- Identify cross-border element – and combination of physical and virtual.

- Impact of transaction on other market segments, e.g. the market for balancing services?
- Impact on market liquidity
- Acceptable level of coverage of similar agreements in identified market segments.
- Cross-border elements - combination of physical and virtual
- No foreclosure in related product markets.

8.5.3. Guidance on pure supply contracts (5 year)

Scope: – traditional 'supply' contracts for renewable supply of up to 5 years or more;

Confirm:

- Limited to supply of 'green' energies and/or other non-fossil fuels Can cover baseload.

- Fuel specific elements – e.g. renewables – if contracts awarded by tender – no competition issues, and clarify if relevant market is the tender itself.

- Other non-fossil fuels: contracts could be awarded by tender – and also as part of a portfolio of products -> no competition issues.

Clarify:

- relevant product and geographical markets – wider than national if contracts bought and sold on the open market/through auctions.

- Cross-border element - combination of physical and virtual – impact on product and geographical market assessment.
- Impact on wholesale market liquidity.
- Barriers to market access, if any.

- Market foreclosure would therefore be unlikely in current and evolving market.

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Appendix

Table A: References to CfDs, PPAs and CMs in the Electricity market design reform (updated to January 2024)

Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Regulations (EU) 2019/943 and (EU) 2019/942 as well as Directives (EU) 2018/2001 and (EU) 2019/944 to improve the Union's electricity market design			
Type of long-term contract	**Contracts for difference (CfDs)**	**Power purchase agreements (PPAs)**	**Capacity mechanisms (CMs)**
Type of regulation introduced in the Electricity Market Design reform	If Member States decide to **support publicly financed investments by direct price support schemes** in new low carbon, non-fossil fuel electricity generation, **those schemes should be structured by way of two-way contracts for difference** (2-way CfDs) or equivalent schemes with the same effects.	Member States should strive to **create the right market conditions for PPAs**. To do so, they should assess and remove the current barriers, including discriminatory procedures and charges, and promote the uptake of PPAs.	Capacity mechanisms (CMs) should **no longer be considered as measures of last resort**, their necessity and design should be periodically evaluated considering the evolving market circumstances and regulatory framework.
Type of resource	Low carbon, non-fossil fuel electricity (wind energy; solar energy; geothermal energy; hydropower without reservoir; nuclear energy).	Renewable	CMs should be open to the participation of all resources capable of offering the required technical performance, including gas-fired power plants, if they respect the emission limit of Article 22(4) of Regulation (EU) 2019/943 and any national emissions threshold or objective environmental criteria which Member States apply.
Definition	'Two-way contract for difference' means a contract signed between a power generating facility operator and a counterpart, usually a public entity, that provides both minimum remuneration protection and a limit to excess remuneration.	'Power purchase agreement' are bilateral purchase agreements between producers and buyers of electricity, concluded on a voluntary basis and based on market price conditions without regulatory intervention in price setting	'Capacity mechanism' means a measure to ensure the achievement of the necessary level of resource adequacy by remunerating resources for their availability, excluding measures relating to ancillary services or congestion management.

Duration	2-way CfDs or equivalent schemes with the same effects could **vary in duration**. The rules for 2-way CfDs will only apply after a transition period of **three years** after the entry into force of the regulation and to contracts under direct price support schemes for investments in new power generating facilities concluded as of **three years** after the date of entry into force of the regulation.	Not specified	CMs shall be approved by the Commission for no longer than 10 years.
Conditions	2-way CfDs must be used for: 1. New power generating facilities; 2. New investments for substantially **repowering** existing power generation facilities, or for substantially **increasing** their **capacity** or prolonging their lifetime. The participation of market participants in 2-way CfDs or equivalent schemes with the same effects should be **voluntary**. **Revenues** should be **passed on to final customers**, including household consumers, small and medium enterprises and energy intensive undertakings, favoring vulnerable customers or those in energy poverty. Revenues could also be used **to finance the costs of the direct price support schemes** and to **finance investments to reduce electricity costs** for final customers and, including as regards specific economic activities such as investments in distribution grid development, renewable energy sources and electric vehicle charging infrastructure.	Member States should ensure, in a coordinated manner, that instruments to reduce the financial risks associated to off-taker payment default are in place and accessible to customers that face entry barriers. This may include: - **State-backed guarantee schemes** at market prices - Private guarantees - Facilities **pooling demand** for PPAs Member States can **support the development of PPAs through public support schemes. They shall** - allow developers participating in a public support tender to **reserve a share of the generation** for sale through a PPA - endeavor to make use of criteria giving a **preference to bidders presenting a signed PPA** (or commitment to sign) for part of the project's generation from potential buyer(s) that face difficulties to access the PPA market (such as SMEs) Member States should pay particular attention to **cross-border PPAs** and remove unjustified barriers specifically related to them. The Commission shall assess - the need to develop and issue **standard contracts for PPAs** for voluntary use.	Member States that already apply a CM should consider **fostering the participation of non-fossil flexibility** (e.g., demand response and energy storage) by redesigning criteria or features; they should also be able to deploy non-fossil flexibility support schemes if necessary to achieve the national target for non-fossil flexibility. Member States could **set technical performance standards and CO2 emissions' limits** that restrict participation in CMs to flexible, fossil-free technologies in full alignment with the Guidelines on State aid for climate, environmental protection and energy. To tackle potential possibilities of **streamlining and simplifying the process of applying for a CM**, the Commission should, within 6 months of the entry into force of the regulation, present a report evaluating such possibilities. After consultation with the Member States, the Commission should come forward with proposals with a view to streamlining and simplifying the process for assessing CMs as appropriate within 9 months after entry into force of the regulation.

	2-way CfDs or equivalent schemes with the same effects should include **penalty clauses** in case of **undue unilateral early termination** of the contract.	- the potential and viability of **market platform(s) for PPAs**, to be used on a voluntary basis, including the interplay of these potential platforms with other existing electricity market platforms, and the pooling of demand for PPAs through aggregation. - **Whether barriers persist** and **whether there is sufficient transparency** in the PPAs markets. It may draw up specific guidance on removal o barriers.	
Restrictions	The **design** of 2-way CfDs or equivalent schemes with the same effects should: Preserve the incentives for the generating facility to operate and participate efficiently in the electricity markets; **Prevent any distortive effect** on the operation, dispatch and maintenance decisions of the generating facility or on bidding behaviour in day-ahead, intraday, ancillary services and balancing markets; Ensure that the **level** of the minimum and maximum **remuneration** is **aligned with the cost of the new investment** and the market revenues; **Avoid undue distortions to competition and trade** in the internal market by determining remuneration amounts through a competitive, open, clear, transparent and nondiscriminatory bidding process. In cases the bidding process cannot be conducted, 2-way CfDs shall be designed to ensure that the distribution of revenues to undertakings does not create undue distortions to competition and trade in the internal market;	If a guarantee scheme for PPAs is backed by a Member State, it should: - Include provisions to **avoid lowering the liquidity** in electricity markets - Not provide support to the purchase of generation from fossil fuels Member States may decide to limit those guarantee schemes to the exclusive support of the purchase of new renewable generation according to the Member State's decarbonization policies Member States can decide to target the instruments supporting PPAs uptake to **specific categories of consumers**, applying objective and non-discriminatory criteria. In support schemes, allowing the participation of projects which reserve part of the electricity for sale through renewable PPAs, and applying evaluation criteria facilitating the access of customers that face entry barriers: - **should not negatively affect competition in the market**, in particular in cases when the two parties involved in the PPA are controlled by the same entity PPAs shall **specify the bidding zone** of delivery and the responsibility for securing cross-zonal transmission rights in case of a change of bidding zone.	Member States applying CMs which were approved before the entry into force of Regulation (EU) 2019/943, can exceptionally **derogate** for a limited period of time, and as a last resort mechanism, **from the CO2 emission limit** there provided. The derogation should however be limited to existing generation capacity that started commercial production before 4 July 2019, i.e. before the entry into force of the Clean Energy Package.

	Avoid distortions to competition and trade in the internal market. resulting from the distribution of revenues to undertakings. The obligation to use 2-way CfDs or equivalent schemes with the same effects **does not apply to support schemes not directly linked to electricity generation**, like storage, and which do not use direct price support, such as investment aid in the form of upfront grants, tax measures or green certificates amongst others. It also does not apply to: Technologies that are at early stages of their market deployment **Emerging technologies** for which other types of direct price support schemes may be better placed to incentivise their uptake. Possible exemptions for **small-scale installations and demonstration projects** pursuant to Directive (EU) 2023/2413 is foreseen.	PPAs shall **specify the conditions** under which customers and producers may **exit from PPAs**, such as any applicable exit fees and notice periods Member States, when designing measures directly affecting PPAs, shall respect possible legitimate expectations and shall take into account the effect of those measures on existing and future PPAs.	

Table B: Commission past decisions

Table B.1 – Antitrust decisions

Case (Parties, date, Institution)	Part of the value chain (wholesale, retail …)	Duration of the contract	Rules involved	Competition issues (Foreclosure, liquidity, others)	Market definition	Decision (Fine, commitments…)
COMP/39.386 - EDF LTC, 2010	Retail	5 years	102	Foreclosure and iquidity	Retail market for intensive users consuming more than 7GWh	Commitments
COMP/B-1/37966 – Distrigaz, 2007	Retail (wholesale for reseller?)	5 years (2 years reseller)	102	Foreclosure	Retail market for supply of H gas for consumer consuming more 12 GWh	Commitments
COMP Gas Natural (2000)	Retail (for gas market)	18 years	102	Foreclosure	Not mentioned in the IP	Commitments
COMP/39.402 RWE (2008)	Transmission		102	Foreclosure (refusal to supply capacities)	Transmission + wholesale + retail	Commitments (structural)
COMP/39.317 E.ON (2010)	Transmission		102	Foreclosure (refusal to supply capacities)		Commitments (behavioural) → to compare to RWE

Table B.2 : Merger décisions

Merger Cases	Part of the value chain (wholesale, retail …)	Duration of the contract	Competition issues (Foreclosure, liquidity, others)	Market definition	Decision (Fine, commitments…)	Comments/remarks
COMP/M.1853 EDF/EnBW	Retail	12 y and more	Foreclosure and Liquidity	Eligible consumers	Commitments	Lack of liquidity §34: L'accès à la capacité de production en France ne serait effectivement possible que si EDF accordait cet accès, puisqu'elle est le principal producteur de ce pays. Actuellement, les trois producteurs indépendants potentiels fournissent de l'électricité principalement à EDF ou la produisent pour un usage captif. Un certain nombre de grands clients industriels produisent de l'électricité pour leurs propres besoins, mais sont liés à EDF par des contrats de longue durée (12 ans) pour leur production excédentaire, dans le cadre du programme de cogénération. §37 : Le négoce d'électricité en gros exige de la liquidité, c'est-à-dire un cadre dans lequel les producteurs sont en mesure de vendre des quantités suffisantes aux grossistes. En France, la structure de la concurrence n'est pas propice à la liquidité, laquelle a donc peu de chances de se développer. En effet, EDF est le principal producteur en France et les trois producteurs indépendants potentiels ne représentent que 5 % de la production totale. En outre, EDF continue ‡ dominer le marché de l'approvisionnement des clients éligibles. Tant qu'il n'y aura pas de concurrence significative sur ce marché, il n'y a aucune incitation au développement des activités de négoce. Difficulty to develop new capacities: §35: Toutefois, la constitution d'une capacité de production est une opération de longue haleine qui implique des investissements trés importants, c'est-à-dire des coûts irréversibles élevés, qui ne peuvent servir à autre chose qu'à la production d'électricité. De plus, il faudrait que les clients soient disposés à signer des contrats de fourniture de longue durée (dix à quinze ans) pour garantir, dans une certaine mesure, l'investissement de départ qui est élevé.

Table B.3: State aid decisions

State aid cases	Measure(s)	Duration	Market definition	Comments/remarks
SA.58207 CZE nuclear (2022)	PPA (Dukovany and a SPV state owned) State loan (100% construction costs) Change of law protection	60 years	Electricity markets	Market failures: scale of the capital requirement + longevity of exposure to market pricing signals + longevity of exposure to political decisions. While long-term contracts are a frequent requirement to enable large long-term investments, the contract duration does not necessarily always cover the entire economic lifetime of a project
Poland 2009/287/CE JOUE 28/03/2009 L83/1	Power Purchase Agreements (PPAs) in the Polish electricity sector	7 to 20 years		§50: when a state owned company uses its funds in a way that can be deemed to constitute state action, then these funds should be regarded as state resources within the meaning of Article 87(1) 216. Buyers have an interest in concluding long-term contracts only if these contracts provide them some hedging against fluctuations in the electricity market, and in particular against changes linked to fluctuations in fuel costs. For this reason a buyer would have an economic interest in a long-term contract of this type only if the seller offered to take part of the risk associated with fluctuations in fuel costs or if the generating technology ensured stable fuel costs, as is the case with hydropower plants, and, in certain conditions, nuclear plants. 217. This economic logic is confirmed by the fact that there does not seem to be any example of private buyers taking long-term contracts without state intervention with plants using fossil fuel and covering all production costs for the same duration as the PPAs (more than 10 years). The Commission found none in its energy sector enquiry, and, despite their claims to the contrary, none of the interested parties submitted an example of such a contract to the Commission, despite the fact that some of them belong to very large groups with activities in several countries.

Table C: Commission's doctrine - Report extracts

Topic	Commission's doctrine (before)
Maturity	"Since electricity markets are characterised by a high level of maturity, which manifests itself in a relatively low number of new connections to the grid as compared to the total number of customers, the bulk of new clients can only be recruited among existing customers by means of lower prices and/or better terms and conditions of sales" (§935, p.285). The constant increase in total generation capacity since 2000 coupled with the decrease in average demand since 2008 has widened the margin between average demand and installed capacity since the beginning of the economic crisis (idem, §33)
Vertical integration and Liquidity	« Various business models as well as various structures due to the liberalisation process exist on electricity markets in the EU, ranging from stand-alone generators and independent supply companies to fully integrated utilities. In more recently liberalised Member States vertically integrated companies, or very strong ownership and/or contractual links between generators and suppliers, are predominant. In areas that were liberalised earlier, such as the UK and Nord Pool, business strategies seem to be somewhat more diverse. In the UK, as well as the larger integrated companies, a number of independent generators with their own business strategies exist. On the Nordic market(s) consisting of Norway, Sweden, Finland and Denmark independent suppliers are relatively important" (p.112) "Another form of vertical foreclosure was found to exist by way of the integration of generation/imports and supply interests within the same group. This form of vertical integration reduces the incentives for incumbents to trade on wholesale markets and leads to sub-optimal levels of liquidity in these markets. […]. Low levels of liquidity are an entry barrier to both gas and electricity markets » (DG Competition report on Energy sector Inquiry, p.9) « Vertical integration of generation and retail within the same group reduces, all other things being equal, the need to trade on wholesale markets. In turn, this can lead to a reduction of liquidity of wholesale markets. In a market without any vertically integrated companies, all electricity will necessarily be traded between generators and suppliers. In contrast, when all companies are vertically integrated, each vertically integrated group in the sector would meet (part of) its respective demand from final customers with own generation capacity and so would have less need to enter into wholesale transactions. Lack of liquidity can have many negative effects, such as: high volatility of prices, which increases costs for hedging (this can be an important barrier to entry) and a lack of trust that the exchange price reflects the overall supply and demand balance in the wholesale market (reduced reliability of the price signal). A lack of liquidity may also initiate a vicious circle by creating further incentives to vertical integration because operators do not want to rely on the wholesale market for their electricity supply. New entrants face higher risks when markets are volatile and consequently may not be able to match, at least not in the short run, market offers from their vertically integrated competitors and may only be able to attract capital at higher costs"

Liquidity	"Cross-border entry in electricity markets is facilitated to an important degree if entrants do not have to enter as vertically-integrated companies acquiring simultaneously generation capacity and a customer portfolio, but can choose to enter as purely a supply company or generation company. This reduces the risks and costs of entry. However, this is only possible if a liquid wholesale market exists. Liquid wholesale markets are therefore key for the erosion of incumbent's market power" (p.151) « wholesale markets are not liquid: either because of vertical foreclosure due to long-term contracts (gas) or because companies are active both in generation and retail, limiting the development of wholesale markets (electricity)" (p.19)
Foreclosure	« The Sector Inquiry has also confirmed the vertical tying of markets by long-term downstream contracts as a priority for review of case situations under competition law and of providing guidance where required. When such contracts, concluded by dominant firms, foreclose the market, Article 81 or 82 EC may be infringed unless there are countervailing efficiencies benefiting consumers. 12 Similarly, power purchase agreements in the electricity sector can have foreclosure effects » (p.13) The concept of downstream foreclosure refers to the anti-competitive effects which can arise from a bundle of parallel long-term agreements between final customers and their suppliers - be it a dominant supplier or a network of suppliers engaging in the same type of practice. A network of parallel contracts can adversely affect the market when the contracts prevent alternative suppliers from finding suitable outlets for their products. The customers have met their entire demand – or a large part thereof - on the basis of long-term contracts with incumbent suppliers and are thus no longer available on the market (p.282) As explained above long-term contracts curb the customers' mobility and prevent the customers from choosing the best offer available on the market at a given moment in time. On the other hand, depending on the structure of the individual contract, in particular the price formula contained in the contract, long duration may allow the customers to better manage the risks related to adverse price movements, to which they would otherwise be exposed. The benefits of price security, which for certain customers may represent a real value, may not however outweigh the negative effects on competition and overall consumer welfare of long-term contracts on market contestability. This fact must also be considered when discussing the recent calls for re-introduction of long-term reservations (of the already congested and scarce interconnections) in order to enable long-term supply contracts (§930, p.284) The Sector Inquiry has also confirmed the vertical tying of markets by long-term downstream contracts as a priority for review of case situations under competition law and for providing guidance where required. When such contracts, concluded by dominant firms, foreclose the market, Article 81 or 82 EC may be infringed unless there are countervailing efficiencies benefiting consumers. 438 Similarly, power purchase agreements in the electricity sector can have foreclosure effects (§1027,p.323)
PPA	"In certain countries PPAs are believed to be among the main causes for the low volumes of electricity traded on the wholesale markets". (p.156) "A number of respondents also agreed that power purchase agreements (PPAs) between generators and suppliers also can add to the drying-up of liquidity".(p.225)

Part 2 - Long-term contracting for professional consumers: A key tool for deep decarbonisation and fast electrification of EU industry today

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Introduction

'Contracts,' 'markets' and 'law and regulation' have been intertwined in economic analyses of market economies for about 40 years.[146] It is no surprise to see the same thing in the area of public utilities, particularly electricity.[147] For more than 25 years, Prof. Glachant's main research topic has been changes in the electricity industry and market.[148] The main lesson

[145] The authors have enormously benefited from discussing this topic with Adrien de Hauteclocque. Glachant met de Hauteclocque 20 years ago when he was a young lawyer looking for a PhD topic. They worked together at the Florence School of Regulation before de Hauteclocque joined the European Court of Justice. It is very satisfying that such a high-level practitioner and a typical academic scholar can speak to each other with respect and mutual benefit. Of course, everything in this paper is solely the responsibility of the authors.

[146] The following four economists have received a Nobel Prize for this: Ronald Coase "*The Firm, the Market, and the Law*," University of Chicago Press, 1990; Douglass North "*Institutions, Institutional Change and Economic Performance*," Cambridge University Press, 1990; Oliver Williamson "*The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting*," The Free Press, 1985 and "*The Mechanisms of Governance*," Oxford University Press, 1999; Elinor Ostrom, "*Governing the Commons. The Evolution of Institutions for Collective Action*," Cambridge University Press 1990.

Glachant has analysed this topic in four complementary books: Brousseau and Glachant, "*The Economics of Contracts. Theory and Applications*," Cambridge University Press, 2002; Brousseau and Glachant, "*New-Institutional Economics. A Guidebook*," Cambridge University Press, 2008; Brousseau and Glachant, "*The Manufacturing of Markets. Legal, Political and Economic Dynamics*," Cambridge University Press, 2014; Brousseau, Glachant and Sgard, "*The Oxford Handbook of Institutions of International Economic Governance and Market Regulation*," Oxford University Press, 2023.

[147] Joskow, Paul L. & Richard Schmalensee, "*Markets for Power: An Analysis of Electrical Utility Deregulation*," MIT Press, 1983; Hunt, S. & Shuttleworth G., "*Competition and Choice in Electricity*," Wiley, 1996; Chao, Hung-po & H.G. Huntington, "*Designing Competitive Electricity Markets*," Kluwer, 1998; Newbery, David, "*Privatization, Restructuring, and Regulation of Network Utilities*," MIT Press, 2000; Stoft, S., "*Power System Economics*," Wiley, 2002; Hunt, S., "*Making Competition work in Electricity*," Wiley, 2002.

[148] Glachant, Jean-Michel, "*Les réformes de l'industrie électrique en Europe*," Commissariat Général au Plan, 2000; Glachant, Jean-Michel and Dominique Finon, "*Competition in European Electricity Markets. A Cross-country Comparison,"* Edward Elgar, 2003; Glachant, Jean-Michel and Lévêque, François, "*Electricity Reform in Europe. Towards a Single Energy Market,"* Edward Elgar, 2009; Lévêque, François and Glachant, Jean-Michel et al., "*Security of Energy Supply in Europe. Natural Gas, Nuclear and Hydrogen,"* Edward Elgar, 2010; Glachant, J-M, Finon, D. and de Hauteclocque A., "*Competition, Contracts and Electricty Markets. A New Perspective,"* Edward Elgar, 2011; Meeus, Leonardo and Jean-Michel Glachant, "*Electricity Network Regulation in the EU. The Challenge*

learnt is that *contracts*, *markets* and *law and regulation* always interact and co-determine the performance of the electricity industry. Keeping this lesson in mind, we can now go into the topic more deeply, i.e. long-term contracting (LTC) for procurement is a promising tool for professional consumers which has the potential to greatly contribute to deep decarbonisation and fast electrification of EU industry today.

In order to properly address this tool, we first have to identify the 'electricity world' in which it might be implemented today or tomorrow. This will be the purpose of the first section, *Three Worlds of Electricity Markets*, in which we distinguish 1) the old ideal world of '*Just Building Open Markets*,' which was rightly the priority for European authorities at the beginning of the 21st Century, to transition away from the previous world of vertically integrated monopolies and nationally closed borders; 2) the empirical world of '*Co-building a Set of Working Markets*,' in which law and regulation intervened in the pricing of peak periods (in the wholesale market) and of capacity adequacy (in a parallel market), and for entry in green generation investments (support schemes); 3) the fully policy-driven world of '*An Accelerated Decarbonisation Push towards Net Zero Industry,'* which is where we now stand in the EU, expecting to reach in roughly a decade, around 2035, entirely decarbonised electricity production and strong electrification of all professional energy consumption.

Long-term contracting offered to professional consumers, although not a core element in market designs implemented in the successive 'worlds of electricity markets,' was always in parallel with mainstream changes. In the first world of '*Just Building Open Markets*,' the resistance in European competition policy to LTC was rightly conceived as active protection permitting "*Market building through antitrust,*" as it was very accurately characterised by a *référendaire* at the European Court of Justice.[149] In the second world of '*Co-building a Set of Working Markets*,' there were initiatives by private parties which promoted new LT contracting for professional consumers labelled 'power purchase agreements,' among an elite group of companies with innovative ESG strategies[150] promoting decarbonisation and a few electricity-intensive industrialists able to benefit from the low cost of certain renewable generators in their sophisticated energy procurement portfolios.[151] This was in parallel with other long-term contracts offered for security of supply purposes in capacity mechanisms. In the third world of '*An Accelerated Decarbonisation Push towards Net Zero Industry,'* power purchase agreements (PPAs) were included in the draft EU electricity market reform in March 2023 by the European Commission,[152] which aimed to offer professional consumers a tool which might protect them from excessive price or quantity uncertainties alongside public contracts for differences (CfD).[153] Indeed, long-term contracts promise ways to deepen the decarbonisation

Ahead for Transmission and Distribution," Edward Elgar, 2018; Glachant, Jean-Michel, Paul Joskow and Michael Pollitt, "*Handbook on Electricity Markets*," Edward Elgar, 2021.

[149] Adrien de Hauteclocque, "Market Building through Antitrust. Long-term Contract Regulation in EU Electricity Markets," Edward Elgar, 2013.

[150] 'ESG' here stands for '*Environmental, Social & Governance*,' a way of reporting corporate strategy to investors. In the EU it is governed by a directive, the CSRD, which entered in force in January 2023.

[151] Glachant's chapter 'New business models in the electricity sector,' in "*Handbook on Electricity Markets,"* Edward Elgar, Chapter 17. 1st ed. 2021, 2nd ed. 2023.

[152] European Commission, "Proposal for a Regulation of the European Parliament and of the Council amending Regulations (EU) 2019/943 and (EU) 2019/942, etc.," COM/2023/148 Final. Strasbourg, 14 March 2023.

[153] A wonderful and comprehensive introduction to the actual world of European CfDs, with all the generation-based and generation-independent options, and a review of the 10 European countries already implementing it, is Lena Kitzing, Anne Held, Malte Gephart, Fabian Wagner, Vasilios Anatolitis and Corinna Klessmann, "*Contracts-for-Difference to support renewable energy*

of existing professional electricity consumption and to facilitate the take-off of the necessary electrification of most of the fossil fuel technologies and processes still prevailing in industry.

Section 1: 'Three Worlds of Electricity Markets'

Contracts, markets and law and regulation always interact. It is therefore necessary to start by identifying the three successive worlds of electricity markets that we can acknowledge in the EU since the start of electricity liberalisation at the end of the 1990s. The first world is '*Just building Open Markets,*' the second one is pragmatic '*Co-building a set of working markets*' and the third one is very typical of the new frenzy of the 2020s decade: '*An Accelerated Decarbonisation Push towards Net Zero Industry'.*

1. The pioneer: 'Just Building Open Markets'

For most of the last century it was thought that electricity, being collective waves of electrons, could not be traded in open markets. This is what digitalisation, computer terminals and mainframes revolutionised when there was a political will to change the industry.[154] Other markets also changed dramatically, for example the wholesale markets for commodities and for financial assets, which stopped being cooperatives of traders and became private companies – as soon as digitalisation and computer terminals made it easier to trade and to check if the outcome of trading was fair.[155]

The feasibility of digital trade in electricity alone did not tell what the outcome of this open trade process would be. It is, however, one of the simplest pieces of energy economics, as the outcome of open wholesale electricity trading can simply mimic the outcome promised by the established basic theory of optimal pricing and investment in electricity generation.[156] Many economists have worked on this repeatedly and have always found the same thing: open wholesale electricity trading[157] should work both for the hourly and semi-hourly pricing of the commodity and attract the right investment in generation. At each point, only plants with the smallest variable costs are taken into account to define market equilibrium. The marginal plant is always the most expensive bid among all the plants called on to serve demand, and it permits other generation technologies – being retained – to cover a part of their fixed costs. At the end

technologies: Considerations for design and implementation," Research Report, Florence School of Regulation, RSCAS, EUI, March 2024.

[154] J-M Glachant, 'Le Pool d'électricité en Grande-Bretagne,' *Revue d'Economie Politique*, No.1, 1998, pp 87-107.

[155] See Craig Pirong, 'Exchanges: The quintessential manufactured markets,' in Brousseau Eric & J-M Glachant "*The Manufacturing of Markets. Legal, Political and Economic Dynamics*," Cambridge University Press, 2014, Chapter 19.

[156] One of the great clarifiers: Steven Stoft, "*Power System Economics. Designing Markets for Electricity*," Wiley, 2002. One of the best recent overviews: Paul L. Joskow & T-O Léautier, 'Optimal wholesale pricing and investment in generation: the basics," in Glachant, Joskow and Pollitt, "*Handbook on Electricity Markets*," Edward Elgar, 1st ed. 2021, 2nd ed. 2023, Chapter 3.

[157] It took time to really identify that some market designs would not work. A typical example is California. The Californian reform started in 1996 and US electricity market design experts held a conference in Stanford in 1997, which was reported in 1998 in "*Designing Competitive Electricity Markets*" (ed. Hung-po Chao & H.G. Huntington, Kluwer, 1998), which had 12 chapters and 13 authors. No agreement of any kind was attempted by these experts and "*Rather than espousing a particular market design for the industry's future, each author focuses on an important issue or set of issues and tries to frame the questions for designing electricity markets using an international perspective*." The crisis exploded later, in 2000-2001.

of the year, or years, all the useful plants and technologies will have made their money and benefits, signalling to investors what to do next.

Of course, this does not imply that many conditions are not required, or arrangements do not need to be set. Would the exchange take care of dispatching the plants, or would generators self-dispatch? How are intraday and real time variations in demand and in the actual generation of each plant treated? Do the transmission network constraints internalised by the wholesale trade, or dealt with in an *ex post* 'uplift,' end with nodal or zonal pricing? And how, then, to cross the boundaries of zones, or the boundaries of each territory with coherent internal nodal pricing? However, the foundations[158] were solidly there: open wholesale trading gives the electricity industry optimal pricing and investment.

For a while, even enthusiastic proponents of open wholesale trading did not put any emphasis on open retail trading.[159] Among economists, it was mainly the first British regulator and economist at Cambridge, Stephen Littlechild, who fought to get open retail trading accepted by government decision-makers, parliamentarians, the industry and academia. He established new evidence: open retail markets are needed to transfer the benefits of open wholesale trading to final consumers.[160]

2. The pragmatic 'Co-building a set of working markets'

As several alternatives co-exist to set different chains of operation of open markets, such alternatives soon became opportunities to establish alternative positioning in the "political economy" of electricity reforms and changes to it.[161] Spectacular crashes, like the Californian crisis in 2000-2001, fuelled interest in this. As early as 2002, a camp was already established that refused to keep the ideal of open wholesale markets working on their own and defined a new agenda of electricity design reform based on "co-building a set of working markets."[162] What does this mean?

To keep all the incentives for private investors to voluntarily choose technologies and the amount of capacity for each technology in an evolving electricity system you have to let peaks, hazards and shortages have a real deep impact on pricing and be effectively reflected in prices. However, in mundane real life these waves of outstanding booming prices also trigger waves of protest and fury in such a traditionally regulated industry as electricity. Furthermore, when electricity equilibrium is very tight, even for a few hours, small generation units can also exercise significant market power, as Frank Wolak, professor at Stanford (and Chair of the

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[158] Joskow, P.L & R. Schmalensee, "*Markets for Power: An Analysis of Electrical Utility Deregulation*," MIT Press, 1983. Paul L. Joskow, 'Introducing Competition into regulated network industries: from hierarchies to markets in electricity,' *Industrial and Corporate Change*, 1996, 5 (2), pp. 341-82.

[159] Joskow, P.L, "Why do we need electricity retailers? Or can you get it cheaper wholesale?" MIT, CEEPR WP, 2000. Littlechild, S.C., "Why we need electricity retailers: a reply to Joskow on wholesale spot price pass-through," Cambridge WP in Economics, No. 21, 2000

[160] Stephen Littlechild, 'The evolution of competitive retail electricity markets,' in op. cit "*Handbook on Electricity Markets*," Chapter 5.

[161] Two American scholars, Withold J. Henish and Bennet A. Zelner, said that the political economy of electricity affairs has a typical "cyclical nature." 'The cycling of power between private and public sectors: electricity generation in Argentina, Brazil, and Chile,' in Brousseau & Glachant, "The Manufacturing of Markets," op. cit, 2014, Chapter 12.

[162] Stoft, S., "Power System Economics," Wiley, 2002; Hunt, S., "Making Competition work in Electricity," Wiley, 2002.

Market Surveillance Committee at the California Independent System Operator), established in the aftermath of the California crisis.[163] Once the government, the regulator, the market operator and the system operator etc., establish proper regulation of "extraordinary wholesale pricing," one cannot expect private investors to keep investing in a way that guarantees long-term adequacy and diversity of the generation set.

A 'market for generation patches' has to be added to the wholesale capped market to give certain generation units the complementary 'fixed cost recovery' (the '*missing money*') that the wholesale market no longer provides to the technologies with higher fixed costs.[164] We all know this today under the more generic term 'capacity remuneration mechanisms.' This new regime also expands the dilemma for investors to other targets of wholesale price capping, like the generating units with the greatest hazard for usage and revenue,[165] the ones that the general electricity system absolutely needs for security.

Voluntarily keeping active the former '*Just Building Open Markets*' has not suddenly become stupid economics, as Bill Hogan (and some others) continually explained and advocated;[166] it has just become a tiny 'law and regulation' niche with very limited political economy support, as was well known in the EU even before the repeated crises of the early 2020s.

Unfortunately, the direct 'missing money' issue for existing generation assets is not the only issue to question the former logic of '*Just Building Open Markets.*' If governments want to exercise their executive power to encourage certain technologies to enter the generation set with assisted business models, then they do so. The first very big candidate was nuclear, and it was nuclear in the UK, the very first 'open market' country in Europe.

An extraordinary regulated investment entry process was created for nuclear on this occasion, and it was directly incorporated in the European leading 'open market' doctrine under the 'National Security of Supply' flag in the 'generation adequacy' option. Fabien Roques, who studied the 'CCGT free entry vs nuclear regulated entry' rivalry for several years at Cambridge University concluded the debate at the beginning of the 2010s by saying, in other words, that the only realistic reality from then on was "*Co-building a set of working markets."*[167]

This new electricity market realism only increased during the decade-long European policy push for renewables, which started in 2008 with the '20-20-20 in 2020' target. Not having the positive property of CCGT plants to protect their own revenue stream by being the dominant

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[163] Frank Wolak, 'Wholesale Electricity Market Design,' in "*Handbook on Electricity Markets*," op. cit, Chapter 4.

[164] S. Stoft, op. cit, 2002.

[165] See Creti Anna and Fulvio Fontini, "*Economics of Electricity. Markets, Competition and Rules*," Cambridge University Press, 2019, Chapters 21, 22 and 23; Fabien Roques, 'The evolution of the European model for electricity markets,' in "*Handbook on Electricity Markets*," op. cit, Chapter 11.

[166] William Hogan, 'On an energy only electricity market design for resource adequacy,' Harvard University, Center for Business and Government, John Kennedy School, 2005; also 'Strengths and weaknesses of the PJM Model,' in "*Handbook on Electricity Markets*," op. cit, Chapter 7; On Texas, see Ross Baldick, Shmuel S. Oren et al., 'ERCOT: success (so far) and lessons learned,' in "*Handbook on Electricity Markets*," op. cit., Chapter 8; For the latest on this see Frederic Gonand, Anna Creti, Jean-Michel Glachant et al., '*Beyond the crisis: re-thinking the design of power markets,'* Report to the French Energy Regulatory Commission, CRE, Paris, March 2023. Bill Hogan is included as an advisor.

[167] Fabien Roques, 'Long-term contracts and technology choices in electricity markets,' in Glachant, Finon and de Hauteclocque, "*Competition, Contracts and Electricity Markets. A new Perspective*," Edward Elgar, 2011, Chapter 2.

marginal units,[168] renewables ended up getting their own regulated investment entry with 'renewable support schemes' (somewhat similar to nuclear) while depressing the revenues of other generation technologies with their typical very small or negligible variable costs inserted in wholesale market marginal bidding.

What was an '*open wholesale market*' has therefore become a trio of '*working markets*' with regulated long term contracts favouring generation investment (like nuclear and renewables) in new units imposed on the wholesale marginal bidding market, plus other regulated revenue given outside this former primary market to certain technologies having the 'blessed capacity profile' for a security of supply trajectory selected by a third 'capacity market' entity.

Some Europeans might have thought that Europe is really the native land of regulation while the US always favours open markets in some way. However, this has been denied by a founding father of US electricity open market policy, Paul Joskow at MIT. He calmly explained in 2021 that the new tectonic market change was genuinely proceeding from the electricity decarbonisation target itself and its resulting difficult security of supply constraints. It was this new policy process which changed the game for the electricity industry and its markets. The new era EU and the US are both in is no longer '*Just Building Open Markets*,' but definitively '*Co-building a set of working markets.*' Paul Joskow himself termed this new era one of '*Hybrid Markets*,' a very distinctive institutional regime replacing the former 'Open Markets' one.[169]

3. The frenzy today: "An Accelerated Decarbonisation Push towards Net Zero Industry"

Long term contracts, which were de facto introduced, but with limited acknowledgment, in this second world of 'Co-building working markets,' are openly questioning the core of the coming third world of 'An accelerated decarbonisation push.' How did this happen?

While the US was also facing the victorious political economy of 'Co-building a set of working markets,' the EU on its part was threatened by the unprecedented triple crises of the 2020s. It was not unprecedented for the EU to face energy crises, as this already happened with the oil shocks in 1973 and 1979. What was unprecedented was to face a triple crisis that the US and the rest of the OECD did not face. What did the EU triple crisis consist of?

1) Like the rest of the world economy, the EU suffered in the Covid pandemic. To stimulate post-Covid recovery, the EU chose to accelerate its decarbonisation as a booster, which ends in a rosy '*Fit for 55*' target and an extraordinary budget. This was not a gamble in economic terms, as a study by Nobel laureate Jo Stiglitz and UK leading climate economist Nicholas Stern demonstrates the effectiveness of climate policies as recovery amplifiers.[170] However, it was a gamble in policy terms. Two key EU policies (energy and climate, plus economic recovery) became unified by their destiny: common success, nothing noticeable or failure? The

[168] And always able to arbitrage by reselling on the gas market if it is more profitable.

[169] Paul L. Joskow, 'From Hierarchies to Markets and Partially Back Again in Electricity: Responding to Deep Decarbonization Commitments and Security of Supply Criteria," MIT CEEPR WP 2021-08, June 2021. Consider this other piece by Fabien Roques a companion paper to Joskow's: 'The evolution of the European model for electricity markets," in "*Handbook on Electricity Markets*," op. cit, Chapter 11.

[170] C. Hepburn, N. Stern, J. Stiglitz et al., 'Will Covid-19 fiscal recovery packages accelerate or retard progress on climate change?' *Oxford Review of Economic Policy*, 2020, Vol 36, No. S1, pp. 359-381.

adoption of the very first EU climate law and of the EU multi-year 2021-27 budget were both a good start in summer 2021.

2) However, at the end of February 2022 the invasion of Ukraine by Russia, the EU's main supplier of gas, oil, coal and external nuclear fuel, created a terrifying threat to our energy supply, and triggered an energy price crisis rocking both its gas and electricity markets. The strategic long-term collective European answer was of the same kind as in 2021: again to accelerate the energy decarbonisation push.[171] The EU cannot, like the US, count on its own oil, gas and even coal strength to resist targeted foreign energy pressure. As the European Commission put it in spring 2022, we just had to '*REPower EU.*' Therefore, we now had three European policies intertwined: sovereignty (energy security), basic economic wealth (growth, inflation, employment) and sustainability (decarbonisation). Altogether this makes a very high policy stake, questioning our strategic autonomy vis-à-vis the US and the rest of the OECD.

3) This second dimension was not yet the end of our poly-crisis. This was seen almost immediately because early preparations for the implementation of the new EU poly-policy soon revealed another fundamental rupture.[172] The many world industry value chains created in the last four decades of globalisation are not strong enough, reactive enough or secure enough to guarantee that the EU could successfully conduct its new fundamentally transformational policies. For almost a decade, perhaps since the first invasion of Ukraine in 2014 or the successful Paris agreement in 2015, we might have thought that the demanding EU energy and climate policy would succeed if the rest of the world was more or less following some kind of similar transition.[173] Today the bar of transformations to undertake in the EU has been raised so high that we must add new conditions and new options to increase the likelihood of final success in 2035 or 2040.[174] Many of the new additional layers of transformation are strongly industrial: creating or expanding manufacturing capacity; feeding it with enough raw materials and components; making an extensive inventory of the entire geological subsoil; training or re-skilling human resources; developing new clean techs; upgrading all our related infrastructure accordingly, etc. The EU really saw the issue and rightly reacted with two new policy focuses at the beginning of 2023: the Net Zero Industrial Act and the Critical Raw Materials Act. However, the US also reacted in similar areas, to distance itself from China and rebuild more independent industrial strength by incorporating a massive financing plan in its post-Covid recovery plan: the *Inflation Reduction Act*, endowed with hundreds of billions of dollars.

Therefore, the EU has tripled its stakes, while the US is only adding a promising new post-Covid industrial push to its already strong national fossil industries. It is unfortunately obvious that the EU and the US are no longer living in the same world of markets and policies. Of course, the EU might fail or succeed, but it cannot mimic the current US policy. The EU has to do more than the US, because it does not have protective domestic fossil strength. And the EU has to do more with less because it does not have the strong central executive power and the strong central financial capabilities that the US can benefit from. This is certainly an unpleasant truth, but a consequential truth. Here we are.

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[171] Leonardo Meeus et al., "The 5th EU electricity market reform: a renewable jackpot for all Europeans package?" *Policy Brief*, Florence School of Regulation, 2 December 2022.

[172] Leonardo Meeus, "Electricity market reform: what is (not) in the European Commission proposal," *Policy Brief*, Florence School of Regulation, 13 May 2023.

[173] Remarkably analysed by Nathalie Tocci in her landmark book "*A Green and Global Europe,*" Polity Press, 2023.

[174] Leonardo Meeus et al., 'Energy policy ideas for the next European Commission: from targets to investments,' *Policy Brief*, Florence School of Regulation, 31 October 2023.

Section 2: 'Long Term Contracting for professional consumers'

We have seen that the EU lived in significantly different electricity worlds in recent decades, '*Just building Open Markets*' and '*Co-building a set of working markets,*' and is entering a third world, still to be fully discovered: 'An A*ccelerated Decarbonisation Push towards Net Zero Industry.'*

The other issue in this panoramic review are postures vis-à-vis long-term contracting by professional consumers. These postures can be positive, negative or neutral. They can also be of importance or not for the success of core European energy policy corresponding to each of the above worlds.

We actually find there three different EU postures: first one was '*hostility,*' but delivering strong support for the EU primary policy of opening European markets; second has been '*ignorance,*' with benign neglect of the EU secondary policy of building a set of working markets; and third is '*ignition delay,*' with a promise in March 2023 in the Commission draft European electricity market reform, but a prolonged absence of review and redefinition of the very old EU hostility doctrine set in the first European electricity world.

1. Just Building Open Markets? With hostility to LT contracting with consumers; A priority for 'Open Market Building through Antitrust.'

It started this way in the European Union: hostility. Leaving the world of vertically integrated monopolies and closed national borders was not promising to be easy, as all the Member States were inheriting all the domestic fortresses to circumvent ongoing action at the EU level.

The issue has been closely researched for years by Adrien de Hauteclocque, a scholar before becoming a *référendaire* at the European Court of Justice in February 2011. Long-term contracting for professional consumers has both good and less good features, with very contrasting outcomes in a decentralised electricity market and in a concentrated market with incumbent dominance. In a decentralised electricity market, competition authorities can expect an increase in generation investment and a variety of entries in LT contracting with professional consumers. This can help the process of opening and of investment when existing wholesale exchanges (the PXs) are not by themselves bright and attractive. However, in a concentrated market with incumbent dominance, competition authorities have to fear the foreclosure of 'juicy' customers for efficient new entrants if the dominant incumbents start building LT strategic barriers. Furthermore, as the EU only had a very weak central energy regulatory authority[175] there was no symmetry between reacting *ex post* to abuses by incumbents at the level of the central EU competition regulator and preventing them *ex ante* at the level of the EU central

[175] See Jean-Michel Glachant, 'Building a Single Market with no Single Regulator: The Case of the European Electricity Market,' in "*The Oxford Handbook of Institutions of International Economic Governance and Market Regulation*," Brousseau, Glachant and Sgard, eds., Oxford University Press, 2023. Notice that a regime of absence of an energy regulator with a strong competition authority directly intervening in contracting by energy-intensive consumers existed in Germany before the building of the federal German energy authority, to the satisfaction of energy-intensive Germany. See Glachant, Jean-Michel, Ute Dubois and Yannick Perez, 'Deregulating with no regulator: Is the German electricity transmission regime institutionally correct?' *Energy Policy*, May 2008, pp. 1600-1610.

energy authority.[176] De Hauteclocque confirmed these findings two years later in a comprehensive book dedicated to the topic saying that "*Market building through antitrust*" had rightly become a central EU policy for years, but with the big caveat that economic and legal reasoning could question the appropriateness of building an *ex ante* policy with *ex post* policy tools.[177]

2. Co-Building a set of working markets? With ignorance: Benign neglect vis-à-vis small PPA innovations for the happy few

By reasoning and focusing more on the ultimate very long-term target of EU competition doctrine set in the first European world of electricity, should we have re-conceptualised its core objective? Was it, is it, building a set of working markets, as the second European electricity world is about? Or rather a quest for a never-ending full de-integration of the whole electricity industry, as such an industry requires so highly capital-intensive investments and is always facing such big and formidably unforeseen risks?

Having studied the 'free-entry with CCGTs vs regulated LT entry contracts with nuclear' dilemma for several years at Cambridge University, Fabien Roques tried several times to initiate a full update of European policy and its entry doctrine. Again in 2021, he recalled that the existing "*EU model*" is in practice only a "*patchwork*" of "*market modules*" and of "*national uncoordinated policies,*" among which are support schemes and capacity mechanisms.

In fact, before the poly-crisis of the 2020s, the general European posture vis-à-vis new LT contracting for professional consumers was voluntary ignorance. This was not consequential, however, because the dominant practice of using LTC support schemes to enter renewable generation, plus *ad hoc* capacity mechanisms for security of supply, was delivering what the strict hostility to LT contracting was supposed to bar. In addition, the main needs of consumers were met, with wholesale prices seeming to be fair and retail prices looking smooth.

Furthermore, benign neglect was also practised vis-à-vis the few initiatives by private parties encouraging new LT contracting for professional consumers under the label '*power purchase agreements*' (PPAs). Analytically (i.e. in academic terms) it was a very significant novelty, and for two main reasons. First, these particular entrants in renewable generation investing were voluntarily ignoring the existing LT public support schemes, preferring to act under the cover of bilateral long-term private contracts, with professional consumers starting the very progressive process of voluntary decarbonisation of their professional energy consumption. And second, because some very gifted energy-intensive professionals were already able to extract an interesting low cost of energy from certain renewable investments that they privately contracted.

However, before the 2020s poly-crisis these two kinds of innovations with professional consumers were seen by most EU civil servants and many professionals as being too special to raise a general case. On the one hand, only elite major companies with brands to nurture

[176] Adrien de Hauteclocque and Jean-Michel Glachant, 'Long-term contracts and competition policy in European energy markets,' in Glachant, Finon and de Hauteclocque "*Competition, Contracts and Electricty Markets. A New Perspective,"* Edward Elgar, 2011, Chaper 9.

[177] Adrien de Hauteclocque, 'Market Building Through Antitrust. Long-term Contract Regulation in EU Electricity Markets," Edward Elgar, 2013.

with innovative ESG strategies[178] (Google, Apple, Amazon, Microsoft, Walmart, Ikea, etc.) promoted decarbonisation. On the other hand, less than a handful of particular electricity-intensive industrials (like Norsk-Hydro and Alcoa) did so. In fact, the volumes involved were really Lilliputian at the international level. Bloomberg NEF found a world total of 35 GW of such PPAs in activity in 2019, when the total generation capacity installed in the US and the EU was around 2,300 GW.[179] Just 1.5%. Why care?

3. An Accelerated Decarbonisation Push towards Net Zero Industry? With an ignition Delay: The time has come to review the old EU 'Open Market Building' doctrine

Why is the 2020s European 'accelerated decarbonisation push' so obviously a new electricity world for the EU? Why should we question the former EU doctrine on LT contracting for professional consumers? What are PPAs promising professionals today that we would be foolish to ignore?

3.1. Is the European 'twice accelerated decarbonisation push' so obviously a new electricity world for the EU?

We all know than getting a certain result quickly and getting the same result much later are really no longer the same game. When a country, or a group of countries, chooses 2050 to reach a net zero GHG emissions target, we do not see it as the same as 2060 or 2070, as China and India do.

Several key European energy economists rationally consider that EU energy policy has actually changed its nature in the 2020s. For example, reviewing the latest literature and policy initiatives in 2023, Natalia Fabra and Mar Reguant (established contributors to the CEPR, Europe's leading network of economic policy researchers), find five dimensions of efficiency in the quest for energy transition, not only one or two as is usual. They are 1) cost efficiency (static and dynamic), 2) practical feasibility (societal acceptance), 3) social fairness, 4) empirical 'effectiveness' (difficulty to be bypassed) and 5) logical credibility (the likelihood of being both started and completed).[180] It seems that doubling the speed of the European decarbonisation journey could fall under such demanding and multifaceted scrutiny.

In Berlin, Karsten Neuhoff and colleagues at the DIW ask us to forget the traditional framing of EU policy as a 'trilemma' (affordability, sustainability, security) because, like it or not, it is becoming a 'quadrilemma' in which 'speed' (the actual date of delivery of key deliverables) is as important as the three previous objectives. This new *speed* imperative is said to govern both the date of actual reduction of EU GHG emissions and "*the predictable demand for energy technologies to unlock investments in manufacturing capacity.*"[181] Here the latest wave of new

[178] 'ESG' here stands for "*Environmental, Social & Governance*," a way of reporting corporate strategy to investors. In the EU it is governed by the CSRD, which entered in force in January 2023.

[179] Jean-Michel Glachant, 'New business models in the electricity sector,' in "*Handbook*…," op. cit, chapter 17.

[180] Natalia Fabra and Mar Reguant, 'The energy transition: A balancing act' in *Resource and Energy Economics*, 2024, 76.

[181] Karsten Neuhoff, Jörn C. Richstei and Mats Kröger, 'Reacting to changing paradigms: How and why to reform electricity markets,' in *Energy Policy*, 2023, September, No. 180.

European transformations identified in Section one is recognisable: the third European electricity world has a strong “EU industry minimal adequacy” constraint.

Therefore, to actually double its decarbonisation push the EU needs, first, a growing number of professional consumers to take an active part in decarbonisation of their own consumption, not only waiting for the electricity supply side to undertake it on its own. The EU therefore has to find ways to accelerate professional initiatives to self-decarbonise in liaison with some renewable investors, and push this practice beyond the few companies already doing it as part of their elementary corporate branding strategy.

Second, the EU needs other companies which are not already consuming electricity as their main fuel resource to start investing in processes and equipment to substitute fossil fuels with electricity. Certainly, we already know this principle and we call it ‘electrification.’[182] Then we need to consider that a company starting electrification will be subject to the particular risks typical of the electricity sector in terms of security, quantity and prices. This is very similar, on the consumer side, to the investment process of electricity generators entering renewable generation. When defining the second ‘European electricity world’ we saw that LT contracting for support schemes, and special capacity mechanisms, were needed to secure the flow of generation investment and adequate capacity because of the particular risks incurred by any supply investor entering a ‘decarbonising electricity industry.’

Why is this so obvious for entering decarbonising supply and not for entering decarbonising demand with new investments? We come back to Adrien de Hauteclocque, who has been at the European Court of Justice for 13 years and Head of Cabinet of its President since September 2019. In summer 2023 he publicly wondered if one should not consider updating EU doctrine regarding LT contracting for professional consumers. Why does the EU extensively use LT contracts to attract investors in renewable generation (feed-in tariffs and CfDs) and capacity remuneration mechanisms for security of supply, and more in the last decade, but not for direct decarbonisation of professional consumption? How can all EU industry self-electrify its internal processes, switch them to electricity consumption and stay competitive cross-border and globally, all through the typical electricity price spikes, risks and volatility? Why has the issue of LT contracting for professional consumers ‘*been asleep for 10 years*,’ to only be put ‘*in the spotlight*’ with CfDs and PPA entering the Commission’s *Reform of Electricity Market Design* in March 2023?[183] Of course, a Head of Cabinet at the European Court of Justice can only wonder and not publicly answer.

3-2. The new promises of PPAs in the EU third electricity world

The use of the term ‘PPA’ in the various drafts of the EU electricity market reform proposal since March 2023 has created interest in a public debate on potential new promises of LT contracting for professional consumers. We will look at several of these, not intending to draw up an academic treaty, but to open enough doors to show the outstanding potential of PPAs.

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[182] IRENA, “*Innovation landscape for smart electrification. Decarbonizing end-use sectors with renewable power*,” Abu Dhabi, June 2023. IEA, ‘Electrification Tracking,’ https://www.iea.org/energy-system/electricity/electrification#tracking accessed 11 July 2023.

[183] Adrien de Hauteclocque, ‘A competition analysis of long-term energy supply contracts,’ Ithaca Competition Conference, August 2023, https://www.linkedin.com/posts/adrien-de-hauteclocque-3a799724_long-term-energy-contracts-and-competition-activity-7095435743895920641-EvOx?utm_source=share

a) *Easier PPAs for everyone*

We have already seen that PPAs were employed before the 2020s by a tiny elite group of companies. Some of the leading European energy economists have seen this very small number of long-term users of PPAs as proof that PPAs have really negative characteristics, which should reduce the role that European policy can assign them.[184] Opposed to this cold academic reaction were warmer proposals by practitioners, with the support of the European electricity industry, to enlarge the role that PPAs can play.[185] Together with Compass Lexecon, 11 recommendations were made: to remove barriers to PPAs, to improve the transparency of PPA information, to support standardisation of PPA contracts and to stimulate liquidity with public entity demand.[186] We only emphasise the standardisation items. Standardisation of PPAs might reduce the transaction costs incurred by contracting parties, and reduce the risks of signing long-term contracts, by "*enabling secondary trading of contracts during their lifetime*." First, establishing "*standardised PPA contracts and products at the EU level*" would "*promote or incentivise their use.*" Second, this standardisation would make it possible to "*establish a pan-European voluntary platform to facilitate PPA trading.*" Third, related parties ("*suppliers, generators, flexibility providers, PPA aggregators*") could create "*standardised financial derivatives …* [to shape and balance] "*risks for typical wind or solar profiles in a given zone*" and offer "*balancing/shaping services … to complement output to meet PPA profiles*."

PPAs were favoured only by a tiny elite in the past because they were entirely born from individual private initiatives. Professional organisation of collective action and interaction among private parties can push this tool closer to "easy PPAs for everyone."[187]

b) Tailored PPAs for the hardcore

Another strand of PPA tailoring concentrated on reinforcing its 'price control' capability. An obvious limit to price hedging with PPAs is the typical intermittency of renewable generation. An attempt was made to remedy this and build a much stronger PPA in a 24/7 perspective (all the 8,760 hours in a standard year). This was conceived as energy procurement from onshore wind or/and solar PV with a co-located Li-ion battery (up to 4h max) for a 10MW base-load demand (87,600 MWh in a standard year).[188]

The potential 'price control' strength of this was tested on a comprehensive data set of existing markets outcomes (for both Germany and Finland) for the years 2020, 2021 and 2022. The results were very interesting. It is really up to the buyer to know what is desired, as different

[184] Natalia Fabra, 'Electricity Markets in transition: A proposal for reforming European electricity markets,' *VoxEU*, 9 December 2022, CEPR; Natalia Fabra, Karsten Neuhoff and Mar Reguant, 'The European Commission's proposal to reform electricity markets,' *VoxEU*, 9 March 2023, CEPR; Natalia Fabra, Karsten Neuhoff, Mar Reguant et al., 'Electricity market design: Views from European economists,' *Policy Insight* 120, March 2023, CEPR.

[185] Eurelectric & Compass Lexecon, "*Electricity market design. Fit for Net Zero*," 2023, Eurelectric, Brussels.

[186] Eurelectric & Compass Lexecon, op. cit., pp. 20-24.

[187] J-M Glachant, "*The Manufacturing of Markets*," op. cit 2014, shows that collective action by private parties can create more efficient frames for market interactions than a collection of absolutely solitary individuals. This is also a great part of the legacy of Ronald Coase.

[188] Eurelectric and Pexapark, '*24/7 CFE Hedging analysis,'* Eurelectric, November 2023. Various variants were tested, from only wind and only solar to mixes of wind and solar, and for the battery (none, or from 1 h to 4h; plus battery size).

guarantees of benefit targets and price protection require different arrangements for wind or/and solar PV, and for battery size and duration.
Maximum protection was delivered by a hybrid of solar and wind, and a 100% size battery for 4 hours, resulting in 90% hourly protection. Furthermore, any 100% battery option increases the revenue made from excess generation and decreases the cost of deficit generation.

It should also be noted that the size of the 'minimal' generation set is different in Germany and Finland, with 46 MW of solar (delivering 29% hourly matching) or 38.5 MW of wind (with 62% hourly matching) in Germany (both before mixing and using the battery), vs 51.8 MW of solar (31% matching) or 29.1 MW of wind (72% matching) in Finland. Clearly, tailoring PPAs according to the consuming company's strategy in a given country makes sense for typical base-load procurement (24/7).

The results regarding prices and benefits are also very interesting, but they cannot be quickly summarised as they not only result from the mix of wind and solar at stake, the size and duration of the battery and the country's potential renewable profile but also from the volatility of wholesale prices during the year (the years being 2020, 2021 and 2022). The core result is nevertheless confirmation that tailoring a PPA really makes sense for a 24/7 energy-intensive consumer.

c) Electrifying 'à la carte'

The review of the different needs and different attitudes of industries having to self-electrify in the European journey to net zero in 2050 only extends what the former sub-section ('*Tailored PPAs for the hardcore')* confirmed.

Electrification means that a given industry will invest in new equipment and processes to substitute its current use of fossil fuels with electricity. The various candidates – the sugar industry, vegetable canning, fertilisers, paper and pulp, cement, aluminium and steel, etc. – will not go the same way to the same final net zero manufacturing stage. Each industry, and sometimes each company, has particular industrial assets, technology options, yearly, weekly and daily energy consumption profiles, consumption flexibility capabilities and notification delay, requiring interesting individualisation of the contracting in two ways: what the supplier can offer; and what the consumer can promise. Furthermore, a given portfolio of industrial electrification can also mix some standardised contracts with some customised ones.

In summer 2023, France started to collect pledges from its 50 most polluting industrial sites (10% of France's total GHG emissions and 60% of French industry) to inform the thinking and working of government administrations.[189] Previously in 2022-23, the French independent authority for energy regulation, the 'CRE,' had created a working group to study the electrification of industry, and it published a report in March 2023.[190] Prof. Glachant was Vice-President of that working group with Hélène Macela-Gouin from the industrial group Schneider Electric, the world leader in automation and digitalisation of equipment and energy consumption and energy efficiency processes.[191] They concluded: 1) "*One cannot electrify*

[189] Conseil National de l'Industrie, "*Conseil national de l'industrie dédié à la planification verte*" Ministère de l'écologie, Paris, June 2023.

[190] Sébastien Ferrari, Jean-Michel Glachant and Hélène Macela-Gouin, "*L'électrification des usages*," Rapport du Groupe de Travail du Comité de Prospective de la CRE, Commission de Régulation de l'énergie, Mars 2023, Paris.

[191] Schneider Electric employs around 135,000 people, with revenue over euro 30 bn. Its market capitalisation exceeded euro 100 bn at the end of 2023.

transportation, buildings and industrial processes with the same technologies and the same equipment"; 2) "*One must rethink the entire electricity system, its technologies, its components, and its rules to make it a genuinely flexible system, more economical and safer*"; and 3) "*Furthermore, electrifying industry is a formidable challenge to the French economy, which is open on all its borders with friendly countries in the EU, and beyond on the open sea, be it North American or Asian.*"[192] Among the recommendations they made, after dialoguing with companies, associations, experts and the Regulator's teams for months, is this: it is necessary to "*Develop long-term contracts for electricity procurement (so-called PPAs) by which consumers get capacity directly from producers at a contracted and stable price.*"[193]

d) Keeping open the 'innovative fringe'

What *Electrifying 'à la carte'* has just suggested is a sub-part of a much wider economic understanding of the interplay between 'public CfDs' and 'private PPAs.'[194] A significant group of leading European energy economists led by Natalia Fabra, Karsten Neuhoff and Mar Reguant thought that the earlier draft EU electricity market reform issued by the European Commission in March 2023 promised too much by implicitly giving 'private PPAs' a kind of equal or symmetric potential role to that of 'public CfDs.'[195]

However, this alleged universal ability of CfDs to deliver the various efficiencies hoped for by Fabra and Reguant[196] and to guarantee the fourth EU policy priority defined by Neuhoff[197] has been put into question after several other researchers investigated the actual properties of CfDs in practical industrial life.[198] In fact, it is difficult to design CfDs to maintain the basic efficiency of electricity systems because they promise uniform revenue for each volume unit supplied with changing value according to the time of use (as we know, this hourly or half-hourly electricity use value can even be negative). Our purpose here is not to discuss how to design better CfDs,[199] or even near to second-best CfDs.[200] It is much simpler, much more basic.

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[192] Translation of Op. cit, pp. 6-7.

[193] Translation of Op. cit p. 56.

[194] Again, see the basics in Lena Kitzing &Co, op. cit, March 2024.

[195] Natalia Fabra, Karsten Neuhoff and Mar Reguant, op. cit, "Disagrements. However, our proposal differs from the Commission's on the best mechanisms to achieve sufficient and competitive long-term contracting. In particular, we are sceptical of the Commission's emphasis on private bilateral contracting through so-called power purchase agreements (PPAS)," p.2.

[196] Natalia Fabra & Mar Reguant, 'The energy transition: A balancing act,' op. cit 2024.

[197] Karsten Neuhoff, Jörn C. Richstei and Mats Kröger, 'Reacting to changing paradigms: How and why to reform electricity markets,' Op. cit, 2023.

[198] Again, Lena Kitzing et al., op. cit, March 2024.

[199] A new master in the design of generation-independent CfDs: David Newbery, "Efficient Renewable Electricity Support: Designing an Incentive-compatible Support Scheme," *Energy Journal*, 2023, No. 3; David Newbery, "High renewable electricity penetration: Marginal curtailment and market failure under "subsidy-free" entry,' *Energy Economics,* 2023, No. 126.

[200] In addition to what Lena Kitzing et al., op. cit. March 2024, brilliantly did; see the good work done in Germany, for example by Lion Hirth and Christoph Maurer; and Schlecht Ingmar, Maurer Christoph and Hirth Lion, "*Financial contracts for Differences*.," Leibniz Information Centre for Economics, Leibniz, 2023; also this version in *Energy Policy*: "Financial contracts for differences: the problems with conventional CfDs in electricity markets and how forward contracts can help solve them," Vol 186, March 2024. And a good one undertaken by the RAP (*Regulatory Assistance Project*): Dominic

It is to recall that 'public CfDs' will play the role that a 'mass market tool' can play in the universe of energy transition. And that economists, and public independent authorities (like competition authorities and energy regulators), will also have to protect PPAs as a private initiative tool which can help favour or support innovations where society expects private initiatives and where there are innovation processes requiring the buyer of energy to innovate, to test, to build in particular ways to change and to adapt. It is rare to see public processes, public tools and public auctioning solve all the problems in all the dimensions of industry and professional innovation waves. It would be wise to keep PPAs alive as a tool and part of EU policies as long as the decarbonisation of economies and the electrification of industries are still far from being fully arranged and obviously working.

It is refreshing to read the following signed by Jean Tirole at the Toulouse School of Economics, a Nobel laureate in modern industrial and public economics.[201] 1) "*A PPA is a contract between two private parties, while a CfD implies the state as a third-party providing insurance.*"[202] 2) Arbitrage between insurance and incentives is a typical issue with such contracts. Being private, a PPA can be adapted to the exact needs of the parties. Being regulated, a CfD will be standardised and unable to optimally combine insurance and incentives.[203] 3) It will be difficult for the state not to give state aid to the investor and not to misjudge the actual 'true cost' of generation.[204] 4) The energy transition journey we have embarked on goes with new geopolitical tensions, constraints of social acceptance of new techs and new investments, plus technological uncertainty, which all together create a significant macroeconomic risk. 5) It would be a significant mistake (and a very expensive one) to ask the state to bear all the risks, all the uncertainties and all the consequences of all the decisions taken by the various groups acting and reacting in the economy and industry along the net zero path. Direct long-term contracting between professional consumers, generators and suppliers should be kept alive and protected, to keep an open window for optimal direct risk sharing between supply and demand, the two sides of the market.[205]

General conclusion

It would be wrong to think that a particular economic tool like long term contracting with professional consumers has a robustly intrinsic universal good or wrong property established by its very nature. In the interactive frame of economics investigated since the last two decades of the twentieth century, markets, contracts, and law and regulation continually interact and together set options and results for society.

The European Union has lived in three different electricity worlds since the adoption of the first energy liberalisation package in 1996. In the first of these worlds there was *a priori* hostility at the EU level to LT contracting with professional consumers in order to protect the priority given to building the European internal market.

Scott and Monika Morawiecka, "*The search for two-sided CfD design efficiency – a Shakespearean history*," Power System Blue Print, RAP, 18 December 2023.

[201] Stefan Ambec, Claude Crampes and Jean Tirole, "*Analyse économique de l'organisation du marché de l'électricité*," Toulouse School of Economics, WP No.1484, October 2023.

[202] Our translation, Op. cit, p.4.

[203] Translation, Op. cit, p.6.

[204] Translation, Op. cit, p.7.

[205] Translation, Op. cit, p.8.

In the second European electricity world, it was not damaging to ignore the particular category of LT contracting because the core of the market fixes needed were LT contracts to enter generation (feeding the general wholesale market) and *ad hoc* LT mechanisms for capacity adequacy (delivering security).

In the third EU electricity world, which was opened by the European poly-crisis of the 2020s, the European Union cannot succeed in its deep and fast decarbonisation aim and launch its maximal industry electrification while maintaining its outdated hostility to LT contracting with professional consumers. The threat of strategic barriers blocking the decarbonisation of individual companies or the electrification of entire industries through the dominance of a few generators or suppliers has not been substantiated.[206] The former traditional 'hostility doctrine' has to pass a new 'life test,' in which long term contracting with professional consumers has much more to offer in terms of the success of core EU public policies. Accordingly, a new EU doctrine based on new facts, new realities and new reasoning has to be built.

In doing this, we energy economists more than welcome the findings of our companion co-researchers, lawyers Leigh Hancher and Guillaume Dezobry. There are three ideal core LTCs that can really help private parties deliver to European society the common good of net zero GHG:
1. One helps investment in new specific generation assets, with both parties co-investing: the proper generator and the professional consumer.
2. Another helps deep smart reciprocal risk-sharing, with both parties co-managing the typical risks and strengths (like flexibility) of generation and consumption.
3. The last one is a pure supply contract but in a new style, strongly guaranteeing the professional consumer about the cleanness of her consumption and permitting an easy certification of the 'cleanness' of her final product. Such 'certified clean products' may be decisive to open 'premium product markets' or become new standards for the standard markets. Professionals will find what works, for them and for their customers.

The real war in the EU these days is not a war with the existing electricity generators and suppliers, be they big, medium or small, privately owned or publicly owned, incumbent or innovative fringe. It is a kind of war with itself. The EU has to reinvent its industry energy fundamentals and build a strong clean industrial base. Fortunately, the EU already has a working internal market but it does not yet have these new industry fundamentals and this clean industrial base[207]. The EU's new 'Cold War economics' are really challenging today and they are so different from its successful peaceful former liberalisation process.[208]

[206] Of course, the new European political economy is influenced by some fragile players, who were hurt by the existing poly-crisis and/or the increased "supply security guarantees" set in the 2023 EU electricity market reform project required by the European Commission and the European Council. However, such protection of some outdated or fragile suppliers cannot become the entire core of new EU policymaking.

[207] Enrico Letta, "Much More than a Market. Empowering the Single Market to deliver a sustainable Future and prosperity for all Citizens". Report to the European Council, April 2024.

[208] Jean-Michel Glachant, 'Reforming the EU internal electricity market in the middle of a huge energy crisis: an absolute short-term emergency or preparation for the future?" *Working Paper*, Florence School of Regulation, 23 January 2023.

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