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## **Response to: Call for evidence on the future policy framework for the delivery of power with Carbon Capture, Usage and Storage**

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### **Uniper**

Uniper is a leading international energy company, has around 11,500 employees, and operates in more than 40 countries. The company plans for its power generation business in Europe to be carbon-neutral by 2035. Uniper's roughly 33GW of installed generation capacity make it one of the world's largest electricity producers. The company's core activities include power generation in Europe and Russia as well as global energy trading and a broad gas portfolio, which makes Uniper one of Europe's leading gas companies. In addition, Uniper is a reliable partner for communities, municipal utilities, and industrial enterprises for planning and implementing innovative, lower-carbon solutions on their decarbonization journey. Uniper is a hydrogen pioneer, is active worldwide along the entire hydrogen value chain, and is conducting projects to make hydrogen a mainstay of the energy supply.

The company is based in Düsseldorf and is one of Germany's largest energy supply companies. Uniper is also Europe's third-largest producer of zero-carbon energy.

In the UK, Uniper operates a flexible generation portfolio of seven power stations capable of powering around six million homes, and a fast-cycle gas storage facility.

### **Our Key Points**

- The DPA, which is already a competitive process, is needed for power CCUS projects and will be throughout the 2020s.
- On maturity, power CCUS should be eligible to compete in the Capacity Market (CM).
- The limited CO<sub>2</sub> T&S infrastructure is a key barrier to power CCUS projects, and support is needed for shipped solutions as well as pipeline.

We have responded to the questions most relevant to our business.

### **Question Responses**



## **Chapter 1 - Evolution of the power CCUS business model**

**1. What is your view on the continued need for a business model to bring forward power CCUS in the 2020s? If you see the need for continued use of a business model what is your view on the continued use of the DPA as that business model?**

There is a continued need for the DPA. A negotiated DPA is the right approach until power CCUS is a mature technology which can compete in the CM.

**2. If the DPA were to continue to be used as a business model to support power CCUS in the 2020s, how could it be evolved to be used as part of a competitive allocation process in the 2020s? What key changes, if any, would need to be made? Please include your views on the elements on which projects should compete and your views on which elements would need to be consistent across competing projects and the implications of those decisions.**

The DPA process is already a competitive process; the Track 1 cluster process received more DPA applications than have been shortlisted. It's too early to consider potential developments to the DPA as it has not yet been implemented and only very limited learning has been delivered by the Track 1 process so far. Track 2 should be launched imminently to bring forward further power CCUS projects into operation. The experience of operating a portfolio of projects throughout the late 2020s will enable an informed review of the business model.

**3. Are there alternatives to the DPA that the Government should consider for use in the 2020s? How could these alternatives work better with a competitive allocation process than the DPA?**

No. Government should focus on getting the first few projects up and running and should then look at how to bring mature power CCUS projects into the CM.

**4. What key principles should be considered for business model evolution into the 2030s?**

It is premature to be considering business model evolution in the 2030s. The contracts for the first projects are not yet concluded. We need to deliver sufficient power CCUS projects to drive technical maturity and deliver the necessary capacity to contribute to securing a largely decarbonised power sector. Once the technology has reached market maturity, power CCUS should be eligible to compete in the CM. The Government should complete Track 1 and launch Track 2 of the CCUS cluster competition, and set out a visible funding timeline that will bring forward investment and bring CCUS power plants into operation.

## **Chapter 2 - Introducing competitive allocation in the 2020s**

**5. What should an ideal competitive allocation process look like when introduced? As part of your answer, you should provide views on what the strategic aims of any competitive allocation should be, competitive allocation design and the institutional framework design. We would also welcome information and views on any existing schemes which you believe we could utilise or adapt.**



The focus needs to be on negotiating DPAs, bringing forward more investment and accelerating growth. Granting just one or two DPA agreements by 2030 will not bring the technology to maturity or deliver adequate learning to enable review of the allocation framework. Nor will it deliver sufficient ramp up to meet the ambition of a largely decarbonised power system by 2035 on the way to net zero by 2050.

In addition, DPA allocation should be streamlined with clear, regular and predictable timelines for both funding windows and competition and allocation process. The Government should adhere to the timetable which it sets. Allocation and evaluation criteria should be transparent and quantified, so projects understand the basis on which they are competing. The development of CO<sub>2</sub> transport and storage infrastructure, including shipped solutions, is urgently needed to support this.

**6. With regards to a first competitive allocation process in the 2020s what projects do you think should compete and when in the 2020s could this first competitive allocation process take place from? Do you have any views of how a competitive allocation process for power CCUS can best be incorporated into, or aligned with, the Cluster Sequencing Process? In your answer you should consider the points raised in the ‘managing interactions across the CCUS chain’ section above.**

The current Cluster Sequencing Process is a competitive allocation, and we would like to see the next round, Track 2, launched before the end of 2022. The extent of CO<sub>2</sub> Transport and Storage networks will remain very limited for many years yet, and alternative non pipeline solutions are as yet undeveloped, which remains a barrier. However, as a result of progress through Track 1 negotiations, it should be possible to further detail the DPA and reduce the range of conditions subject to bilateral negotiation. Ultimately there should be a clear path for mature power CCUS to compete in the CM.

**7. Through our competitive allocation design how can we ensure that value for money is achieved? What mechanisms could be used and how should they be implemented? Your answer should pay particular attention to the points raised in the last paragraph of the ‘aspects of competitive allocation design’ section.**

Competition and value for money are driven by having a large number of project bids submitted, and transparent, quantified selection criteria. The existing mechanism, of competitive allocation of negotiated support, should be used until CCUS power reaches maturity and can take part in the CM. This allows the Government to take a portfolio approach to project selection, ensuring we maximise learning to move CCUS power to maturity as soon as possible.



### Chapter 3 - Managing barriers to deployment

- 8. What are the barriers to future power CCUS deployment in the 2020s? and  
9. Who is best positioned to manage each barrier, and how can parties support the best placed stakeholder to do so?**

#	Barrier	Key stakeholder(s) who should manage the barrier	Management actions
1	The limited number and extent of CO <sub>2</sub> T&S networks	BEIS	Set out a plan and timetable to fund, allocate and develop Track 2 CO <sub>2</sub> clusters and associated T&S networks
2	The lack of development of alternative non pipeline (such as shipped) transport solutions	BEIS & Industry Stakeholders	Develop alternative solutions and how they will interact with low carbon business models including the DPA
3	The uncertainty caused by the lack of detail in the nascent CO <sub>2</sub> Network Codes	BEIS, Ofgem & Industry Stakeholders	Develop the CO <sub>2</sub> Network Codes and establish more detail on the charging regime
4	Lack of support for development funding	BEIS	Introduce a fund for power CCUS development (similar to the Net Zero Hydrogen Fund)

### Chapter 4 - Realising the economic benefits

- 13. How do we best ensure that economic benefits are realised at a regional level where power CCUS plants and businesses are located?**

Economic benefits will be realised at a regional level by developing further CCUS clusters beyond Track 2, developing non pipeline solutions to support locations which are away from the clusters, and awarding DPAs to a portfolio of projects.

- 14. Across the whole CCUS sector we anticipate that 50,000 jobs could be supported. How can future policy best support businesses to develop a diverse sector that provides opportunities for all?**

At Uniper we have incorporated Diversity, Equity and Inclusion into our strategy based on valuing people, and engaging employees and leaders to promote DEI. We adapt tools and processes to build an inclusive and fair working environment in which everyone feels welcome. And we work with our partners to develop sustainable relationships based on common values for DEI.

Requiring submissions through the cluster sequencing process to set out a Diversity, Equity and Inclusion plan, would keep this in focus. The process could further require companies involved in submitted projects to have in place a DEI strategy of their own. BEIS could provide a summary of plans and / or set up best practice sharing.

### Chapter 5 - Future plans in the GB power CCUS sector



**15. Our CB6 targets could require as much as 10GW of power CCUS by 2035. In general, what do you think the trajectory for power CCUS deployment should look like to meet our CB6 targets in the most cost-effective manner? Do you think the current pipeline is developing at the scale and pace necessary to meet our CB6 targets? Please provide evidence to substantiate your views.**

The trajectory for power CCUS deployment needs to look steeper in the immediate future. The current pipeline is not developing at the pace and scale necessary to meet CB6 targets. Supporting just one or two projects will not be sufficient to drive technical maturity or installation of sufficient capacity to move to a reliable net zero system.

**16. What are your views on the composition of the current and future pipeline? For example, what is the anticipated locational make-up of future power CCUS deployment across the UK and what mix of power CCUS projects do you expect to come forward?**

The location of power CCUS plant will be influenced by available infrastructure. Early projects are likely to locate in proximity to CCUS clusters which have CO<sub>2</sub> transport and storage infrastructure and access to depleted gas fields. Bringing forward shipped solutions will open up more options for low carbon dispatchable power across the electricity network, which could help with balancing.

**17. Are there any specific power CCUS projects that you are planning for the late 2020s and into the 2030s that you would like to make us aware of at this stage?**

Uniper's strategy includes the aim to make its power generation business in Europe carbon-neutral by 2035. In the UK, a power CCUS solution is under consideration for our Connah's Quay and Grain sites.

Connah's Quay is close to Liverpool Bay and well positioned to support decarbonisation of industry in North Wales. Oil and gas has been extracted from fields in Liverpool Bay for decades, with Uniper processing gas extracted from the sites at its Connah's Quay power station. Once those fields are depleted, the infrastructure can be repurposed to transport and store CO<sub>2</sub>.

At Grain we are exploring shipped CO<sub>2</sub> solutions to help decarbonise power supply to London and the South East of England. The Isle of Grain is an industrialised area, and the existing infrastructure lends itself well to supporting a first shipped CO<sub>2</sub> transport and storage solution: LNG terminal, Jetties; and electricity and gas infrastructure. Proving the shipped concept would open up a wider range of CO<sub>2</sub> capture projects across the UK. It would also open the potential for CO<sub>2</sub> captured by EU emitters to be transported to UK and storage provided as a service.

**18. Are there any particular technology innovations that government should be made aware of? What support might these innovations require and what potential do they have to contribute further to the cost-effective delivery of our decarbonisation ambitions?**

Shipped CO<sub>2</sub> transport solutions have the potential to broaden the UK portfolio of low carbon dispatchable power generators and will be essential for emitters not located close to CCUS clusters. The Government must ensure that projects with shipped solutions are eligible for future DPA allocation rounds, and that CO<sub>2</sub> pipeline and storage operators provide access for shipped volumes of CO<sub>2</sub>.



## **Chapter 6 - Creating suitable market arrangements for power CCUS**

### **19. Do you agree with the continuation of the mid-merit role we envisage for power CCUS relative**

The role of power CCUS will be heavily dependent on the mix and availability of the generation portfolio at any given time. Power CCUS has the capability to run as baseload as well as to run more flexibly. It should be noted that a mid-merit role would require the plant to start up and shutdown relatively frequently, and that high CO<sub>2</sub> capture rates in this transient state (as opposed to steady output at rated capacity) may be more difficult to achieve.

### **20. Noting the need to secure best value and to avoid overcompensation, what should the relationship between the CM and the DPA (or indeed an alternative power CCUS business model) be in the future? What changes would be required to facilitate such a relationship?**

We agree that plants with an existing multi-year CM agreement should be able to transition to a DPA as a route to decarbonisation. Generators should not be able to hold a CM agreement and a DPA for the same CMU.

There are potential changes needed to facilitate a transition from CM agreement to DPA. Any penalties for terminating a CM agreement early should be reviewed in the transition to DPA, with some conditions to ensure that the transition will not undermine security of supply. A phased conversion of power station capacity should be possible and enabled by transition arrangements. In common with other low carbon business models, there may be a need to include some milestone dates and time allowances for conversion projects and start dates for the DPA.

Any new multi-year CM agreements issued in the 2023 and subsequent auctions should not be eligible to convert to a DPA as allowing to do so could incentivise new build unabated gas projects to bid unrealistically low in the CM with a view that this could put them at an advantage in future DPA competitions. This would put security of supply at risk as this kind of speculative bid would not ensure reliable capacity is available, and could lead to under delivery or termination, with the corresponding need to buy replacement capacity.

Once power CCUS reaches maturity, it should be eligible to compete in the CM.

### **21. Over what time period do you believe power CCUS could move from requiring direct support under a competitive allocation system to that of a market-based solution in direct competition**

The timeframe depends on the funding pipeline – which needs to expand to bring forward more projects and investment. Once mature, power CCUS would be able to compete in the CM. This will be driven by the award of DPAs to realise a portfolio of power CCUS projects by 2030. If the Government only supports one or two power CCUS projects in this timeframe, it won't be enough to drive technical maturity or installation of the targeted capacity.