Consultation Response
28 February 2022

EXECUTIVE OVERVIEW OF MAIN THEMES

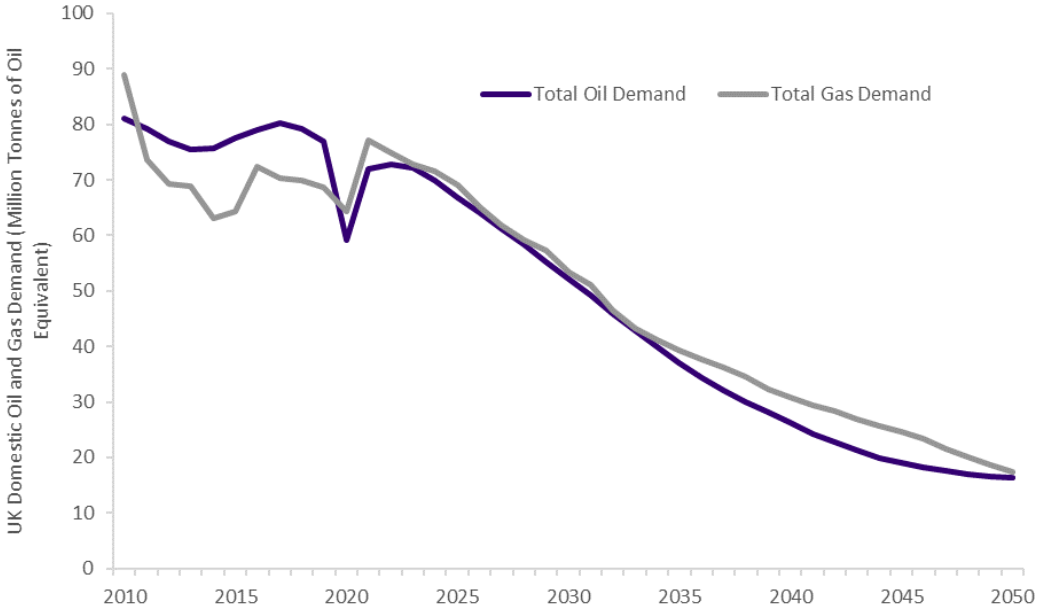
Offshore Energies UK is the leading trade body for the UK's integrating offshore energies industry. Our membership includes over 400 organisations with an interest in offshore oil, gas, carbon capture and storage, hydrogen, and wind. From operators to the supply chain and across the lifecycle from production to decommissioning, they are safely providing cleaner fuel, power, and products to the UK. Working together with our members, we are a driving force supporting the UK in ensuring security of energy supply while helping to meet its net zero ambitions. We work on behalf of the sector and our members to inform understanding with facts, evidence, and data, engage on a range of key issues and support the broader value of this industry in a changing energy landscape.

OEUK welcomes the opportunity to provide a response to the BEIS consultation on the incorporation of a climate compatibility Checkpoint ("the Checkpoint") in future oil and gas licensing rounds. This Checkpoint will play an important role in demonstrating that ongoing exploration and production for oil and gas is consistent with the UK's statutory requirement to achieve net zero by 2050 and should align with the OGA Strategy of maximising economic recovery and net zero emissions targets. An appropriately designed Checkpoint should provide clarity and certainty regarding the exploration and development of oil and gas resources on the UK Continental Shelf (UKCS) and allow government and industry to responsibly deliver the energy transition whilst protecting our security of supply.

OEUK, on behalf of our members have provided full answers to the consultation questions in the response that follows but offer the following summary of key themes.

The Checkpoint should support continued oil and gas exploration to meet ongoing UK demand

The Government's independent Climate Change Committee (the CCC) is clear that the UK will continue to require oil and gas to meet domestic demand for decades to come.



Source: Climate Change Committee Balanced Pathway

The CCC's work predicts that half of the UK's energy requirements between now and 2050 will still be met by oil and gas, reflected also in the UK Government's Net Zero Strategy Delivery Pathway which shows oil and gas still meeting 64% of UK energy needs between 2022 and 2037.

The CCC also recognises the quality of emissions performance on the UKCS where "publicly available estimates of the emissions footprint of producing both oil and gas in the UK currently are lower than the global average, particularly for gas"[1]. Given this, the UK should ensure that it continues to meet as much of domestic demand as possible from UK resources and as cleanly as possible, whist benefitting the wider economy.

Exploration has a key role to play. At present, nearly three quarters of the UK's energy currently comes from oil and gas, with UKCS production equivalent to around 70 per cent of UK demand in 2020. The UK is a mature basin and in their 2021 reserves and resources report, the Oil and Gas Authority warned that without further exploration the UK faces a cliff edge in production decline and increased reliance on imports.

The Checkpoint needs to provide stability and confidence for investors in the North Sea

Investor confidence is fragile. In 2021 OEUK had visibility of around £21 billion of potential capital within exploration and production (E&P) plans between 2021-25, which would unlock 2.7 billion boe over the production period. At the same time, less than one-third (£6.6 billion) had been fully

[1] Reference: https://www.theccc.org.uk/publication/letter-climate-compatibility-of-new-oil-and-gas-fields/

committed by companies reflecting ongoing uncertainties. If no further investment is committed by companies, the UK would have to increase imported oil and gas to supplement the demand gap, damaging the economy and reducing energy security.

A stable and clear regulatory environment is required to attract investment in exploration and subsequent development of discovered resources. Over the previous 20 years, the type of company leading exploration has changed considerably, with currently smaller privately held explorers making up between one third to half of recent licence activity. These companies play a significant role in early-stage exploration, appraisal, and development, helping to prolong the life of offshore infrastructure – it is therefore vital that the Checkpoint design principles also provide stability and confidence for these organisations in order to ensure the success of the UKCS basin.

Alignment with the North Sea Transition Deal is key

The North Sea Transition Deal (NSTD), signed in March 2021, has ambitious milestones for the offshore sector to support the government's objective of reaching Net Zero, for example challenging production emission reduction targets (10% by 2025, 25% in 2027 and 50% by 2030) and enabling CCUS at scale. The Climate Compatibility Checkpoint should be aligned with the NSTD and designed in such a way that it supports long-term investment in the basin, positively contributing to energy security and the energy transition.

A Checkpoint in isolation will not unlock investment

A successful Checkpoint will balance climate leadership with maintaining a strong economy and robust energy security. It should be evidence based, transparent, straight forward, and practicable and only apply to future licences granted by the Secretary of State. It must not conflict with the OGA strategy in relation to other licensing decisions.

However, it will need to be part of a package of measures to unlock investment – no matter how robust and predictable, a climate compatibility Checkpoint cannot in isolation give investors the confidence to move forward with projects. Companies need confidence to invest over the full life cycle of E&P activity on the UKCS as part of a wider more integrated approach to energy.

Ongoing Exploration provides wider benefits to the energy economy

Due recognition in the consultation should be given to the broader economic benefits to society arising from ongoing exploration and production activity on the UKCS. The industry currently provides employment for 118,400 (both directly and indirectly) and supports the employment of an additional 77,500 across the UK. Each £1 billion of expenditure by the oil and gas industry sustained 8000 indirect jobs and a further 7000 induced jobs across the UK economy. The sector provides a based load of work for many high technology companies across the supply chain and a pool of skilled labour that underpins the energy transition that is now well underway, to the benefit of the UK economy. If this significant contribution to the UK economy is lost, this makes the transition to net zero even more of a challenge at a macro-economic level.

The UK Oil and Gas sector is supporting new technologies required for net zero

The revenues of the UK's offshore oil and gas activities are increasingly being reinvested into offshore wind, CCUS and Hydrogen and decarbonisation of offshore production, building on the competitive advantage offered by our North Sea heritage. Curtailing of exploration and development activity will

see resources and skills move outside the UK to the detriment of the wider economy and achieving net zero.

Ongoing dialogue

Finally, OEUK and its members would welcome continued dialogue surrounding the finalisation and structure of the Checkpoint, its timeliness, and frequency to ensure the Checkpoint is developed with the same mindset as the NSTD. OEUK seeks to maintain the strong, world leading alignment between industry and government that can be recognised as transforming UK energy supply as part of a just transition. In doing so it will maintain energy security, protect skills and jobs, and avoid risking an increase in the offshoring of UK emissions.

In summary

The regulator, the OGA points towards the requirement for continued exploration and development across the UKCS to help meet the UK's ongoing demand. In particular, the 2021 OGA report on reserves and resources[2] highlights the emerging shortfalls in prospects and reserves. A premature end to licencing is inconsistent with the expected transition towards net zero and would result in higher levels of imports and a higher emissions footprint; it would damage employment and constrain the pace of investment needed to deliver Net Zero and reduce the supplies of skilled labour available to support longer term development of the UK energy market.

A clear, quantifiable and robust Checkpoint would support a just transition, meet as much of our domestic energy demand from UK oil and gas as possible and make a significant economic contribution, which will help contribute to meeting the predicted cost of achieving net zero by 2050. The Climate Compatibility Checkpoints should therefore be simple and avoid administrative burdens on government and industry. The length of validity of the Checkpoint should be aligned with the exploration & production life cycle and allow several bid rounds to take place after any Checkpoint; in doing so it should ensure that any resources discovered are then developable within the requirements of the OGA's strategy.

A stable supply of domestic oil and gas production is key to an orderly transition. Flexible power generation, such as natural gas, provides the stability to add further renewables to the grid. There is global consensus to recognise gas in taxonomy as a transition energy. Increasing domestic gas production will displace LNG import, more than halving the resulting Green House Gas (GHG) emissions in the supply of that gas according to an OGA study. Furthermore, the NSTD is promoting the development of CCUS technology that will further reduce the full scope emissions from the use of gas. Decarbonised gas will play a key role in providing reserves and flexibility into the Net Zero energy system.

Over 50 years, the oil and gas industry has made a considerable contribution to the UK economy through over £375bn in production taxes alone, while also developing a robust, internationally active supply chain and creating highly skill jobs. Via Roadmap 2035 and now the NSTD, the industry is actively embracing Net Zero. This is reflected in wider change across the energy sector. Offshore Energies UK is evolving its scope to include CCUS, hydrogen and offshore wind in support these changes. The industry is investing in Net Zero technology and projects. However, to sustain and

[2] Reference: OGA, 2020 UK oil and gas reserves and resources report, September 2020

underpin these investments, the industry needs to continue to invest in its historic core competencies and in particular exploration to maintain the project flows.

The Checkpoint must be workable and support investor confidence across the exploration and subsequent development of oil and gas resources. As the Chancellor and the Governor of Bank of England have highlighted, the current situation in energy markets underlines the need for continued investment in the UKCS. OEUK and its members would welcome continued dialogue surrounding the finalisation and structure of the Checkpoint, its timeliness, and frequency to ensure the Checkpoint is developed with the same mindset as the world leading NSTD. OEUK seeks strong alignment between industry and government that can be recognised as supporting UK energy supply through a just transition while maintaining energy security, protecting skills and jobs without risking increasing or offshoring UK emissions.

OVERALL QUESTIONS ON THE CHECKPOINT

Question 1: Are these the right principles? Are there others that should be included?

OEUK agrees with the proposal that the design of the Checkpoint should satisfy the principles of being evidence-based, transparent and simple. While industry welcomes the inclusion of a Checkpoint in future BEIS licensing decisions, it is vital that these Checkpoints ensure the licensing rounds are compatible with the UK's climate change ambitions, while maintaining investor confidence in the UKCS. OEUK therefore also feel that the Checkpoint design should satisfy the following additional principles:

1. Be straight forward and practicable;
2. Provide stability and confidence for investors in the North Sea;
3. Only apply to future licences granted by the Secretary of State;
4. Not conflict with the OGA strategy in relation to other licensing decisions;
5. Align with Strategic Environmental Assessment (SEA) 5-year frequency;
6. Reflect the progress being made towards emissions reduction targets as outlined in the North Sea Transition Deal (NSTD) in delivering a net zero basin;
7. Reference import/export criteria as a guide and not a hard limit;
8. Reference the UK Comparative Emission Performance to ensure a fair transition in the North Sea Basin; and
9. Be introduced in good time and before Autumn 2022.

We refer to our letter to BEIS dated 25 June 2021 [to be included within Appendix]

Question 2: Are there other things that the Checkpoint could take into consideration? If yes, please provide proposals for how these could be considered objectively, as well as data sources that could be used to support the inclusion of such a consideration (the more information that is provided here the better). You may wish to read the rest of the document before answering this question.

OEUK have been working with an economic consultancy, NERA, providing an assessment of the economic implications of different production pathways and have provided an interim version of this alongside our submission, ref Appendix 1. We intend to publish a final version of this report by the end of March 2022.

The NERA study concludes that for oil "*there are unlikely to be major consumption or price impacts caused by changes in UKCS production on global oil markets*". Given these circumstances, additional UK oil production would be unlikely to be detrimental to global emissions as our emissions are already below average in the industry and validated as such. Likewise additional gas production from the UKCS is likely to displace LNG imports which have a significantly more detrimental environmental impact because of the associated transport and processing requirements.

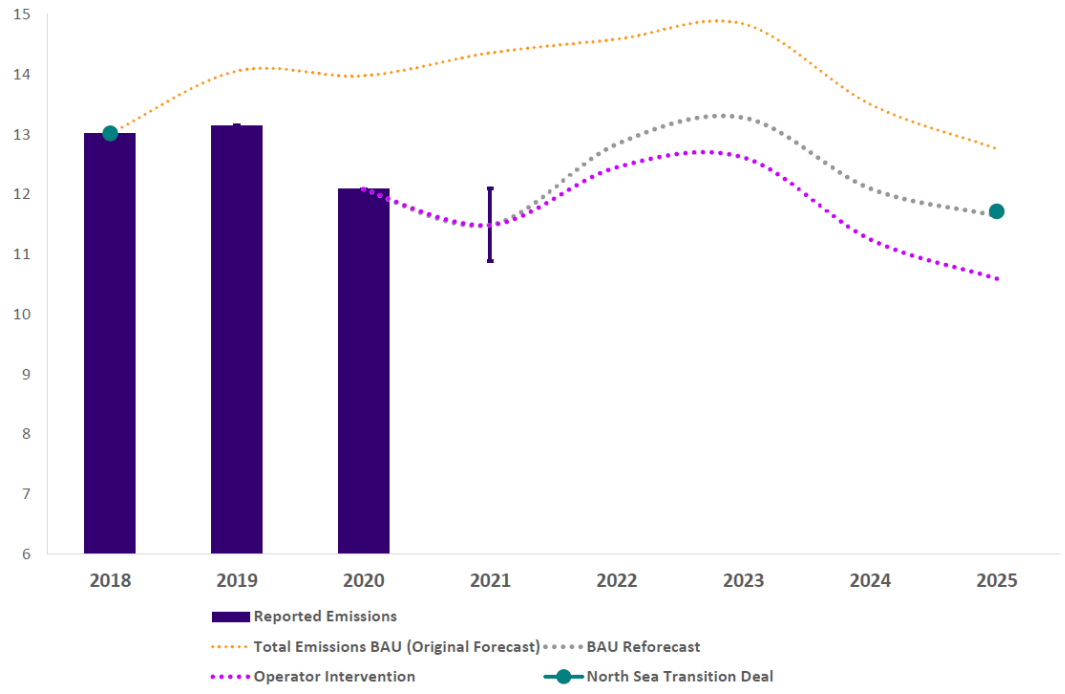
POTENTIAL TEST 1: REDUCTIONS IN OPERATIONAL GREENHOUSE GAS EMISSIONS FROM THE SECTOR VS. COMMITMENTS.

General Comments

Test 1 should be part of the Checkpoint as described but with additional recommendations and adaptations. In particular, Test 1 should be consistent with the NSTD with future Checkpoints and subsequent tests aligned to the targets agreed in the NSTD. As such, the Checkpoint must recognise that emission reduction targets are based on decadal milestones with interim targets of 10% reduction in 2025 and 25 % reduction in 2027.

Question 3: Should this test be part of the Checkpoint as described? If no, please describe how it should be adapted to make it suitable.

It is essential that Test 1 recognises that comparing historical and future emissions trajectories could adversely distort decision making for future licencing rounds, which may subsequently undermine investor confidence. This is the case where, subject to external factors, short-term emissions for the UKCS marginally increase (i.e., for the period 2022 – 2023, shown in the graphic below), however, out to 2025 emissions are forecasted to fall in line with reduction targets. Indeed, the basin is likely to experience a short-term rise in emissions as described based on current OEUK forecasts.



Test 1 must also recognise that in delivering the agreed targets under the NSTD, both government and Industry are together striving to deliver challenging outcomes. The deal recognises both parties have a role to play to ensure collective action delivers supply decarbonisation at the required pace. Consideration must be given to future Checkpoints recognising the role Government will have to play in meeting such targets:

1. Early-stage funding for electrification
2. Delivering support for offshore electrification
3. Cost effective offshore electricity, recognising the economics of electrification
4. Regulatory and legislative barriers to whole system / offshore cooperation.

In doing so the Checkpoint must provide contingencies for and mitigation measures under the proposed test to ensure the industry is adequately equipped and not unfairly penalised if targets are not met. This is particularly pertinent for the 2027 and 2030 targets which are dependent on the widespread electrification of oil and gas assets in the basin. To achieve these targets, we will require both Government and industry to work collectively from 2022 – 2025 to ensure the economic viability of electrification. In addition to this, there must be consideration for uncontrollable factors which may inadvertently impact the future trajectory of the emissions reduction pathways.

While the trajectory shows industry will meet or exceed the 10 per cent reduction by 2025, continued reductions thereafter are also dependent on further oil and gas assets being developed for Test 1 to be successful. Emissions levels are based on installations currently in operation, of which there is the expectation that around 30 installations and FPSO's are due to cease production between 2021-25. Assets due to cease production have a tendency to have a higher emissions intensity comparative to new fields coming online. Therefore, Test 1 should take into account the fact that the act of running a licencing round will naturally lead to reduced emissions since new assets brought on stream as a result of successful exploration and appraisal will replace those high emitting assets being decommissioned.

Whilst the premise of using historic emissions data in theory is sound, in practice if Test 1 is to consider historic performance, attention should be given to the external factors which would help explain why a given year had an increase in or decrease in emissions. Take 2020 as an example: Whilst companies were taking steps to pro-actively reduce their scope 1 emissions, OEUK estimates that around half of the emissions decline was the result of reduced production and maintenance activity caused by the Covid-19 pandemic. 2020 also saw some of the lowest drilling activity rates in the history of the basin, coupled with fewer aviation flights and lower throughput at terminals, a reduction in emissions was to be expected.

Additionally, OEUK analysis suggests operators are beginning to realise near-term emission reduction through continuous improvements. These measures include reduced flaring and venting, streamlining operations and investing in targeted plant modifications, all while maintaining and improving on an 80 per cent production efficiency target. This means the UKCS is emitting fewer GHG emissions per barrel of oil and gas produced. The average carbon intensity (expressed as total production divided by total carbon emissions) from 2014-19 was around 23 kg CO2 per barrel of oil equivalent (boe) produced and is now around 21 kg/boe in 2020.

Historic emissions performance could provide an indication as to how the basin is likely to perform in the short-term. However, they are unable to take into consideration any future operational improvements and step change in action, including operational investments in emissions reduction strategies. Therefore, any future Checkpoints should take into consideration the basin's potential to reduce future emissions; the OGA's Emissions Monitoring Report should provide the assurance for this alongside industry analysis.

Equally, any Checkpoint and consideration of Test 1 as well as future data should also consider that long term emissions reduction will require significant investments from duty holders. This is particularly relevant when attention is given to oil and gas terminal processing facilities which suggests that the introduction of significant plant modifications e.g. power generation, hydrogen and CCUS development etc, is only viable when a plant has planned shutdown and maintenance times. A transparent and evidence-based Checkpoint should afford consideration of this.

Regarding data sources, the use of NAEI data is not the preferred methodology, due to potential data limitations, instead other datasets such as the Emissions Trading Scheme (ETS) and Environmental Emissions Monitoring System (EEMS) should be used as they provide the required scope boundaries.

Question 4: What kind of grace margin should be included?

The above considerations suggest that, as part of the test, a grace or trend period of several years should be used to determine performance. A grace period of at least three years as a minimum should be required on top of the five year or decadal milestones aligned to the NSTD, as any test result would require at least several years to implement significant change and remove any short-term adjustments of less than two-years. It may also be worthwhile for BEIS to consider a quantitative grace margin of 1-2% on the absolute level of UKCS emissions.

POTENTIAL TEST 2: REDUCTIONS IN OPERATIONAL GREENHOUSE GAS EMISSIONS FROM THE SECTOR BENCHMARKED INTERNATIONALLY

Question 5: Should this test be part of the Checkpoint as described? If no, please *describe how it should be adapted to make it suitable.*

Emissions are a global issue and should be considered in such a context. OEUK is supportive of benchmarking the basin's performance as a global average against a fully representative sample of producing basins. The benchmarking should include transportation emission, methane and other GHG emissions. The peer group should have reporting standards similar to those of the UK or the data should be adjusted to reflect any omissions. The benchmarking should consider use of a common framework for gas and oil. Passing the criteria for either oil or gas should be considered as a pass.

The UKCS basin should be compared with basins of similar reporting standards and maturity. The benchmarking criteria should be identical among the peer group with similar reporting scrutiny, emission types covered, source and assurance processes. OEUK will recommend that transportation footprint should be included in the benchmark.

The benchmarking should include all quantifiable GHG emissions, as methane is a major GHG contributor with a significant impact on emission intensity. For example, onshore US Carbon intensity is double the GHG intensity when including methane (source Rystad Energy). If methane is not included in the benchmarking, venting is likely to be incentivised leading to an overall carbon footprint increase. The UK Oil and Gas industry committed in 2021 to an ambitious Methane Action Plan[3], the Checkpoint should be designed in such a way that it rewards this initiative.

Question 6: What data sources could be used in the application of such a test?

There are a variety of international benchmarks and data providers available for the Government to consider. A range of different sources should be used.

OEUK recommend that the transportation footprint of oil and gas imports should be included in the benchmark. OEUK also recommend that the results of any such benchmarking are suitably qualified where there is a lack of transparency in reporting standards or lack of independent audit, as there is a greater risk of sample bias arising from such countries underreporting emissions. A simple averaging of existing benchmarks will not be sufficient to account for the disparity in data reliability. The benchmarking should only include the UK's offshore installations as terminals receive a mix of indigenous and imported hydrocarbons. Therefore, it is not suitable to include them in a benchmarking exercise.

The data used should, as far as possible, be measured and verified emissions data. For example, OEUK would not recommend using the IEA methane tracker as this tool is immature and based on a

[3] Reference: OEUK, Methane Action Plan 2021

calibration from North America which does not represent the level of progress on decarbonisation in the UK or other regions.

Question 7: Do you agree with the proposal for benchmarking oil and gas separately, and in slightly different ways as described?

The majority (52%) of assets in the UKCS produced both oil and gas in 2020[4]. Since exploration is aimed at finding either oil or gas or a combination of both, it is almost impossible to target a product type. Likewise, it is difficult to attribute emissions at facilities to either oil or gas where both are produced. The benchmarking of oil and gas production emissions separately is likely to be difficult to reliably achieve clear outcomes as it can be difficult to distinguish between future oil and gas characteristics.

Question 8: Do you have a specific suggestion for which countries the UK sector should be benchmarked against for oil and gas respectively?

The UKCS basin should be compared against a fully representative sample including but not limited to those with similar conditions, reporting standards and maturity. For example, carbon intensity varies during the life of a field and basin and whether production is on or offshore. The benchmarking criteria should be identical among the peer group with similar reporting scrutiny, emission types covered, source and assurance processes. OEUK recommends that the transportation footprint for delivering gas to market should be included in the benchmark.

As discussed above in Question 5, many countries do not properly report and verify their emission level, particularly, methane. Caution should be applied to the use of such data sources. However, only using data points from countries that report emissions would bias the distribution of the peer group and potentially place UK at an undue disadvantage. Misinterpretation of such data could ultimately encourage the UK to increase imports from high emitting countries with poor accounting credentials.

Finally, emissions performance will be influenced by the wider energy context. Decarbonisation of offshore production in Norway has been heavily subsidised, in particular through offshore platform electrification. Furthermore, Norway is already producing the lowest carbon intensive electricity in Europe. So even if the UKCS were to fully electrify, the carbon intensity of the UK will remain above Norway due to scope 2 contributions via the electricity it would receive from the UK grid.

Question 9: What position should the UK achieve relative to other countries' benchmarks in order for this test to be passed (e.g. above average, top quartile)?

It seems a reasonable expectation that the UK should be seen to perform better than the average in the relevant peer group for either oil, gas, or combined, whilst also taking the inclusion of transport emissions and other relevant GHG sources into account. Production from long-life assets should also

[4] Reference: OGA, Asset Stewardship

be competitive against longer term trends in decarbonisation. Anomalous years such as 2020 when the impact of COVID-19 could bias the results should also be treated with care.

Emissions intensity is a dynamic metric that should look at ongoing trends, not just current performance. Provided the production of a marginal barrel in the UK has a lower emissions intensity than its peers, then there is a case for its production given the beneficial reduction in overall global emissions. Unintended reduction in UKCS production will also lead to further carbon leakage to jurisdictions that are less focussed on long term emissions reduction.

POTENTIAL TEST 3: STATUS OF THE UK AS A NET IMPORTER OR EXPORTER OF OIL AND GAS

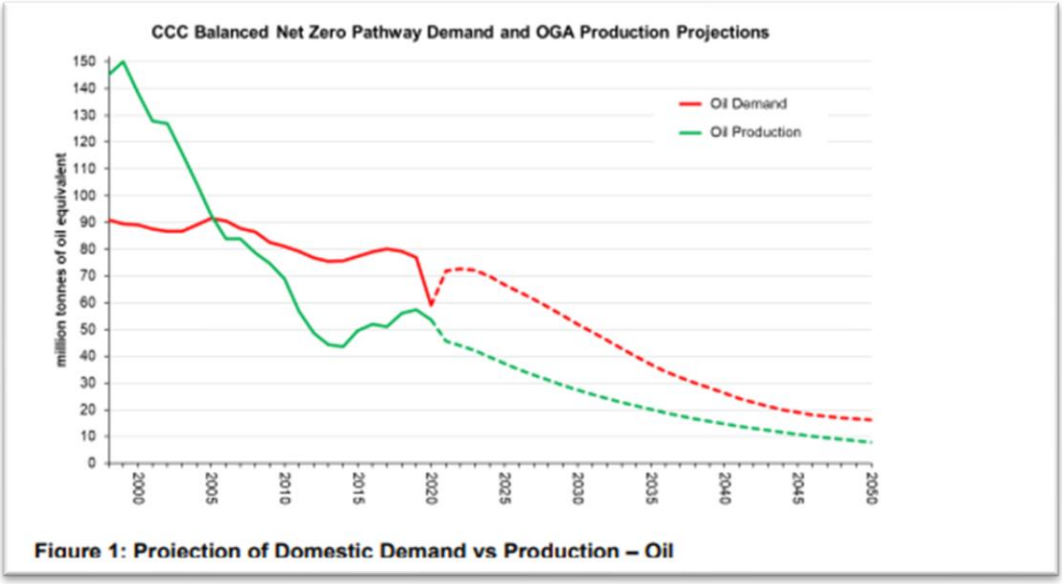


Figure 1: Projection of Domestic Demand vs Production – Oil

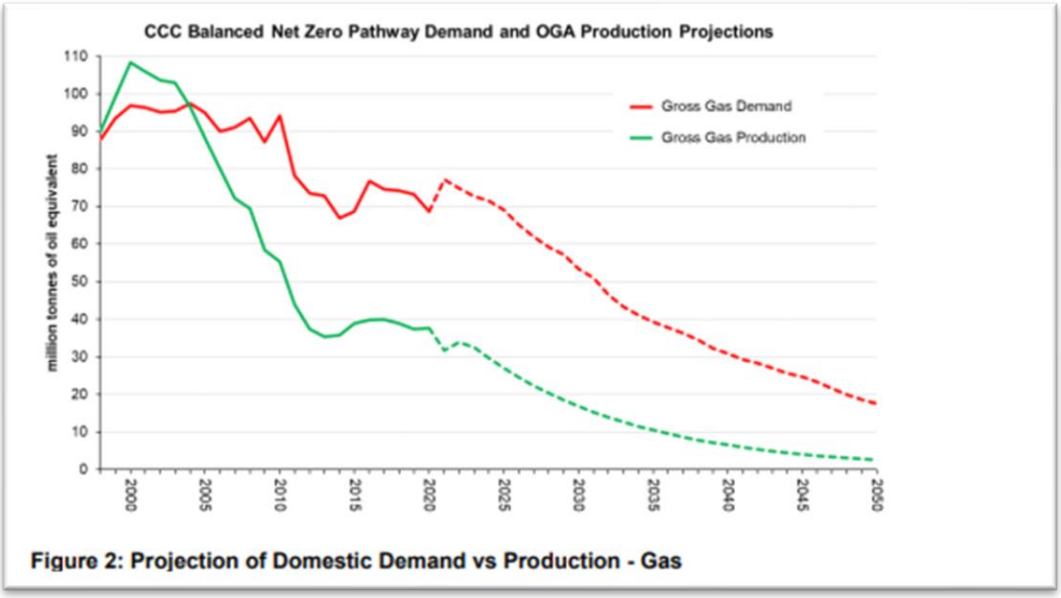


Figure 2: Projection of Domestic Demand vs Production - Gas

Question 10: Should this test be part of the Checkpoint as described? If no, please describe how it should be adapted to make it suitable.

OEUK are of the opinion that "Potential Test 3" should remain as part of the Checkpoint. Domestic production of oil and gas, whilst minimising emissions, must be prioritised over an increased reliance on imported energy. The impacts of increased import reliance have been highlighted in recent months,

UK gas prices reached record highs in 4Q2021, whilst oil prices are currently sitting at their highest since 2014. However, there will need to be further clarification over the circumstances to which this test would be applied. Recognition should be given to the unlikely scenario where the UK switches from being a net importer to a net exporter of oil and/or gas. These concerns will be covered at greater length during OEUK's responses to questions 12 & 13.

If future production of UK oil and gas were to have a lower carbon intensity than other international suppliers, then OEUK see no issue with the UK being a net exporter of oil and/or gas, as this would result in lowering global emissions. If this case were to arise then potential future licensing and production should not be stopped on this condition alone, as doing so has the potential to increase global emissions and widen the global production gap as discussed in potential test 6.

As of 2020, more than half of the fields on the UKCS produce a mix of both oil and gas. For this reason OEUK agree with the proposals in the consultation that the most suitable approach would be to measure oil and gas together.

Question 11: If the UK were to become a net exporter of oil and gas in the future for any reason, would this present a problem? If so, why?

Almost all long-term forecasts of future production and consumption in the UK indicate that the UKCS will remain a net importer of both oil and gas through to 2050, making this a very unlikely scenario. Yet unusual circumstances may still prevail, the Covid-19 pandemic for example, resulted in the UK becoming a net exporter on a temporary (monthly) basis. Another example was seen in Q3 2021 where the UK served as a transit route for LNG and Norwegian pipeline imports into the wider EU market. In such circumstances the Checkpoint needs to take market dynamics into consideration.

OEUK would recommend a practice in which the monitored import/export period covers a multiple month/year lag to rule out any short-term fluctuations in the UK's supply or demand for oi and/or gas impacting the basin's ability to operate in the future. In addition, in the remote circumstance that the UK were to become a long-term net exporter, then as long as the basin has a lower carbon intensity than the international average it should not be viewed as a negative outcome.

Question 12: Do you have views on the forward time period that should be used when projecting whether the UK could become a net exporter of either oil or gas?

A suitable time period should be considered, such as the average forecasted life expectancy of licenced assets due to come online across the next 10/15 years. A long-term view of the time period will allow for BEIS to take into consideration the UK's changing position as a net importer/exporter of oil and gas over the course of the average asset's lifetime.

The graphics shown in the consultation indicate that the forecasts being used are "CCC Balanced Net Zero Pathway Demand and OGA Production Projections", and OEUK would appreciate understanding if these are the planned forecasts to be used in the proposed test and when/how will these forecasts be updated?

Question 13: Do you have views on whether it would be permissible for the UK to remain a net exporter of oil, while being a net importer of gas?

It should be permissible for the UK to be both a net exporter of oil and a net importer of gas and vice versa, as the majority of assets producing in the UKCS in 2020 produced both oil and gas. When looking at the location of exploration wells drilled in the past year this issue becomes ever more pressing, as every well drilled in 2021 was located in the Central North Sea, an area that is synonymous with producing both oil and gas. As such to make it not possible for an asset to achieve a licence on the basis that it will produce oil as well as gas, in a circumstance where one of the two is net exporting, could present a multitude of issues in the supply of the net-imported commodity. In addition to this it is possible that exploration may find a different Hydrocarbon reservoir characteristics than intended, as such this would make distinguishing oil and gas separately difficult in any Checkpoint.

POTENTIAL TEST 4: SECTOR PROGRESS IN SUPPORTING ENERGY TRANSITION TECHNOLOGIES

General Comments

OEUK is open to the concept of this test being an element of the Checkpoint. CCUS and Hydrogen in particular are necessary technologies for net zero to be reached by the UK and at global level. Through the NSTD, oil and gas companies are committed to supporting investment and playing an active part in delivery alongside other investors. Many technologies are adaptable and then transferrable into the emerging energy opportunities, e.g., exploration as part of the development of carbon storage. However, this needs to be a qualitative assessment. A binary or threshold type decision-making process would not be appropriate.

Question 14: Should this test be part of the Checkpoint as described? If no, please describe how it should be adapted to make it suitable

This test should reflect the interdependencies with policy development in other sectors of the economy and the evolution of the regulatory frameworks envisaged in the NSTD. The test should take account of the need for Government to deliver business models and a range of other measures to underpin these new sectors, including the necessary legislative and regulatory requirements. Existing regulators (Ofgem, OPRED and HSE) all have an important role for delivery of new technologies.

It should also be an aggregated assessment without any implication that an individual company participating in a Licencing Round, or in subsequently putting forward a Field Development Plan, would be required to develop other technologies. It should also be acknowledged that the companies and business units involved in developing new technologies may often be separate profit centres or even legal entities to the oil and gas businesses, even with a larger Group that might contain a range of different business units and ventures.

Question 15: Do you have any specific suggestions on how progress could be measured?

Energy transition projects are very often large-scale projects and/or programmes that will go through a variety of development stages. These, however, can be tracked effectively and this is part of the governance structure of the NSTD. Passing through these stages very often requires significant up-front expenditure which could be measured and monitored to some extent.

Overall, this element of the test lends itself better to a continuous assessment rather than a one-off "test" at a particular point in time. The starting point should be that the test would be expected to be "passed" unless clear evidence of slow progress was identified, and clearly attributable to the conduct of the companies involved in the projects.

The test will need to recognise that some of the energy transition technologies as stated in the NSTD are a number of years into the future before significant emissions reduction will begin. Using CCUS as

an example, the UK Government have said their ambition is to establish four industrial clusters by 2030 capturing 20-30Mt of carbon per year whereas we would expect a number of Licencing Rounds before this date. This test should not be expected to extend the technologies beyond those outlined in the NSTD.

Question 16: Are there other targets or pathways for energy transition technologies that should be used?

The application of this test should be consistent with the NSTD and the revised OGA Strategy and therefore must concentrate of CCUS and Hydrogen technologies. Obviously, there are many other technologies that exist but not all are within scope for the oil and gas sector, and many are downstream or in adjacent sectors.

In general, for this test to work, Government should avoid making it overcomplicated and unpredictable. The NSTD already provides a framework for Government, regulators, and the industry to reach a common understanding of the expected contribution of the sector to the energy transition. In addition, there should not be a direct requirement for those companies participating in Licencing Rounds to individually be involved in new technologies.

Question 17: Would this be a fair test given that the delivery of the above targets is only in the control of a small number of operators?

CCUS and Hydrogen production must be revenue generating in their own right with the capital being allocated having appropriate remuneration. New technologies are an opportunity for both operator businesses and supply chain companies. They should not be presented as a cost of doing business for an oil and gas operator. As noted above CCUS and Hydrogen developers will often be separate legal entities without necessarily having any direct link with O&G operators or exploration companies. Provided that this is understood the element of “fairness” should be maintained. It should also be noted that all operators are required to communicate substantial non-financial climate related information to their investors. This may allow them to represent other technologies outside the NSTD.

As the industry is being assessed as a whole, we do not see an issue with the number of operators initially involved in CCUS & Hydrogen projects so long as the investment is progressive and achieving the desired targets.

POTENTIAL TEST 5: CONSIDERATION OF INTERNATIONAL SCOPE 3 EMISSIONS

General Comments

OEUK believe that the measurement and monitoring of scope 3 emissions should not be included as a test within the Climate Compatibility Checkpoint and that assessments over emissions performance should be limited to the scope of the North Sea Transition Deal. The Scope 1-3 framework is largely relevant to *any* company communicating with their investors rather than being a regulatory tool specific to the oil and gas sector. It is therefore not suitable for inclusion in this framework.

Question 18: How can Scope 3 emissions be measured and monitored in a comparable way?

Scope 3 emissions are linked to the use of the end product and not the production of the hydrocarbons. Upstream producers on the UKCS have no control over this end use, with scope 3 emissions being driven by many other sectors and government policy. It should also be recognised that UK supply will only meet a proportion of UK demand and has to be considered in that context. Tracking end use is especially difficult for oil production given the more global nature of the market than gas. Oil and gas are also widely used for a range of non-combustion related purposes.

More widely, the most effective way of reducing scope 3 emissions is through current well developed UK energy policies, namely - Nationally Defined Contributions (NDCs), Carbon Budgets, and initiatives to reduce hydrocarbon demand. Restrictions on licensing and supply will have no impact on these scope 3 emissions.

Designing a meaningful test based on Scope 3 emissions is not possible or relevant. There is no internationally agreed methodology for the tracking and reporting of scope 3 emissions and therefore it would not be possible to implement an evidence based, transparent and simple test as part of the Climate Compatibility Checkpoint.

Question 19: How would a test that takes into account Scope 3 emissions be designed? Please detail your proposed methodology and state sources of data and projections that would be required.

UKCS production is used for a variety of purposes spanning petrochemicals, plastics, pharmaceuticals and fuels, with a significant proportion of UKCS production is used outside the UK, due to the nature of international markets. As a result of this, data which accurately tracks the end use of UKCS production, and associated scope 3 emissions, is not available and therefore it would not be possible to monitor this in an evidence based, transparent and simple manner.

POTENTIAL TEST 6: CONSIDERATION OF THE GLOBAL PRODUCTION GAP

General Comments

OEUK accept the need to take measures to reduce global consumption of oil and gas, however, the rate at which global demand will need to reduce on the path to net zero is driven by a multitude of factors and would not be influenced by reducing supply from the UKCS.

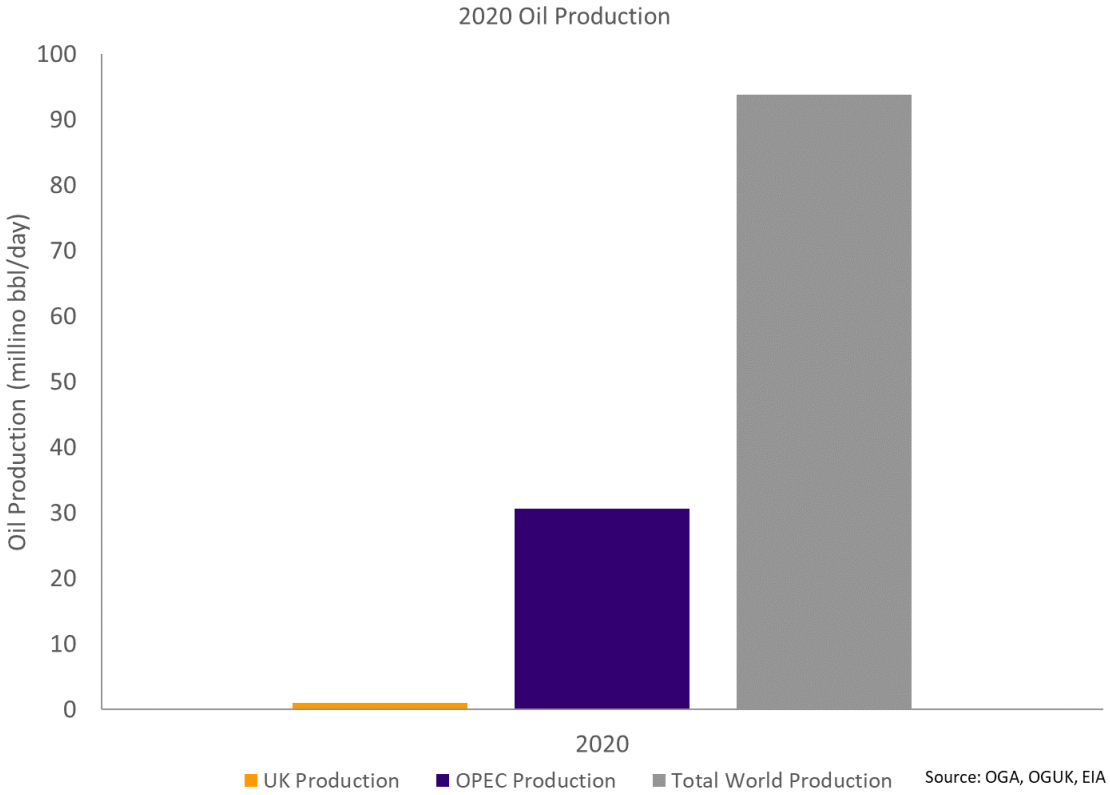
OEUK does not consider this test to be an effective means of reducing UK or global emissions and therefore would not support test 6 being included within the Checkpoint. We are of the opinion that other tests proposed for inclusion in the Checkpoint are far more effective means of reducing global emissions and consequently would render this proposed test redundant e.g. ensuring that emissions from UK production are below the international average will actively help to reduce total global production emissions, whereas restricting or ending UK production will only increase supply from countries with a higher carbon footprint.

Question 20 How would a test that considers the world's "production gap" be designed? Please detail your proposed methodology and state sources of data and projections that would be required

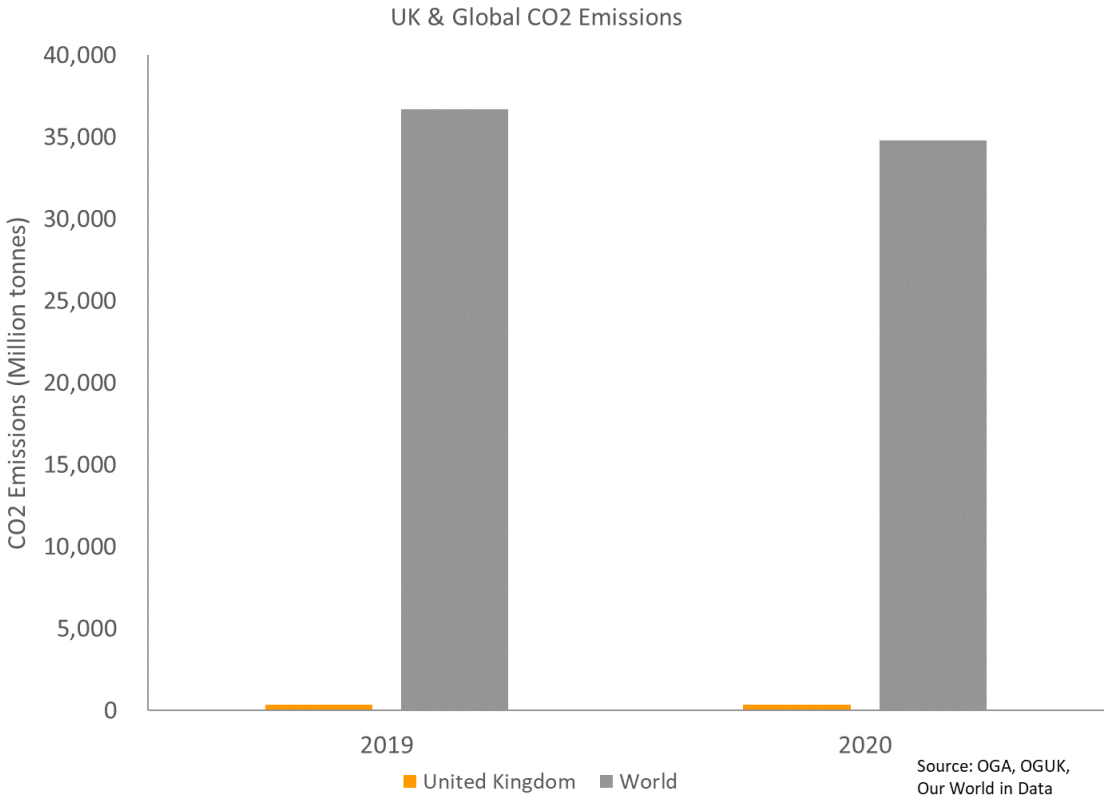
UK Oil and Gas production will not necessarily add to any future global "production gap". At present UK Oil and Gas production represents less than 1% of global Oil and Gas production – a rate that would be absorbed by other nations (e.g. by OPEC + increasing production / reducing their production restrictions to balance the market). In addition, it is anticipated that increased UK production will not offset the rate of decommissioning. UK production will likely decline at a rate much faster than global demand declines, therefore we are likely to see a proportionate reduction in the UK's contribution to global supply in future years.

Likewise, ending UK production will not alter the UK's consumption of oil and gas, it would only increase the UK's reliance on imports to meet our energy needs and further damage our ability to reinvest in emerging low carbon and renewable energy opportunities. The consequences of an increased reliance on imports have been well demonstrated by events seen in the international gas market in recent months, with the NBP gas price consistently reaching record highs. This will result in a significant and potentially lasting impact on end users.

Another issue that surrounds reducing/ending UK Oil and Gas production is the impact that this would have on the UK's ability to reduce wider emissions through a loss of capability and investment in technologies including CCUS and hydrogen. In particular, a reduction in the UK's gas feedstock for hydrogen production could be impacted heavily, damaging a vital energy source in the UK's pursuit of net zero.



Source: OGA, OGUK, EIA



Source: OGA, OGUK, Our World in Data

LEGAL STATUS, DURATION, SCOPE AND DECISION MAKING PROCESS FOR THE CHECKPOINT

Question 21: Do you have views on whether it would be advantageous to put the Checkpoint on a statutory footing if such an opportunity arose in future?

Without full sight of the final design of the Checkpoint and the period of any validity, it is difficult to answer this question. However, in response to this consultation, OEUK do not consider there to be any advantage to placing the Checkpoint on a statutory footing. It could run the risk of over complicating the licencing round process, hinder decision making, slow investment and reduce the attractiveness of the UKCS. It is noted that a formal consultation would be required if a proposal was made to place the Checkpoint on a statutory footing.

It would however be beneficial to have a formal process through which Government confirms it's view that the Checkpoint has been met and its expectations with respect to future licensing rounds to be held over the period covered. The existing North Sea Transition Forum could be an appropriate governance mechanism for this process.

Question 22: Do you have views on how long the outcome of a Checkpoint should be considered valid for?

The duration should be sufficient to provide stability and confidence for investors of exploration and development activities in the North Sea, as current investor confidence is fragile. In 2021 OEUK had visibility of around £21 billion of potential capital within exploration and production (E&P) plans between 2021-25, unlocking 2.7 billion boe over the production period. Less than one-third (£6.6 billion) has been fully committed by companies. If no further investment is committed by companies, the UK would have to increase imported oil and gas to supplement the demand gap, damaging the economy and reducing energy security.

A stable and clear regulatory environment is required to attract investment in exploration and subsequent development of discovered resources. Over the last 20 years, the type of company leading exploration has changed considerably, currently smaller privately held explorers make up between one third to half of recent licence activity. These companies play a significant role in early-stage exploration, appraisal, and development, helping to prolong the life of offshore infrastructure – it is therefore vital that the duration of the Checkpoint validity provides stability and confidence for these organisations in order to preserve the success of the UKCS basin.

Furthermore, OEUK consider that the duration of the Checkpoint should be such that it aligns with the emissions reduction targets outlined in the NSTD, with the UK/EU Carbon Budgets and with the Strategic Environmental Assessment (SEA) 5-year frequency. If introduced as a precursor to each licensing round the Checkpoint would reduce certainty in the UKCS, making it increasingly more difficult for OEUK members to secure investment for new fields/assets. OEUK therefore considers that the Checkpoint should be valid for an extended period, and that this period should be at least 5 years.

Question 23: Should the Checkpoint outcome apply to potential future onshore licensing rounds within England?

OEUK agrees that the Checkpoint outcome should also apply to future onshore licensing rounds.

Question 24: Do you agree that 'out of round' should be subject to the existing regulatory process and effective net zero test, rather than the climate compatibility Checkpoint?

OEUK agrees that 'out of round' licensing should continue to be subject to the existing regulatory process and effective net zero test, rather than the climate compatibility Checkpoint. Out of round license awards are about facilitating the use of existing acreage and play an important role in the development of fields and discoveries under existing licences. Introducing a climate compatibility assessment ahead of any out of round licence decisions risks over complicating the out of round licencing round process, hindering decision making, slowing investment, and reducing the attractiveness of the UKC

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Appendix A: NERA Economic Assessment of UK Production Pathways (Extract)

Economic Assessment of UK Production Pathways

Prepared for Offshore Energies UK

28 February 2022

INTERIM DRAFT REPORT

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Executive Summary

Our Assignment

Offshore Energies UK (OEUK) has retained NERA Economic Consulting to conduct an economic assessment of different future production pathways for oil and gas resources on the UK Continental Shelf (UKCS). This interim draft of the Executive Summary is particularly focused on the consultation by the Department for Business, Energy & Industrial Strategy (BEIS) on the "Climate Compatibility Checkpoint". A final report will be published by the end of March 2022.

Background

The UK's upstream oil and gas production industry is a vital source for meeting the country's current and future demand for primary oils ("oil") and natural gas ("gas"), as well as making a substantial contribution to the UK economy. Despite the history since the 1970s of the UK producing the vast majority of its oil and gas needs from the North Sea, production has been declining substantially in recent years, leaving the UK increasingly reliant on imports from global markets.

- While domestic demand for crude oil has almost halved over the last two decades due to factors such as reductions in UK refinery capacity, UK demand for refined products has remained comparatively stable (with the exception of the impact of the pandemic in 2020), which has increased import dependency for refined products.
- UK production of natural gas has also fallen significantly since its peak in 2000. Despite some demand reductions due to energy efficiency in buildings, growth in renewable power generation, and reductions in industrial demand, this decline has resulted in substantial increases in import dependency.

In view of the UK's ambition to reach "net zero" by 2050, further reductions in domestic oil and gas demand are likely, e.g., due to the anticipated phasing out of petroleum products in transport and the decarbonisation of domestic heating. The Climate Change Committee (CCC), in its work on the "Sixth Carbon Budget", has forecast that UK demand for oil and gas in 2035 will be around half the 2019 level, and will have halved again by 2050 (thereby only leaving a quarter of today's demand). Similar conclusions for gas specifically, albeit predicting less rapid demand reduction in the medium term to 2030, can be derived from National Grid's "Future Energy Scenarios".

Naturally, projections of future UK oil and gas production levels take the outlook for domestic demand into account. The Oil and Gas Authority's (OGA) latest forecast of future UK production makes explicit reference to the CCC's demand projections from the Sixth Carbon Budget. Nonetheless, the OGA forecast implies increasing import dependency of the UK over time. Similar conclusions have been reached by the CCC and National Grid, which have also analysed the future evolution of import dependency (focusing on gas).

Importantly, the OGA foresees a role for *new* oil and gas developments in its production forecasts. However, there is an on-going policy debate in the UK around future oil and gas exploration and development activities and their consistency with the net zero target. The UK government has not found continued licensing of oil and gas is inherently incompatible with the UK's climate objectives, but is continuing to consult on its future stance towards new oil and gas production.

BEIS has recently launched a consultation on a proposed "Climate Compatibility Checkpoint". The purpose of the Checkpoint is to assess the compatibility of future oil and gas licensing with the UK's climate objectives every time a new licensing round is being contemplated (where a licence confers the right to explore for oil and gas in a given area, without automatically giving the right to develop infrastructure or extract oil and gas commercially, consent to which must be obtained separately). .

Scope of our Assessment

The main question that we have investigated concerns the economic impacts associated with different levels of new oil and gas project development in the UK. As noted above, the OGA's future production forecast assumes some new oil and gas developments will be allowed to proceed in the future. However, the assessment considers the possibility that production could be higher or lower than the OGA has forecast:

On the one hand we consider the possibility of lower production, resulting from a hypothetical ban on oil and gas project development in the UK. Such a ban would in all likelihood lead to a further reduction of UK output compared to OGA's production forecast, which foresees output contributions from new projects commissioning over the coming years. Thus, in essence, we have investigated the impacts from a permanent reduction in the oil and gas supply originating from the UK. We refer to this as the "no new production" (NNP) scenario.

However, our assessment also provides insight into the likely effects of an increase in production above the levels envisaged by the OGA. For example, there may be some scope for the UK oil and gas industry to maintain production at a level above the OGA's forecast. This would imply a higher level of exploration and development than currently envisaged by the OGA in response to, for example, higher commodity prices. However, it should be noted that this scenario would still imply progressive reductions in UK production from pre-pandemic levels.

In performing this review, we define the economic impacts to include the impact on global greenhouse gas (GHG) emissions, as well as the consequences for the economic output and employment generated by the sector within the UK. In discussing emissions impacts, we adhere to the standard breakdown of emissions into "Scope 1", "Scope 2" and "Scope 3", where Scope 1 refers to the direct emissions associated with a company's operations, Scope 2 to indirect emissions resulting from a company's energy use and Scope 3 to all emissions occurring along the value chain in which a company operates that are neither classifiable as Scope 1 nor 2.

OEUK has also requested that we review – in light of our analysis of these impacts from changes in UKCS production – the tests proposed by BEIS on the Climate Compatibility Checkpoint. Specifically, we comment on the different "Potential Tests" for assessing compatibility with the UK's climate objectives that BEIS has put forward.

The Impacts of Changes in UKCS Production on Oil and Gas Market Outcomes

If global markets for oil and gas resources were competitive, a reduction in the volumes of supply offered into the market is likely to result in an increase in the market-clearing price and/or reduced consumption of the good traded. Hence, lower output from the UKCS would tend to reduce global consumption in response to higher prices, while higher output would increase global consumption in response to reduced prices needed to clear the market with higher levels of output.

However, the extent of changes in price and consumption due to changes in UK supply depend on how responsive demand in the global market is to price changes ("price elasticities of demand"), and how other suppliers of gas and oil react to changes in UK production. For example, reduced supply from the UK would have the following effects, depending on the prevailing market structure:

Reduced supply from the UK would have *little impact* on global consumption of oil and gas (and hence GHG emissions) if:

- Demand is very "price inelastic", i.e., unresponsive to price changes, so a policy measure to reduce supply from the UKCS – even if it affects market price outcomes – would not affect demand materially; or
- Lower production from the UKCS does not affect the price outcome in the market because the UKCS is not significant enough in global terms to affect the "marginal" or price setting resource in the global oil and gas markets. If the price-setting resource would not change as a result of changes in UK production, nor would market prices, total market demand or GHGs.

Whereas, reduced supply from the UK would tend to *reduce* global consumption of oil and gas (and hence GHG emissions) if:

- Supply volumes from other parts of the world are sensitive to changes in market prices, and demand is also "price elastic", i.e., responsive to price changes. If these conditions hold, less supply from the UKCS would increase prices, reducing total market demand and GHGs.

We have therefore reviewed literature and published information on the structure of oil and gas markets – both in the UK and globally – to identify the likely consequences of changes in production from the UKCS under the assumption of competitive markets.

In addition, we have also considered that oil and gas markets do not adhere to the theoretical framework of a "perfectly competitive" market. In this case, the price and consumption impacts from changes in UKCS production will depend on the strategic responses of other players in global oil and gas markets to the reduction in supply.

Economic theory suggests that suppliers with market power have an incentive to increase their output in response to another supplier reducing output, but such increases would not be expected to *fully* offset the initial reduction, meaning that some drop in consumption and higher prices would be expected in this case.

Also, when assessing the GHG emissions impacts from changes in UKCS production, we have considered that significant amounts of emissions arising both from the oil and gas production process itself and from downstream consumption of the product. Thus, the emissions impact from reduced UK production (e.g., in the NNP scenario) can be broken down into two components:

Firstly, the downstream emissions savings from any reduced consumption, which as explained above may result from changes in total market demand following changes in UK output; and

Secondly, the changes in upstream and midstream emissions that result from replacing UK suppliers with those foreign competitors that can be expected to close the gap in the market left by the reduced UK supply. We assess this effect by comparing the emissions intensities of upstream production from different regions, including changes in midstream / transport emissions that are likely to arise from the UK producing more or less resources locally and displacing imports.

Likely Effects of Changes in UKCS Production on Global and Regional Oil Markets

Crude oil is a globally traded commodity, and the UK is a small producer by global standards accounting for just 1.2 per cent of global oil production in 2020. The UK crude oil market is also highly integrated with this wider global market, with 80 per cent of UKCS production being exported, and a similar amount being imported each year. Hence, while UKCS crude oil production is approximately sufficient to meet demand for crude oil in the UK, trade flows are substantial.

Refineries in the UK and the wider NW European market buy locally produced crude and import crude oil to produce refined products, which are then sold both in NW Europe and exported globally. While the UK is a net importer of refined products – suggesting overall refinery capacity is less than market demand in the UK – the UK is a net importer of some refined oil products (e.g. diesel) and a net exporter of others (e.g. petroleum spirit). In 2020, the UK met around 47 per cent of refined product demand from imports.

Market evidence shows that the global market for crude oil is extremely integrated internationally, which is demonstrated by the low price spreads and high price correlations observed across regions for many years. This high price correlation across regions and the fact the UK is highly integrated with global oil markets shows that changes in UKCS crude oil production would likely only affect market outcomes (i.e., prices and total market demand) to the extent such supply changes affect global market conditions.

Our assessment is that there are unlikely to be major consumption or price impacts caused by changes in UKCS production on global oil markets:

We would expect lower UKCS production to result in more production from other countries. If the supply curve for oil exhibits a relatively "flat" part at the margin, i.e., the marginal source of supply is able to increase output without significant changes in its cost per unit, then changes in UK oil production would displace production elsewhere, without materially altering the market clearing price. We would expect to see a similar outcome if changes in UKCS production were compensated for by offsetting changes in output by OPEC countries seeking to target particular price outcomes. In this case – irrespective of the price elasticity of demand discussed below – we would expect to see little impact on market price outcomes (and hence global production) from changes in UK production. In fact, the market evidence we have reviewed suggests that this is likely to be the case: OPEC has a track record of seeking to influence market price outcomes through changes in member countries' production quotas, which may offset changes in output from the UK.

Irrespective of the supply response, the economic literature we have reviewed shows that demand for oil and refined products is generally "price inelastic". As such, less supply from the UKCS (even if there were little supply response by other producers) would have little effect on market demand as prices would rise to ration the reduced volume of supply. Hence, there would be little effect on global consumption and Scope 3 GHG emissions.

Moreover, already in the short to medium run, it is likely that the use of oil products will be subject to increasing regulation in many parts of the world, such that decisions over whether to consume oil will be driven more by policies that restrict and discourage its use, and less by an economic trade-off against the wholesale prices of competing fuels. As a result, we would expect the already inelastic demands for oil observed historically to become even more price inelastic over time due to the effects of decarbonisation policies.

Hence, the literature and evidence we have reviewed suggests global oil use is unlikely to be materially affected by changes in supply from the UK which would be extremely small in global terms, and any change in supply in the UK is highly likely to be offset by changes in supply elsewhere. Hence, we would expect there to be little or no improvement in Scope 3 emissions from the UK adopting a "no new resources" policy.

The impact on Scope 1 and Scope 2 emissions depends on the emissions intensities of new, incremental production facilities in the UK – i.e., facilities which could be developed or not, depending on the production scenario – and the international competing sources of supply at the margin. The evidence we have reviewed suggests that changes in supply in Europe would likely result in changes in either North American production – which is likely to be the marginal source of global supply – or changes in production from OPEC to the extent it adjusts members' production quotas to achieve its targeted market outcomes.

Hence, we cannot definitively conclude on how Scope 1 and Scope 2 emissions compare between the UK and the other sources of supply that would be displaced by higher UK crude oil production, because there is a wide range of possible other countries from reductions in UKCS production would be replaced. However, in respect of future developments in the UK,

a key advantage of permitting increased UKCS production is that the UK government can regulate and observe the carbon intensity of new field developments, whereas there is a risk that imported oil could come (on the margin) from counties with highly polluting oil production activities.

Likely Effects of Changes in UKCS Production on Global and Regional Gas Markets

While the UKCS produced more than enough gas to meet demand in the UK until the early 2000s, production from the UKCS has declined materially, and the UK is by now a net importer of gas, which it sources primarily from Norway (by pipeline) and the global LNG market. This import dependency is increasing, with LNG now being viewed as the "marginal" source of supply serving UK demand. As a result, the competing source of supply that can be expected to replace UK output if the UK government decides to restrict production is imported LNG.

Unlike crude oil, gas markets around the regions of the world are less integrated, with different supply-demand drivers across regions and different market price outcomes. The UK market is closely integrated into the wider European market, as demonstrated by the high correlation and narrow price spreads between the British National Balancing Point (NBP) hub and European hubs like the Dutch Title Transfer Facility (TTF). In the wider European gas market, global LNG markets provide the marginal source of supply (especially in Western Europe), while in Central and Eastern Europe, supply is dominated by imports from Russia.

Since the emergence of global LNG markets in the last 20 years, the European market is also increasingly linked to the Asian gas market, where LNG producers can sell at prices determined mainly by the prices of long-term oil-indexed gas contracts. As such, European gas prices remain correlated with the crude oil price because LNG suppliers can arbitrage price differences between Europe and Asia, while European prices are also heavily influenced by the volume of natural gas exported from Russia by pipelines. Where the volumes required from the LNG market increase beyond expected levels, sharper increases can occur as different regions compete for limited "spot" cargoes.

While LNG supply is determined by global market pricing, the volume of supply available from Russia – as the on-going crisis surrounding the Ukraine and the debate about the development of Nordstream 2 pipeline from Russia to Germany (as well as reduction of European dependence on Russian gas more generally) illustrates – is determined by a combination of market and geopolitical factors. As a consequence, European gas prices have reached unprecedented levels over recent months.

In summary, the European gas market has become a "price taker" in a global sense, with prices determined by a combination of oil-indexed gas prices, and supply from Russia or in the spot LNG market. Any supply from within Europe, notably from the dwindling North Sea resources, are "inframarginal", meaning that they are sold at the market clearing price determined by other factors. In this sense, the European gas market stands in stark contrast to the North American market. US gas prices are now more than 400 per cent lower than

those at the NBP[5] as a result of the wide-spread development of shale resources in North America within a highly competitive upstream gas market, by contrast to Europe's continued reliance on Russia and global LNG markets.

Hence, similar to our assessment of the economic impacts of different levels of crude oil production, we have drawn the following conclusions regarding the effects of changes in UK policy to reduce or increase UKCS gas production:

First, as explained above, gas market prices in Europe are both extremely high at present and determined mainly by crude oil prices (which affects supply of LNG to Europe), and the market expectations of the supply available from Russia. It is theoretically possible that more supply from the UK could reduce gas prices in NW Europe and provide some relief to the high costs currently being faced by gas and electricity consumers. However, due to the small size of the UK market and the fact imports will still be required into the UK gas market under any credible local production scenario, changes in output from the UKCS would probably have little impact on European gas market pricing.

If gas prices in Europe are insensitive to UKCS production decisions, there is also very unlikely to be any change in consumption or Scope 3 emissions caused by increasing gas output from the UKCS. However, even if there were a price reduction, evidence from published literature suggests that demand for gas is "price inelastic". As for oil, long-term demand for gas is also likely to become less price elastic over time as demand for natural gas is increasingly determined by government policy to support and less by price.

Given the likely absence of a consumption impact from changes in UKCS production, the assessment of emissions impacts boils down (as for crude oil) to comparing upstream and midstream emissions intensities between the UK and the sources of supply that more UK production would displace. In the case of gas, the market evidence suggests that more local production would offset LNG imports, meaning that Scope 1 and 2 emissions would increase materially if the UK pursues a no new resources policy, due to the high carbon impacts associated with LNG liquefaction, transportation and regasification. Analysis from the OGA suggests in fact that imported LNG is almost 2.7 times more carbon intensive (in CO2e terms) that gas extracted from the UKCS.[6]

And, to the extent that more European production displaces Russian imports, this would also likely reduce GHGs through a reduction in methane emissions. Anecdotal evidence suggests that methane leakage is frequent during the transportation of gas through the Russian pipeline network. Indeed, Russia was not among the 90 countries which committed to reduce materially its methane emissions at the COP26 summit.

Summary of Assessment of the Proposed Climate Compatibility Checkpoint

[5] On 15 February 2022, prices at the US Henry Hub were 4.7 US$/MMBtu and prices at the NBP were 24.75 US$/MMBtu. Source: Refinitiv Datastream.

[6] According to the OGA, while imported LNG has an average carbon intensity of 59 kgCO2e/boe, gas extracted from the UKCS has an average carbon intensity of 22 kgCO2e/boe. Source: OGA (May 2020), Natural gas carbon footprint analysis. Link: Oil and Gas Authority: Natural gas carbon footprint analysis - Net zero benchmarking and analysis - The move to
net zero (ogauthority.co.uk).

In light of the analysis summarised above, our assessment of the different "Potential tests" included in the proposed Climate Compatibility Checkpoint is as follows:

Potential test 1 (Reductions in operational greenhouse gas emissions from the sector vs. commitments): According to BEIS, this test would make the award of new licences to the sector contingent on the sector's delivery on the commitments it has agreed with the UK government to reduce upstream emissions, by looking at both historical data and emissions projections. In essence, it holds the sector to account for meeting its commitments to reduce emissions, and is therefore likely to be helpful in meeting decarbonisation targets. Moreover, attainment of emissions reduction targets will likely require the sector to continue to reduce its emissions intensity, given expected future production pathways, including output from new projects – a consideration that is also (directly) addressed by Potential test 2 below.

Potential test 2 (Reductions in operational greenhouse gas emissions from the sector benchmarked internationally): According to BEIS, this test would benchmark the UK oil and gas sector against other global producers in terms of emissions intensity. The test would be passed as long as the UK remained at a certain ranking with respect to this benchmark. As emphasised above, continuing to outperform "competing" sources of supply abroad in terms of emissions intensity will be key for the sector's emissions impact to remain positive on balance. At the same time, some questions remain as to how exactly this test should be applied:

In applying this test for oil, we agree with BEIS in concluding that UK emissions performance would need to be benchmarked against a global average. This is because, as also noted above, the open and global market for oil makes it difficult to keep track of the origins of trade flows and the marginal source of supply displaced by more UK production.

In contrast, for natural gas, BEIS argues that UK emissions performance should be benchmarked with a selected basket of countries which is representative of UK suppliers at the time of the assessment. In our view, benchmarking should include all GHG emissions along the supply chain, i.e., emissions from all upstream and midstream activities until delivery to final consumers. Moreover, benchmarking should wherever feasible be against the marginal source of supply, which in the case of gas is from LNG. LNG has a materially higher emissions intensity than piped natural gas produced in the UK, so this test would typically be passed in respect of new field developments in the North Sea.

Potential test 3 (Status of the UK as a net importer or exporter of oil and gas): This test would focus on the UK's status as a net importer of oil and gas and would be passed if the UK is expected to remain a net importer in the future. Reduced import dependency can be considered a legitimate policy objective, to improve security of supply. However, the UK's dependence on natural gas imports seems likely to continue for the foreseeable future under any credible production scenario.

Potential test 4 (Sector progress in supporting energy transition technologies): We have not commented on Potential test 4, as it is not covered by the scope of our analysis.

Potential test 5 (Consideration of international Scope 3 emissions): According to BEIS, this test would assess the impact of international Scope 3 emissions from oil and gas produced in the UK and whether these would be expected to fall in line with the fall in emissions required to keep global warming within 1.5°C if further licensing rounds were agreed. As noted above, our analysis of the market structure of regional and global oil and gas markets suggests that consumption and hence downstream emissions impacts from UK production are limited. Hence, any decision to allow increased production from the North Sea is likely to pass this test, and as such it is of limited value to BEIS.

Potential test 6 (Production gap): According to BEIS, this test would evaluate the impact of a new licensing round on what some commentators refer to as the global "production gap" (discrepancy between countries' plans for future oil and gas production and a global production pathway that is consistent with the goals of the Paris Agreement). The evidence that we have gathered on supply responses suggests that lower production in the UKCS may be offset by increased production elsewhere, which suggests that the effectiveness of the test may be limited in terms of actual emissions reductions achieved (in particular if these alternative sources are associated with higher upstream emissions). Also, from the perspective of "fair global effort sharing" and in view especially of recent dramatic shifts in the geopolitics of oil and gas, there may be a case for countries / regions seeking to limit their import dependency to be allocated a lower share of the "burden" than net exporters of oil and gas.

Wider Economic Benefits of Increased UKCS Production

While BEIS has consulted on the Climate Compatibility Checkpoint, it is also important to note that the upstream oil and gas sector makes very substantial contributions to the UK economy, and even if there were detrimental climate change effects associated with higher levels of oil and gas production in the UK, these would need to be traded off against other wider economic factors.

The oil and gas industry makes a significant contribution to the UK economy. A recent report estimates the direct, indirect and induced impact[7] of expenditure or capital formation by the upstream oil and gas sector (oil and gas extraction and support services) to the UK Gross value added (GVA) and employment over 2019 – 2021:

The UK upstream oil and gas sector contributed almost £38 billion to Gross Value Added (GVA) in 2019,[8] equivalent to 1.9 per cent of total GVA across all sectors. The study estimates that the total contribution declines to around £27 billion in 2020 (1.6 per cent of the UK total) before increasing to just over £31 billion in 2021 (1.7 per cent of the UK total). In 2019, the industry's direct contribution to GVA was around £19 billion, while the indirect and induced impact were £12 billion and £6.5 billion respectively.

[7] The direct impact reflects the economic activity within the industry. The indirect impact is the economic effect through the oil and gas production supply chain. The induced effect reflects the wider economic impact stimulated by the expenditure in the oil and gas production sector.

[8] GVA in 2018 price terms, chained volume measure.

The study estimates that the oil and gas production industry supported around 260 thousand jobs across the UK in 2019, equivalent to 0.7 per cent of total UK employment. The employment supported declines to 179 thousand in 2020 before increasing to almost 196 thousand in 2021. In 2019, around 30 thousand people were directly employed in the extraction of oil and gas and associated services sector while more than 120 thousand were indirectly employed.

The HMRC further reports that total government revenues from the oil and gas production industry for the 2020/21 tax year were £248 million. This figure is down 71 per cent from the previous year (approx. £855 million), which the government attributes to the decline in energy prices over 2020 driven by the reduced demand due to the COVID-19 pandemic, which are likely to increase substantially with rising output following the pandemic and higher fuel prices.[9] Total revenues were £1.2 billion in both 2018/19 and 2017/18 tax years.

[9] HMRC (July 2021), Statistics of government revenues from UK oil and gas production July 2021.

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