Subsidy Advice Unit Report on the proposed CCUS Transport and Storage Regulatory Investment Model Support Scheme

Referred by Department for Energy Security and Net Zero

6 August 2024

Subsidy Advice Unit

Part of the Competition and Markets Authority

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1. Introduction

1.1 This report is an evaluation prepared by the Subsidy Advice Unit (SAU), part of the Competition and Markets Authority, under section 59 of the Subsidy Control Act 2022 (the Act).

1.2 The SAU has evaluated the assessment of compliance from the Department for Energy Security and Net Zero (DESNZ) of the proposed Carbon Capture, Usage and Storage Transport and Storage Regulatory Investment Model Support Scheme (the Scheme), with the requirements of Chapters 1 and 2 of Part 2 of the Act (the Assessment).[1]

1.3 This report is based on the information provided to the SAU by DESNZ in its Assessment and evidence submitted relevant to that Assessment.

1.4 This report is provided as non-binding advice to DESNZ. The purpose of the SAU's report is not to make a recommendation on whether the Scheme should be implemented, or directly assess whether it complies with the subsidy control requirements. DESNZ is ultimately responsible for making the Scheme, based on its own assessment, having had the benefit of the SAU's evaluation.

1.5 A summary of our observations is set out at section 2 of this report.

The referred scheme[2]

1.6 The Government has developed a carbon capture, usage and storage (CCUS)[3] programme to help meet the UK's climate change targets and obligations. The CCUS programme includes a number of tailored business models that focus on different elements of the programme, including:

(a) a business model for the Transport and Storage (T&S) network, where Transport and Storage Companies (T&SCos) will transport, through pipelines, carbon dioxide (CO_2) produced by a variety of emitters to a geological storage site; and

[1] Chapter 1 of Part 2 of the Act requires a public authority to consider the subsidy control principles and energy and environment principles before deciding to give a subsidy. The public authority must not award the subsidy unless it is of the view that it is consistent with those principles. Chapter 2 of Part 2 of the Act prohibits the giving of certain kinds of subsidies and, in relation to certain other categories of subsidy creates a number of requirements with which public authorities must comply.
[2] Referral of the proposed CCUS Transport and Storage Regulatory Investment Model Support Scheme by the Department for Energy Security and Net Zero - GOV.UK (www.gov.uk)
[3] Carbon Capture, Usage and Storage is the process of capturing CO_2 for usage or for permanently storing it, deep underground, where it cannot enter the atmosphere.

(b) multiple bespoke business models for CO_2 emitters seeking to deploy carbon capture technology. These include business models for Power CCUS,[4] Industrial and Waste Carbon Capture[5] and CCUS-enabled hydrogen production (together, Capture Projects). Initially, Capture Projects will be located within industrial clusters, where emissions are most concentrated.[6]

1.7 The proposed Scheme will provide support to two T&SCos, selected through a competitive process, which will construct and operate T&S networks for the first two UK CCUS clusters.[7] These are:

(a) the East Coast Cluster T&SCo (located in Teesside and the Humber), a joint venture of BP plc, TotalEnergies SE and Equinor ASA; and

(b) the HyNet T&SCo (located in Merseyside), owned by Eni S.p.A.

1.8 This Scheme is part of the Transport and Storage Regulatory Investment Model (TRI model),[8] which is the business model aimed at enabling deployment of T&S networks in the UK. The TRI model consists of a licence to T&SCos administered by the relevant economic regulator (Ofgem), which grants them the right to impose charges, up to allowed revenue, on Capture Projects in exchange for delivering and operating the T&S network. The allowed revenue is calculated on a Regulated Asset Base (RAB) model, allowing T&SCos to recover their initial construction and operating costs, and to receive a return on capital investment.

1.9 DESNZ explained that support to Capture Projects for the costs of T&S charges will be covered in the business models for CO_2 emitters (see paragraph 1.6(b)) and consequently does not form part of this referred Scheme.

1.10 The Scheme consists of the following support mechanisms:

(a) **Revenue Support Agreement (RSA):** provides revenue support to T&SCos when there is a shortfall in revenue collection compared with the allowed revenue because of demand side risks (eg due to late connection or low take up).[9]

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[4] Designed to support Power CCUS by incentivising natural gas fired power facilities to install and operate equipment to capture the CO_2 produced when generating electricity, for transport to a permanent storage site.
[5] The business model providing revenue support designed to incentivise the deployment of carbon capture technology by industrial users who often have no viable alternative to achieve deep decarbonisation.
[6] The Government has committed to delivering four CCUS 'clusters' to capture 20-30Mt of CO_2 per year by 2030.
[7] A CCUS cluster is defined as the T&S network and an associated set of Capture Projects. The selection process concluded in 2021. Cluster sequencing for carbon capture, usage and storage (CCUS) deployment: Phase-1 - GOV.UK (www.gov.uk)
[8] Carbon Capture, Usage and Storage: an update on the business model for Transport and Storage - explanatory note and indicative heads of terms (publishing.service.gov.uk)
[9] The RSA will only be triggered where mutualisation among the userbase and adjustments to the RAB model are not sufficient to cover the revenue gap.

(b) **Government Support Package:**

(i) Supplementary Compensation Agreement (SCA): provides an insurance-like product to support T&SCos where there is limited or unavailable commercial insurance to cover the risk of CO_2 leakage. T&SCos will pay an annual premium (the SCA fee) for SCA provision.

(ii) Discontinuation Compensation: allows the Secretary of State to discontinue the Scheme and pay compensation in certain circumstances.[10]

(iii) Decommissioning Shortfall Agreement: covers the shortfall from a decommissioning fund gap arising from the early closure of T&SCos. [11]

1.11 The Scheme will be available for the operational period of the T&S networks, expected to be 25 years. However, the SCA will run for longer to also cover the post-closure period, which could be a minimum of 20 years.

1.12 The Assessment explains that the value of subsidies awarded under the Scheme will depend on the occurrence of the relevant risks triggering the support mechanisms. DESNZ has provided estimates of the amount of subsidy that would be awarded under a base case scenario (£1.06 billion) and a theoretical maximum exposure scenario (£11.5 billion). The Assessment describes the maximum exposure scenario as 'highly theoretical' and notes that DESNZ considers the likelihood of this scenario occurring to be 'virtually impossible'.

SAU referral process

1.13 On 18 June 2024, DESNZ requested a report from the SAU in relation to the Scheme.

1.14 DESNZ explained[12] that the Scheme is a Scheme of Particular Interest because it allows for the provision of one or more Subsidies of Particular Interest to be given.[13]

[10] Where (i) the T&S network becomes a stranded asset or (ii) the level of calls under the SCA have reached a specified threshold and DESNZ takes the view that ongoing SCA support is not sustainable,
[11] Eg where the gap remains unresolved by other support mechanisms as T&SCos are required to have sufficient funds for infrastructure decommissioning and post-closure costs of the T&S network at the end of the assets' operating life.
[12] In the information provided under section 52(2) of the Act.
[13] Within the meaning of regulation 3 of The Subsidy Control (Subsidies and Schemes of Interest or Particular Interest) Regulations 2022 which sets out the conditions under which a subsidy or scheme is considered to be of particular interest.

1.15 The SAU notified DESNZ on 24 June 2024 that it would prepare and publish a report within 30 working days (ie on or before 6 August 2024).[14] The SAU published details of the referral on 26 June 2024.[15]

[14] Sections 53(1) and 53(2) of the Act.
[15] Referral of the proposed CCUS Transport and Storage Regulatory Investment Model Support Scheme by the Department for Energy Security and Net Zero - GOV.UK (www.gov.uk)

2. Summary of the SAU's observations

2.1 The Assessment uses the four-step structure described in the Statutory Guidance for the United Kingdom Subsidy Control Regime (the Statutory Guidance) and as reflected in the SAU's Guidance on the operation of the subsidy control functions of the Subsidy Advice Unit (the SAU Guidance).

2.2 In our view, DESNZ has considered in detail the Scheme's compliance with the subsidy control and energy and environment principles. The Assessment helpfully sets out how each component of the Scheme complies with the principles. It is also generally supported by a significant evidence base, including independent reports, and draws relevant lessons from previous carbon capture competitions and international experience.

2.3 We have however identified the following areas for improvement:

(a) In Principle B, it should consider whether the set-up of business models for Capture Projects (including subsidies for T&S charges which are then passed through to T&SCos) could impact the proportionality of this Scheme.

(b) In Principle F, it should consider the potential impacts on competition across the CCUS supply chain (including T&S networks) and on the markets as they develop, as well as the extent to which any competitive risks are already addressed. It should also explain how shareholders of T&SCos (who are potentially involved at multiple layers of the CCUS supply chain and/or across multiple T&S networks) might benefit from the Scheme and whether they might derive competitive advantage through the Scheme.

2.4 Our report is advisory only and does not directly assess whether the Scheme complies with the subsidy control requirements. The report does not constitute a recommendation on whether the Scheme should be implemented by DESNZ.

3. The SAU's Evaluation

3.1 This section sets out our evaluation of the Assessment, following the four-step structure used by DESNZ.

Step 1: Identifying the policy objective, ensuring it addresses a market failure or equity concern, and determining whether a subsidy is the right tool to use

3.2 The first step involves an evaluation of the Assessment against:

(a) Principle A: Subsidies should pursue a specific policy objective in order to (a) remedy an identified market failure or (b) address an equity rationale (such as local or regional disadvantage, social difficulties or distributional concerns); and

(b) Principle E: Subsidies should be an appropriate policy instrument for achieving their specific policy objective and that objective cannot be achieved through other, less distortive, means.[16]

Policy objectives

3.3 The Assessment states that the policy objective of the Scheme is to enable deployment of the first two CCUS T&S networks in the UK by 2030, providing a CO_2 storage capacity of 8.7Mt (megatons) per annum, by attracting sufficient private investment and mitigating risks where the market is not able to do so.

3.4 The Assessment explains that the Scheme, by addressing risks that would not be mitigated through the RAB model (that sets the allowed revenue), realises the wider objectives of the TRI model which are to attract investment in the CCUS T&S network to establish a new CCUS sector, enable low-cost decarbonisation in multiple sectors and facilitate the development of a market for carbon capture.

3.5 It further explains that realising these objectives will contribute to achieving DESNZ's policy ambition of storing 20-30Mt of CO_2 per annum by 2030, increasing by 6Mt of CO_2 per annum from 2031, which DESNZ states is necessary to achieve the UK's net zero objectives.

3.6 In our view, the Assessment has clearly described the specific policy objective of the Scheme and how it relates to the broader objectives of the TRI model.

[16] Further information about the Principles A and E can be found in the Statutory Guidance (paragraphs 3.32 to 3.56) and the SAU Guidance (paragraphs 4.7-4.11).

Market failure

3.7 The Statutory Guidance sets out that market failure occurs where market forces alone do not produce an efficient outcome.[17]

3.8 The Assessment identifies the following market failures which prevents investment in CCUS T&S networks:

(a) **Negative Externality:** The Assessment explains that CO_2 emissions impose a significant cost on society through the impacts of pollution on health and climate change. It explains that businesses do not face the full cost of these emissions because carbon prices[18] are not high or stable enough in the near term to fully reflect the true societal cost of carbon. This means that they are likely to continue to produce emissions at socially inefficient levels, ie where social costs are greater than social benefits. The Assessment explains that, while carbon capture technology presents a way to reduce CO_2 emissions, emitters have no financial incentive to install these technologies as they are currently significantly more expensive than operating unabated.

(b) **Coordination Failures:** The Assessment highlights the need for coordination in a CCUS network. It describes how T&SCos can be negatively impacted by Capture Project performance issues (such as a construction delay, underutilisation of the T&S network or insolvency) and vice versa, how Capture Projects rely on T&SCos as there is no alternative provider of a T&S network available to them.[19] It explains how these cross-chain risks deter investment in T&S networks.

(c) **Information Deficiencies:** The Assessment explains that the level of revenue that will be generated from T&S networks is uncertain, due to several factors,[20] which may deter investment. It also explains that there is insufficient commercial insurance currently available to manage the risk of CO_2 leakage at storage sites, increasing the risk for investors in T&S networks.

3.9 The Assessment then describes how the Scheme will remedy these market failures. It explains how the RSA will ensure that T&S charges remain below the carbon price faced by Capture Projects. It also explains how the Scheme mitigates against the risks resulting from the market failures which in turn, will promote investment in T&SCos.

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[17] Statutory Guidance, paragraphs 3.35-3.48.
[18] The UK carbon emission trading scheme set out in the Greenhouse Gas Emissions Trading Scheme Order 2020, operates on a cap-and-trade principle to reduce greenhouse gas. The resulting prices are referred to as the carbon price.
[19] T&SCos operate as natural monopolies.
[20] These include uncertainties around the performance of Capture Projects (eg when they will join the network, whether they will utilise full capacity and the potential for these projects to fail). Revenue from T&S is also highly dependent on future government decisions, such as carbon pricing or subsidies, which the Assessment says are difficult to predict.

3.10 In our view, the Assessment clearly identifies (with the support of relevant evidence) the market failures that the Scheme seeks to address and how the different support mechanisms remedy these. However, the Assessment could have considered the impact of other complementary government interventions within the CCUS programme on the market failures identified, and more clearly describe the role of the Scheme in remedying any residual market failures.

Consideration of alternative policy options and why the Scheme is the most appropriate and least distortive instrument

3.11 In order to comply with Principle E, public authorities should consider why the decision to give a subsidy is the most appropriate instrument for addressing the identified policy objective (see paragraph 3.3), and why other means are not appropriate for achieving the identified policy objective.[21]

3.12 The Assessment states that the government's long-term objective is to establish a competitive T&S market for carbon without the need for subsidy. It explains that, at this early stage of development, targeted public support is however necessary to attract sufficient private investment for the deployment of the first two CCUS T&S networks in the UK.

3.13 In support of this statement, the Assessment provides evidence from the review of international approaches (including countries that developed T&S networks) and from lessons learned from previous attempts to set up CCUS projects, including a National Audit Office inquiry.[22] It also explains why the UK Emissions Trading Scheme (UK ETS), which aimed to ensure higher carbon pricing, was deemed insufficient to incentivise investment in CCUS projects.

3.14 The Assessment then sets out alternative business models for the funding and delivery of T&S networks that were considered. It explains that the choice to have separate funding support for T&S networks and Capture Projects underpinned by a RAB model was informed by extensive analysis of a range of sources, including a consultation, independent reports, a select committee report, and parliamentary advisory group reports.

3.15 The Assessment explains that, when designing the TRI model, DESNZ considered alternative funding models, including a government owned T&S model, a private sector model with an upfront capital grant, and a private sector funding under a RAB model. The latter was chosen because it was deemed to stimulate market-based solutions to the risks associated with the deployment of T&S networks.

[21] Statutory Guidance, paragraphs 3.54-3.56.
[22] Carbon Capture and Storage the second competition for government support (nao.org.uk)

3.16 Finally, the Assessment considers alternative subsidy and non-subsidy options for each component of the Scheme, such as a higher level of mutualisation[23] in response to a shortfall in allowed revenue or requiring T&SCos to provide a greater level of financial security to cover the risks targeted by the Scheme.

3.17 In our view, the Assessment demonstrates that alternative policy options for achieving the policy objective were considered and the arguments in favour of both T&S deployment and the individual components of the Scheme appear well reasoned and evidenced. DESNZ has made good use of the evidence gathered through its consultations, in particular utilising lessons learned from previous CCUS competitions.

Step 2: Ensuring that the subsidy is designed to create the right incentives for the beneficiary and bring about a change

3.18 The second step involves an evaluation of the assessment against:

(a) Principle C: First, subsidies should be designed to bring about a change of economic behaviour of the beneficiary. Second, that change, in relation to a subsidy, should be conducive to achieving its specific policy objective, and something that would not happen without the subsidy; and

(b) Principle D: Subsidies should not normally compensate for the costs the beneficiary would have funded in the absence of any subsidy.[24]

Counterfactual assessment

3.19 In assessing the counterfactual, the Statutory Guidance explains that public authorities should assess any change against a baseline of what would happen in the absence of the subsidy (the 'do nothing' scenario').[25] This baseline would not necessarily be the current 'as is' situation (the 'status quo') but what would likely happen in the future – over both the long and short term – if no subsidy were awarded.

3.20 Having outlined the market failures in Step 1, the Assessment discusses how these create a high level of risk associated with investment in T&SCos. The Assessment describes a counterfactual scenario in which the T&S network would not be built as the beneficiaries would face excessive risk, and would therefore be unable to raise the private finance required. It asserts that, as a result, wider

[23] Mutualisation involves increasing T&S Charges across the network userbase (up to a cap) to enable T&SCos to collect more of its allowed revenue than it would be able to if T&S Charges were only charged in proportion to the Capture Project's expected utilisation of the network and booked capacity
[24] Further information about the Principles C and D can be found in the Statutory Guidance (paragraphs 3.57 to 3.71) and the SAU Guidance (paragraphs 4.12-4.14).
[25] Statutory Guidance, paragraphs 3.60-3.62.

CCUS technology would not be deployed in the UK., as the T&S network is a key element of CCUS overall. The Assessment states that this would result in a failure to fulfil the government's objectives of contributing to its decarbonisation commitments to reach net zero by 2050.

3.21 The Assessment details that absent the Scheme, there would be insufficient incentives for the private sector to create T&S networks. It goes on to describe how each element of the Scheme is designed to address high upfront investments, uncertain returns, information deficiencies, and coordination failures.

3.22 In our view, the Assessment clearly explains that, in the counterfactual scenario, the policy objective could not be achieved due to T&SCos facing excessive risk, affecting their ability to attract private finance. The Assessment could include further evidence in support of this, such as internal documents outlining the market engagement process which T&SCos have undertaken to reach this conclusion.

Changes in economic behaviour of the beneficiary

3.23 The Statutory Guidance sets out that subsidies must bring about something that would not have occurred without the subsidy.[26] In demonstrating this, public authorities should consider the likely change or additional net benefit.

3.24 The Assessment outlines that the Scheme provides the necessary steps to change the behaviour of the beneficiaries. It explains that the Scheme is designed to mitigate risks where the market is not able to do so and hence supports T&SCos in attracting sufficient private finance.

3.25 The Assessment goes on to explain how each element of the Scheme is designed to reduce specific risks faced by T&SCos and improve T&SCos' credit ratings to ensure they can achieve investment grade credit ratings.

3.26 In our view, the Assessment clearly explains that the Scheme changes the economic behaviour of T&SCos by reducing their level of risk exposure and, in particular, sets out good supporting evidence demonstrating how the Scheme would improve their credit rating.

Additionality assessment

3.27 According to the Statutory Guidance, 'additionality' means that subsidies should not be used to finance a project or activity that the beneficiary would have undertaken in a similar form, manner, and timeframe without the subsidy.[27] For schemes, public authorities should also, where possible and reasonable, ensure

[26] Statutory Guidance, paragraph 3.64.
[27] Statutory Guidance, paragraphs 3.63-3.67.

the scheme's design can identify in advance and exclude those beneficiaries for which it can be reasonably determined would likely proceed without subsidy).[28]

3.28 The Assessment explains that the Scheme does not compensate for costs that T&SCos would have funded in the absence of the intervention. It provides a detailed explanation of how the RSA and SCA elements of the scheme are designed to meet the additionality criteria. It outlines that the Decommissioning Shortfall Agreement and Discontinuation Compensation improve value for money.

3.29 The Assessment explains that the Scheme, therefore, does not compensate for costs that T&SCos could have funded by raising new capital as the private sector would not invest due to the high level of risk in the project. Moreover, the Assessment explains that the different elements of the Scheme interact in such a way that T&SCos will not be able to receive support for the same costs under multiple different aspects of the Scheme.

3.30 In our view, the Assessment provides a reasonable explanation of additionality. The Assessment considers the interaction of different elements of the Scheme to ensure the support provided under each element is additional and clearly expresses the additionality of the RSA and SCA elements of the scheme. The Assessment could include more detail on why the Decommissioning Shortfall Agreement and Discontinuation Compensation elements are necessary to realise private investment in the T&S networks.

Step 3: Considering the distortive impacts that the subsidy may have and keeping them as low as possible

3.31 The third step involves an evaluation of the assessment against:

(a) Principle B: Subsidies should be proportionate to their specific policy objective and limited to what is necessary to achieve it; and

(b) Principle F: Subsidies should be designed to achieve their specific policy objective while minimising any negative effects on competition or investment within the United Kingdom.[29]

Proportionality

3.32 The Assessment states that the subsidy will be ringfenced to specific purposes and defined types of costs. It also states that none of the support mechanisms involve automatic direct grants to beneficiaries, the guarantees are to be paid only

[28] Statutory Guidance, paragraph 3.66
[29] Further information about the Principles B and F can be found in the Statutory Guidance (paragraphs 3.72 to 3.108) and the SAU Guidance (paragraphs 4.15-4.19).

in low-probability, high-impact situations, and the RSA top-up mechanism will only be paid in certain situations which lead to a shortfall in the allowed revenue.

3.33 The Assessment states that the size of the subsidy is both limited to the minimum necessary and proportionate to the policy objective because:

(a) the RSA mechanism will only be active in certain circumstances, and after a mutualisation process has taken place. In addition, the Secretary of State can make the decision to discontinue the RSA (if the RSA exceeds 60% of the forecasted allowed revenue for three consecutive years). The Assessment also explains that a lower RSA subsidy, and a lower discontinuation threshold, would not achieve the policy objective;

(b) the SCA element of the Scheme will only be provided above what the market will not provide and there will be terms and conditions in place to ensure eligibility. DESNZ will charge T&SCos a fee to access this insurance, which is intended to be as close to commercial market rates as possible; and

(c) the Decommissioning Shortfall Agreement will only be activated in certain circumstances and will not be paid as a direct subsidy to T&SCos but will cover the shortfall in the decommissioning fund.

3.34 The Assessment considers the possible maximum subsidy for each element of the Scheme, before presenting the base case scenario. It then outlines the support expected to be awarded under the base case scenario as a proportion of capital costs, operating costs, and total project cost. It states that the subsidy is expected to be 12% of the total project costs.

3.35 In addition, the Assessment details that licence conditions will be in place on T&SCos, which create incentives and restrictions on them to ensure the subsidy is both proportionate and the minimum necessary. These include limiting the activities T&SCos can conduct using subsidy funding, cost sharing mechanisms for cost overruns, changes to the allowed revenue based on network availability, and performance being regulated by Ofgem.

3.36 In our view, the Assessment explains how each subsidy element has been designed to be limited to the minimum necessary and proportionate to the policy objective. However, the Assessment could explain the interaction between the different subsidy mechanisms under the Scheme more clearly.

3.37 The Assessment could also more clearly explain how, in the base case scenario, the size of the subsidy as determined by the RSA (see paragraph 1.12) has been kept to the minimum necessary. This could include how DESNZ have minimised the timing delay between T&S networks becoming operational and Capture Projects joining the network, including how this timing mismatch was considered. The Assessment could also consider what level of increase might be expected in

the subsidy intensity under the maximum subsidy scenario (as per the Statutory Guidance[30]) and consider how this might impact the proportionality of the Scheme.

3.38 While the Assessment sets out the subsidy as a proportion of total costs, it should also consider whether the set-up of business models for Capture Projects (including subsidies for T&S charges[31] which are then passed through to T&SCos) could impact the proportionality of this scheme.

3.39 In addition, the Assessment could include more evidence to support the RSA maximum and discontinuation threshold, alongside further explanation as to how the discontinuation mechanism will work in practice and how it will ensure that the Scheme is proportionate to the policy objective.

Assessment of effects on competition or investment

3.40 As set out in paragraph 1.7, the Assessment identifies that the beneficiaries of the Scheme (East Coast Cluster and HyNet T&SCos) were selected through a competitive process, which was developed in consultation with stakeholders.

3.41 The Assessment states that the T&S market is nascent, and that the Scheme will help in enabling its creation. It considers that, as the subsidy is being provided to all of the currently expected market participants, this should limit potential distortions to competition. However, the Assessment recognises that, as a result of the Scheme, the currently expected participants could gain competitive advantages over potential future competitors.

3.42 The Assessment also recognises that, due to their fixed nature, T&S networks will be regional natural monopolies, and that Capture Projects will not have a choice between competitors due to geographic constraints. While a natural monopoly has the potential to distort competition, DESNZ considers the RAB model an effective tool to address natural monopoly issues associated with regional T&S networks.

3.43 The Assessment also considers potential competitive impacts in other relevant markets, specifically offshore energy supply, Capture Projects on the network, input markets, UK ETS markets, international markets for CO_2 transport and storage, and international voluntary carbon markets, and explains why any potential distortions are likely to be minimal and/or unlikely.

3.44 In relation to the potential impact on investment, the Assessment explains that investment into T&S networks comes from a range of global banks and financial institutions, attracting foreign investment into the UK.

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[30] Statutory Guidance, paragraph 3.30

[31] See Report on the proposed Dispatchable Power Agreement Business Model subsidy scheme by the Department for Energy Security and Net Zero - GOV.UK (www.gov.uk) and Referral of Hydrogen Production Business Model subsidy scheme by the Department for Energy Security and Net Zero - GOV.UK (www.gov.uk)

3.45 In our view, the Assessment identifies the main beneficiaries and key markets potentially impacted. It also identifies some key areas where competition could be impacted and identifies distortions that could arise.

3.46 However, the Assessment should consider further areas where distortions may arise as a result of the Scheme:

(a) As the Scheme enables the creation of new CCUS and related markets, the Assessment should consider how it could impact competition (including indirectly) in the various markets across the entire CCUS supply chain, taking into account the wider context where relevant (eg the cluster and T&SCos selection process and/or the regulatory framework for the CCUS sector). The Assessment should explain how T&SCos shareholders might benefit from the Scheme and whether this might give rise to competition distortions, particularly where shareholders are involved at multiple layers of the CCUS supply chain and/or across multiple T&S networks.

(b) As one of the objectives of the Scheme is to help achieve net zero and overcome barriers to investment in the development of the CCUS market, the Assessment could consider broadly how the Scheme might impact competition and investment for other low carbon generation and decarbonisation technologies, and other types of power generation.

Design of subsidy to minimise negative effects on competition and investment

3.47 The Assessment explains that the individual elements of the Scheme have been designed to minimise potential distortions to competition and investment. This includes: (i) the SCA being provided as close to commercial insurance as possible and at market rates (ii) the discontinuation mechanism limiting the compensation amount equity holders can receive (iii) the decommissioning fund being ringfenced and payable into the decommissioning fund rather than to T&SCos or equity holders and (iv) licence conditions placed on T&SCos and regulated by Ofgem.

3.48 In our view, the Assessment has explained how the Scheme has been designed to minimise identified potential distortions to competition, although as noted at paragraph 3.46, it should have considered a wider range of impacts and therefore if any further mitigations were necessary.

Step 4: Carrying out the balancing exercise

3.49 The fourth step involves an evaluation of the assessment against subsidy control Principle G: subsidies' beneficial effects (in terms of achieving their specific policy objective) should outweigh any negative effects, including in particular negative

effects on: (a) competition or investment within the United Kingdom; (b) international trade or investment.[32]

3.50 The Assessment states that the Scheme is required to enable the benefits associated with the deployment of the first two T&S networks in the UK by 2030. These are to:

(a) attract investment in the T&S network to establish a new CCUS sector, which is necessary to overcome the market failures that prevent investment in T&S networks;

(b) mitigate risks where the market is not able to do so, due to the societally inefficient carbon price, and to allow low-probability, high-impact risks to be covered;

(c) enable CO_2 storage capacity of 8.7Mt per annum, corresponding to a reduction of over 2% per annum compared to the UK's CO_2 equivalent emissions in 2022; and

(d) benefit from the wider benefits of enabling decarbonisation in a range of sectors including the energy system, other hard to decarbonise industries and hydrogen production. It is anticipated that the Scheme will reduce the risks and costs for future T&S networks and will allow the technology to be used at scale.

3.51 The Assessment sets out that the 25 year market value (in present value terms) of the two first T&S networks is around £16.9 billion, which it says 'far outweighs the maximum theoretical and expected TRI model support'.

3.52 The Assessment lists various anticipated negative effects of the Scheme on competition and investment in the UK and abroad (see paragraphs 3.41-3.44). It also considers the potential for negative impacts on the environment, which are discussed in more detail under the energy and environment principles (see paragraphs 3.56-3.70).

3.53 The Assessment also discusses the potential geographic and distributional impact of the Scheme resulting from employment benefits being limited to Teesside and the Humber (East Coast Cluster), and Merseyside (HyNet) due to the location of the clusters. Some skilled workers may choose to relocate, having a negative impact on other regions. However, the Assessment argues that this is slightly mitigated by predicted shifts in the overall supply chain. The Assessment also notes that some potential Capture Projects, which cannot connect to the T&S networks due to their location, are disadvantaged compared to their competitors.

[32] See Statutory Guidance (paragraphs 3.109-3.117) and SAU Guidance (paragraphs 4.20-4.22) for further detail.

3.54 DESNZ concludes that the overall positive benefits of the existence of the T&S networks, which are enabled by the Scheme, outweigh the negative effects. The Assessment refers back to the Scheme being key to enable the UK to reach its net zero target. It considers that this outweighs the distortive effects of the Scheme, which overall it considers to be relatively small and/or mitigated.

3.55 In our view the Assessment sets out the benefits of the Scheme related to the policy objective, as well as the negative impacts, and appropriately balances them in line with the Statutory Guidance. We also note that shortcomings identified in paragraph 3.46 may also impact the identification of negative effects, and thus the balancing exercise.

Energy and Environment Principles

3.56 This step involves an evaluation of the Assessment with regard to compliance with the energy and environment principles, where these are applicable to the Scheme.[33]

3.57 The Statutory Guidance summarises the scope of the different energy and environment principles that apply to different types of subsidies.[34] DESNZ has conducted an assessment of the Scheme against Principles A, B, and H.

Principle A: Aim of subsidies in relation to energy and environment

3.58 The assessment against Principle A should show how the subsidy is consistent with delivering a secure, affordable and sustainable energy system and a well-functioning and competitive energy market, or increasing the level of environmental protection compared to the level that would be achieved in the absence of the subsidy. If a subsidy is in relation to both energy and environment, it should meet both of these limbs.[35] Furthermore, the Statutory Guidance notes that schemes with a specific policy objective of promoting net zero will tend to be consistent with Principle A of the energy and environment principles.[36]

3.59 The Assessment sets out that the Scheme is consistent with both limbs of Principle A.

3.60 In relation to the first limb, the Assessment sets out that the Scheme helps to deliver a secure, affordable, and sustainable energy system by enabling the

[33] See Schedule 2 to the Act.
[34] Principles A and B apply to all subsidies in relation to energy and environment. Principle C applies for subsidies for electricity generation adequacy, renewable energy or cogeneration. Principle D applies to subsidies for electricity generation only. Principle E applies to subsidies for renewable energy or cogeneration. Principle F applies to subsidies in the form of partial exemptions from energy related taxes and levies. Principle G applies to subsidies that compensate electricity intensive users for increases in electricity costs, Principle H relates to subsidies for decarbonisation of industrial emissions. Principle I relates to subsidies for improving energy efficiency of industrial activities.
[35] Statutory Guidance, paragraphs 4.19-4.28.
[36] Statutory Guidance, paragraph 4.27.

capture of emissions from power and bioenergy generation facilities, which can provide reliable low carbon generation when supply from other intermittent low carbon generation is insufficient to meet demand.

3.61 In relation to the second limb, the Assessment relies on independent reports to explain that the Scheme is an essential component of reaching the UK's net zero goal. It acknowledges that the construction and operation of T&S networks have potential negative impacts on the environment, including as a result of energy requirements and given the potential for leakage, but that these are mitigated through measures including:

(a) re-using oil and gas assets for CCUS in the case of HyNet;

(b) extensive due diligence by both networks to avoid unacceptable environment impacts; and

(c) strict regulatory requirements and protection around construction, operations and decommissioning to mitigate against the risk of future leakage.

3.62 The Assessment concludes that, overall, given the mitigations and the essential role of the Scheme, the Scheme increases the level of environmental protection.

3.63 In our view, while the Assessment has set out how it complies with both limbs, we consider the Assessment could more clearly explain how the Scheme is consistent with delivering a secure, affordable and sustainable energy system in line with the Statutory Guidance[37].

Principle B: Subsidies not to relieve beneficiaries from liabilities as a polluter

3.64 The assessment against Principle B should explain clearly how the proposed subsidy or scheme does not relieve a polluter from having to bear the full costs of the pollution caused.[38]

3.65 The Assessment sets out that the Scheme complies with this principle as interpreted in the Statutory Guidance read in conjunction with the UK government's Environmental Principles Policy Statements.

3.66 It then sets out a detailed consideration of the Polluter Pays Principle against the various components of the Scheme.

3.67 In our view, the Assessment provides a coherent explanation of why DESNZ reached the conclusion that the Scheme, as a whole or for each of its components, does not relieve a polluter from having to bear the full costs of the

[37] Statutory Guidance, paragraph 4.21
[38] Statutory Guidance, paragraphs 4.29-4.35.

pollution caused. In line with the Statutory Guidance,[39] DESNZ could include a clear statement within the terms of the Scheme that receipt of the subsidy does not relieve the recipient from any liabilities arising from its responsibilities as a polluter, as is stated in the Assessment.

Principle H: Subsidies for the decarbonisation of emissions linked to industrial activities

3.68 Under Principle H, subsidies for the decarbonisation of emissions linked to industrial activities in the United Kingdom should achieve an overall reduction in greenhouse gas emissions, and reduce the emissions directly resulting from the industrial activities concerned. The assessment should identify clearly the relevant greenhouse gases (with reference to those identified as such in the Climate Change Act), and the industrial activities (as described in the Act) responsible for those gases, and show that such emissions would be reduced compared to the situation absent the subsidy or scheme.

3.69 The Assessment explains that the TRI model support enables deploying the T&S network, which is essential for industrial carbon capture. It explains that the industrial carbon capture business model is designed to prevent carbon leakage,[40] which will ensure an overall reduction in greenhouse gas emissions as well as a reduction in emissions directly resulting from the relevant industrial activities.

3.70 In our view, whilst the explanation provided by DESNZ is clear, the Assessment should have drawn more on the supporting evidence. The Assessment should include qualitative and/or quantitative evidence of the reduction of carbon emissions enabled through the Scheme. The Assessment could also further explain of how the T&S network enables the reduction in emissions from industrial activities under the industrial carbon capture business model.

Other Requirements of the Act

3.71 This step in the evaluation relates to the requirements and prohibitions set out in Chapter 2 of Part 2 of the Act, where these are applicable.[41]

3.72 DESNZ has confirmed that none of the prohibition or other requirements in relation to the giving of subsidies apply.

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[39] Statutory Guidance, paragraph 4.33.
[40] The movement of production and associated emissions from one country to another due to different levels of decarbonisation effort through carbon pricing and climate regulation.
[41] Statutory Guidance, chapter 5.