

Carbon Transport and Storage in the UK

19 October 2021

Speed read

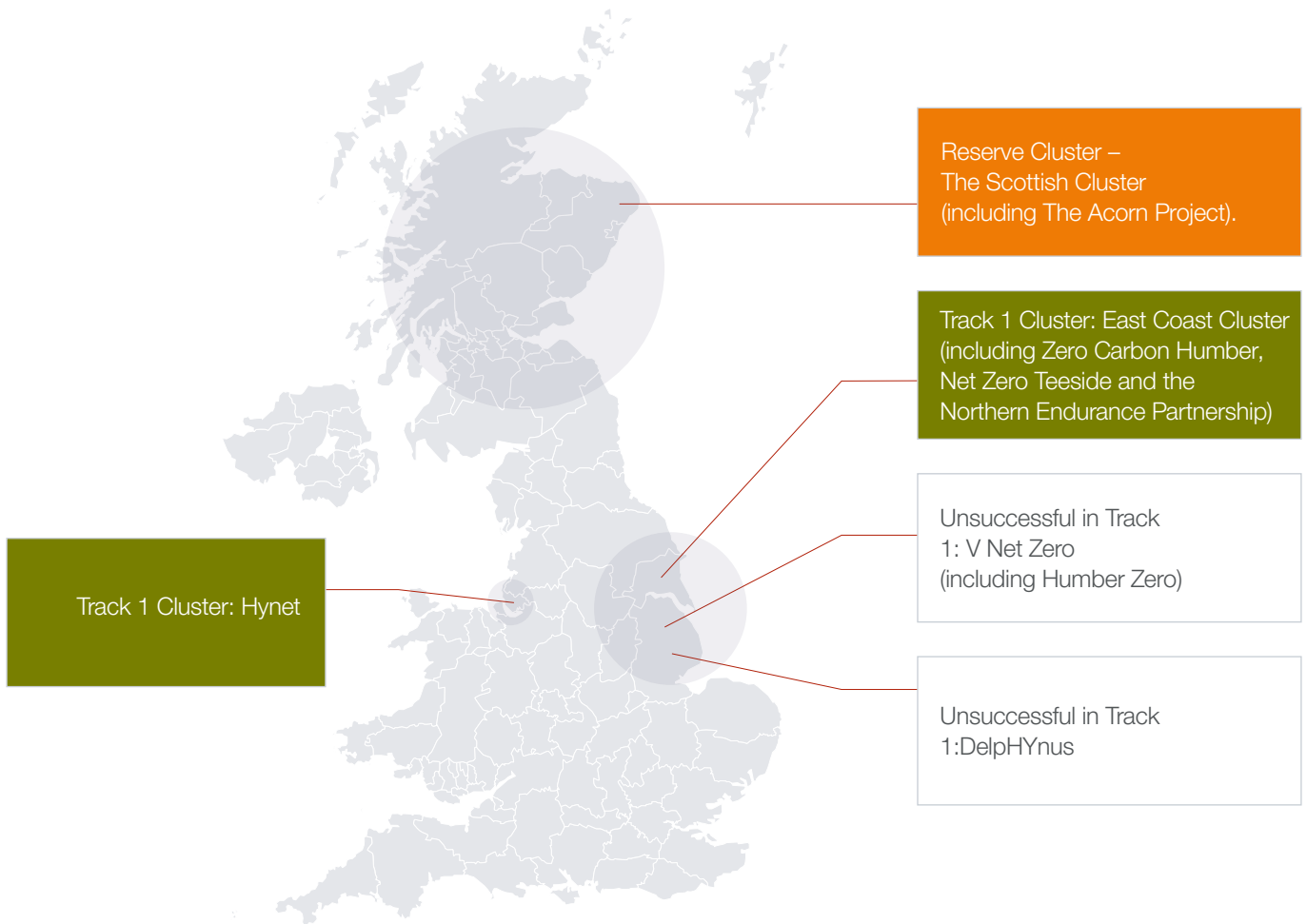
- Today has seen the milestone announcement of the allocation of transport and storage networks in Merseyside (Hynet) and the North East of England (East Coast Cluster) to “Track 1” in the competition for government support, with the Scottish Cluster in reserve.
- Carbon transport and storage is at the heart of each cluster and will be the lynchpin of a new CCUS sector in the UK.
- Transport and storage providers are to benefit from a regulated investment model that builds on experience of UK utility and other regulated asset based models, but adapted to reflect the particular risks and features of a nascent market rather than a mature asset class.
- There is clear Government recognition that it will need to help investors take the leap needed to kick-start the CCUS sector and so stands ready and willing to bridge cross value chain and other material risks.
- Government emphasises the importance of providing certainty to investors to enable storage of 20-30 MtCO₂ per year by 2030.
- This note sets out some of our observations on the proposals so far, but there is a lot more material to come and work to do in bilateral negotiations with the successful clusters.

Today the UK Government has announced which two carbon transport and storage clusters have been successful in the initial phase of the UK Government’s carbon capture, usage and storage (**CCUS** or **CCS**) cluster sequencing process, which is supported by the GBP1 billion CCS Infrastructure Fund. This was an important milestone in the development of carbon capture and storage in the UK and brings into sharp focus the central role to be played by carbon transport and storage providers. The transport and storage networks will be both the physical and the commercial lynchpin to a new carbon sector in the UK. Accordingly, in developing a revenue model to support novel businesses in the sector,

BEIS has needed to design a coherent and holistic regime that balances competing demands of affordability, finance-ability and feasibility on a mid-2020’s timeframe. The result is a jigsaw puzzle of measures across the CCUS value chain, with early years’ enhancements and bespoke cluster approaches to provide the necessary impetus.

A further update on the transport and storage business model was expected in the third quarter of 2021 but did not accompany publications in early October 2021. In light of the “Track 1” announcements today, we take stock on where we are and set out some of our observations on the proposals so far.

Status of the UK cluster sequencing process



Outcomes for eligible applicants under UK cluster sequencing process.

The UK Government launched its cluster sequencing process in May 2021. An overview of the UK cluster sequencing process can be found in our article [here](#). After cluster plan submission, there was a period of intense engagement between each cluster lead and the Department for Business Energy and Industrial Strategy (**BEIS**).

Earlier than expected, BEIS announced¹ in late July 2021 that five cluster submissions were made and that all five had passed the eligibility criteria. Following this, further evaluation of those eligible clusters took place before, again, earlier than expected, BEIS today announced to Parliament that the Hynet and East Coast Cluster had been confirmed as Track 1 clusters for the mid-2020s and will be taken forward into Track-1 negotiations, with the Scottish Cluster being held in reserve. The Government emphasises that it continues to be committed to Track 2 enabling 10Mtpa capacity to be operational by 2030.

¹ <https://www.gov.uk/government/publications/cluster-sequencing-for-carbon-capture-usage-and-storage-ccus-deployment-phase-1-expressions-of-interest/update-on-phase-1-eligible-clusters-and-phase-2-timeline>

The importance of allocation to “Track 1”

For carbon transport and storage providers, being allocated to “Track 1” was critical. Unlike the two or more carbon capture projects that must form part of a cluster submission, it is assumed that there is only one transport and storage network in a cluster and that network will not be put through any further formal competition process for accessing government support (save for the threat of displacement by a reserve cluster). Instead, the allocation to Track 1 marks the start of bilateral discussions with BEIS on the terms of the revenue support available to that particular carbon transport and storage network.

Extensive bilateral negotiations still to come

Whilst the broad principles of the revenue support have been outlined by BEIS, a lot of the detail of the support arrangements has been deferred to those bilateral discussions. In order to get the first projects off the ground by its mid-2020’s target, the Government now appears willing to take a more bespoke approach to reflect the particular needs of the pathfinder clusters. The extent to which this comes at the cost of consistency between clusters is an obvious question.

A potentially bigger concern is the uncertainty resulting from lengthy bilateral negotiations between BEIS and transport and storage providers (and the related discussions with anchor emitter projects). Government’s timetable envisages such discussions concluding in time for final investment decisions to be taken on the relevant carbon transport and storage networks in 2022, but investors in those networks risk being in limbo until then.

Carbon transport and storage business model

A regulated investment model

To support the development of carbon transport and storage networks, Government has proposed the introduction of a new “user pays” economic regulatory regime under which a “T&SCo” will be awarded an economic licence to design, build, own and operate a “T&S Network” in return for being able to receive an allowed revenue by charging regulated transport and storage fees to users of the T&S Network. Those fees are passed through under the separate support regimes for qualifying users – see further below.

Shift in focus to designing for a nascent market

In May 2021 BEIS published an update to the proposed transport and storage regulated investment model. This update represented an express shift in focus and attitude by the UK Government, realising that its process needed to focus not only on what an established market may look like but on how to establish pathfinder networks, and that Government would need to do more to support early projects.

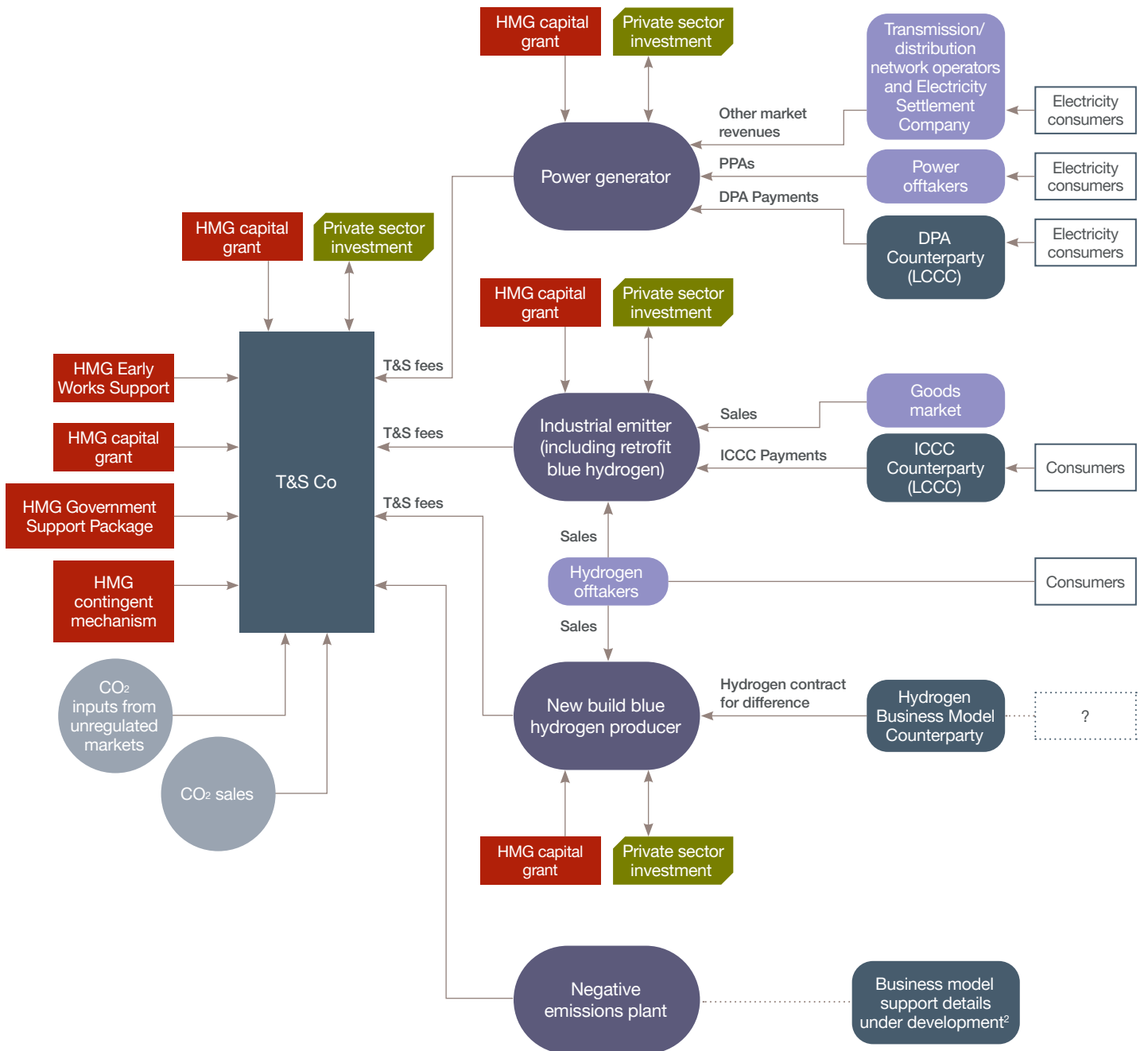
It appears there will be more support available for early transport and storage projects within the clusters, with Government expressing a willingness to take on more first of a kind and cross value chain risks in order to promote initial projects. In particular, the proposed mutualisation of transport and storage fees (see further below) and combination of support models across the carbon capture, transport and storage value chain offer structural protection for transport and storage providers from key volume and stranded asset risks and result in a model which seems relatively economically resilient, provided the support package counterparty remains robust. In addition, the new economic regulatory regime will be supplemented by other contingent support measures including a Government Support Package (GSP) in respect of certain low probability high impact risks and what is referred to as the “contingent mechanism”. Funding will also be available under the Carbon Infrastructure Fund to meet certain risks under the model.



Coherent support across the carbon capture and storage value chain

No one party can develop and finance the whole of a CCUS cluster. The separate business models for transport and storage, power carbon capture (through the dispatchable power agreement (the **DPA**)) and industrial carbon capture (through the industrial carbon capture contract (the **ICCC**)) have therefore been developed to accommodate the segmenting of the CCS value chain, with interfaces that seek to address, as far as possible, the project-on-project risks presented as a result. The outcome is a complex jigsaw puzzle of support packages that must work together and be

understood coherently. Risk allocation can be followed from one business model into another, which presents a number of dangers. In seeking to remove risk from one part of the value chain, additional burden is placed on another which may adversely affect finance-ability. There is also the potential for “risk leakage” if there is an inadequate pass-through of risks from model to model. The devil will surely be in the detailed drafting of the complementary regimes to ensure that this is minimised as much as possible.



² Business models supporting bioenergy with carbon capture awaits publication of the UK Bioenergy Strategy expected in 2022, but today Government also published materials on greenhouse gas removal technologies, including a study on the potential commercial frameworks for power BECCs. See <https://www.gov.uk/government/consultations/greenhouse-gas-removals-call-for-evidence>

Affordability and value for money

The chasing of risks from one business model to another also serves to emphasise the elephant in the room: who is ultimately picking up the tab? One may take the view that the allocation of risk as between the T&S business model, DPA and ICCO is irrelevant for investors in those assets provided that robust protection is provided under one of them. However, this is not a view that can be taken politically and recent media coverage of the implications for consumers of energy price rises has demonstrated what a provocative topic this will be⁴.

It is proposed that electricity suppliers (and their customers) be responsible for supporting T&S costs via the combination of T&S “user pays” and the DPA . In October 2021³, the Government confirmed that the counterparty under the ICCO is likely to be the Low Carbon Contracts Company also. See our comments on the logic of this selection in our article [here](#). This potentially exacerbates an already controversial imbalance in the allocation of Net Zero costs between electricity and gas bills.

The cumulative impact of the risks and costs being borne by the taxpayer and/or consumer will be challenging in the context of value for money assessments. The cost of carbon would be a theoretical cap to the cumulative support that can be justified from a financial perspective (on the basis that consumers would otherwise be paying such carbon costs embedded in the price of electricity or goods). For some risks, Government has perhaps taken the view that, by offering contingent support to overcome inertia on first of a kind projects, greater value for money for the consumer or taxpayer can be achieved in the longer term given the need rapidly to accelerate sectors contributing to Net Zero. In the context of Net Zero commitments, the concept of “value for money” also has more latitude. Government may also use other tools to address adverse affordability implications, and there have been suggestions of additional subsidies for low and middle income households to offset the consequences of increasing carbon costs in gas bills⁵. The Social Climate Fund proposed in Europe as part of the “Fit for 55” package aims to do something similar. On “Fit for 55”, see our article [here](#).

Our Observations

In the remainder of this paper, we discuss some of the key themes and issues we have identified in the design and risk allocation proposed under the carbon transport and storage regulated investment model from the perspective of investors and participants in such greenfield assets.

T&S network assets

Bundled transport and storage network

The carbon transport and storage business model assumes that there will be a single T&SCo owning and operating both onshore and offshore infrastructure with a cluster. There is no ability to unbundle constituent parts of the T&S Network, although separation may be considered in the future and offshore and onshore assets are treated differently in a number of respects (eg the tariff structure and decommissioning regime). It is not clear whether such separation would be voluntary or forced, similar to the treatment of offshore electricity transmission assets. Either way this may present both a short term limitation and long term uncertainty for investors. It may also present additional administrative burdens in the meantime as T&SCos set themselves up to accommodate future separation.

Potential for non-piped transport

There is a desire to facilitate non-piped carbon transport. See our comments below in relation to the T&S tariff structure in particular. In its consultation on the duties of the carbon network economic regulator⁶, Government set out its intention to develop the licence conditions and business model arrangements so that non-piped sources of carbon could be accommodated, and invited views on how this might be approached. For example, is non-piped transport part of a regulated network? What degree of competition should exist for non-piped transport? Doubtless more to come from the Government on this!

3 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1023095/icc-business-model-october-2021.pdf

4 <https://www.ft.com/content/a33e38bb-1593-4d01-bd06-8fc66442068a>

5 <https://www.thetimes.co.uk/article/payouts-for-families-to-offset-green-energy-bills-in-drive-towards-net-zero-emissions-jdg2lk6js>

6 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1007774/ccus-economic-regulator-consultation.pdf

Treatment of re-used assets

T&S Networks will involve the reuse of oil & gas assets around the UK, including the North Sea and Liverpool Bay. Indeed this is a fundamental objective of the North Sea Transition Deal⁷. However, as those assets are already constructed, the normal regulated asset value determination processes are not appropriate. Government has indicated that something else will need to apply, but it is not yet clear what this will be. There is therefore uncertainty for oil & gas companies as to the valuation of existing assets contributed to transport and storage projects, noting that such value should take into account, among other

things, the existing decommissioning liabilities associated with such assets. Government has put forward a proposal for oil & gas asset owners to be able to effectively buy-out of their contingent decommissioning obligations upon the transfer of assets to a T&SCo⁸, but this may be a red herring given the trend on current early projects for such oil & gas companies to be at least one of the lead investors in T&SCo. Clearly the terms and financial settlements reached around valuation of existing assets will be a critical part of the commercial discussions between cluster participants and with BEIS.

Development phase

Burden of funding development costs with T&SCo

In addition to a carbon storage licence and relevant sea-bed rights that a T&SCo will need to hold, the economic regulatory regime proposed envisages the granting of an economic licence to T&SCo at final investment decision. Investors in a T&S Network therefore face all permitting and development cost risk. To enable some projects to be operational by the mid-2020's, Early Works Support will be available from Government for critical path activities should a T&SCo be FID-ready before the economic licence can be granted.

However, this is to mitigate the impact of legislative delays rather than providing additional support for development costs. Cluster development costs have to date been funded by a combination of grant funding and contributions from often wide groups of parties interested in cluster development. With the potential for protracted negotiations with BEIS on the bilateral support packages post allocation to "Track 1", it is possible that the availability of funding for development costs could become more problematic.



⁷ <https://www.gov.uk/government/publications/north-sea-transition-deal>

⁸ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1007773/ccus-decommissioning-consultation.pdf

Construction phase

Construction cost risk

Similar to precedent regulated asset regimes, the allowed revenue that may be recovered by T&SCo is made up of a number of building blocks, including the return that T&SCo can expect to make on its capital efficiently invested (the **regulated asset value**), depreciation of the regulated asset value, opex, decommissioning costs and taxes, subject to certain adjustments (in relation to which see further below).

A mixture of ex ante and ex post cost assessment processes may be used to determine the regulated asset value of the T&S Network, although in May 2021 Government indicated that this mix was open for further consideration in the bilateral negotiations with clusters. This mixed approach gives rise to different risks for T&SCo and added complexity for financiers seeking to fund both types of asset.

For transport assets, T&SCo would face cost overrun risk to the extent its costs exceed the target set at FID, a risk that may be managed and mitigated through typical measures such as contingency and due diligence, but which may be more costly for users overall.

Conversely, for storage (and offshore transport) assets, the risk would be of a regulator deeming ex post expenditure to have been incurred inefficiently. Government has indicated that there will be dialogue between the regulator and T&SCo to reduce the risk of disallowed costs, and the proposal⁹ of Ofgem as the economic regulator of carbon transport and storage networks will be reassuring for some investors given its experience and approach on other regulated networks and a likely similarity of duties. However, until the full regulatory framework is known and there is a track record of behaviour, it will be difficult for investors to be totally comfortable.

Unlike the support packages offered on other projects using a regulated asset base model and the latest direction of travel on the ICCC¹⁰, there does not seem to be any offer of protection from capex overruns. Technical advice will be required to assess the extent to which this is acceptable in the context of the particular construction risk profile on CCUS projects, particularly those involving extensive repurposing of existing oil & gas assets (as is expected to be the case for early projects).

No revenue during construction

Unlike regulated asset models seen or proposed for other key infrastructure projects, T&SCo will not receive any allowed revenue during construction. This may present difficulties for certain classes of investor who are unable to accommodate gaps in revenue.

The extent to which this is a problem will depend on the duration of construction and the particular technical solution envisaged on each individual cluster, particularly where there is significant re-purposing of existing assets.

Construction delay

The risk of delays to construction of the T&S Network generally sit with the T&SCo but there is no penalty deduction applied to the T&SCo's allowed revenue. Instead Government considers that for early projects it is sufficient incentive that the T&SCo would not start to receive revenues until construction is completed. From the perspective of an investor in T&SCo this is an improvement from Government's earlier proposals.

However, a delay to the T&S Network being available has adverse implications for emitters intending to connect to that network – either they will have to run unabated or they cannot run their plants at all. It appears both the DPA and the ICCC will provide some protection to the T&S Network user for this risk.

Under the DPA in such a scenario, a Generator otherwise available would still receive its availability payment (excluding the T&S capacity fee element thereof) and can run as unabated generation, but it will not receive a variable payment, will be subject to normal carbon costs and will have eroded the term of its DPA support. Under the ICCC, the Operational Condition Precedent requiring connection to the T&S Network will be temporarily waived, but Government is still considering what costs will be payable to the emitter in these circumstances. In both cases, alternatively the plant's target commissioning windows would be extended to allow alignment with the T&S Network. Again, from the perspective of investors in T&S Network users, this is very welcome. Ultimately this means that the consumer or taxpayer is bearing at least some T&SCo construction delay risk, but this is an example of the Government intentionally taking on "project on project" risk in order to unlock investment across the CCUS value chain.

9 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1007774/ccus-economic-regulator-consultation.pdf

10 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1023095/icc-business-model-october-2021.pdf

Other allowed revenue building blocks

Back-ended capital investment depreciation

The depreciation profile to be adopted under the economic regulatory regime is still to be confirmed. BEIS is weighing up affordability concerns around whether to pay off the regulated asset value on a straight line basis or to pay off less in early years so as to ease the burden for the fewer users that have to fund the allowed revenues between them. The choice of profile will have implications for investors who will need to model the longer payback periods.

Funded decommissioning regime

T&SCo is responsible for decommissioning of the T&S Network. This allocation of responsibility is consistent with the oil & gas regime (as well as other energy infrastructure assets), however Government proposes significant divergence from the more commercial “just in time” approach taken to that mature sector. Borrowing heavily from the approach to UK nuclear, Government proposes a funded decommissioning regime whereby decommissioning costs are met by a fund accrued during the operational life of the assets from revenues received under the economic regulatory regime and invested in accordance with an agreed fund management regime.

Given the increased uncertainty around significant decommissioning liabilities with an immature technology like CCUS, the existence of the funded decommissioning regime is clearly a material benefit from a bankability perspective. However, the question then becomes who bears the risk of a shortfall in the fund, whether caused by under-utilisation of the network, an early closure of the network, fund-mismanagement; fund wrong-sizing, etc. The answer in most of these circumstances appears to be T&SCo (as the quid pro quo for getting the benefit of any fund upside), but should be viewed in the context of mutualisation of T&SCo costs and the GSP in relation to the risk of the T&S Network becoming a stranded asset. We suspect this will be an area of focussed consideration.

Opex reopeners

T&SCo generally takes the risk of opex overruns and the benefit of opex efficiencies. However, there are certain circumstances in which the allowed revenue settlement can be reopened. In December 2020, Government was minded to permit re-openers only in relation to refinancing gains. By May 2021, Government was prepared to take a broader view for the first regulatory period given the uncertainty around operational costs in the developing sector.

Specific, but varied, examples of when a re-opener may be used are given by the Government such as if additional expenditure is required to develop additional storage sites where capacity was lower than anticipated. This broad ability of the regulator to re-open a settlement is significant, and probably largely to the benefit of T&SCo and its investors. However, the Government has warned that much more analysis is still needed.



Revenue model

Tariff structure

Use based charges with mutualisation of connection costs

For early projects, costs of connecting users will be covered in the use of system charges and so spread across all users of the network, to reflect the lack of choice that users have to mitigate those costs and to avoid putting off users from connecting at all.

For early projects, Government intends to take a more tailored approach to use of system charges based on some short term assumptions on how individual clusters will be set up and a basic split between charges for use of the onshore pipeline and the offshore assets respectively. This could facilitate non-piped transport use of the offshore network in the future, but Government has not gone as far as splitting fees in respect of offshore transport from storage.

The proposals also present a relatively stable revenue stream for T&SCo and its investors, varying by emitter volumes and not also their location.

The basic principle of use of system charges is that users should pay the costs that their use of the system create, and thus use of system charges will be made up of a volumetric charge as well as a capacity charge. The extent to which Government is sticking with this principle is questionable given the mutualisation of connection costs and the treatment of under-utilisation risks described below.

The net result of the proposed charges regime means that a large emitter close to a cluster is potentially going to pay more proportionately compared to a small emitter located far away from the cluster. However, this will also depend on the extent to which T&SCo is obliged to extend the T&S Network to meet emitters (as opposed to emitters coming to meet the T&S Network). In the short term this concern is irrelevant for T&SCo and T&S Network users given the financial support for T&S fees under the ICCC and DPA. However, in the longer term these are critical questions for investors in order to understand the growth story of a cluster and the sector generally.

Under-utilisation and bad debt

There are risks associated with the selection of a user pays revenue model which Government are trying to address in a way that means, at least for early projects, those risks are not left with T&SCo. However, Government is already laying clear markers that this will not always be the case, and investors in the sector need to be aware of the likelihood that some of these enhancements are scaled back in the longer term.

Bad debt T&SCo risk

T&SCo's allowed revenue can include an allowance for bad debt, but beyond this bad debt is for the T&SCo to manage using typical credit risk mitigations. This is challenging in the context of emitters that may be from more volatile industrial markets and face financial pressures in their own sectors that T&SCo is not able to mitigate. The recent crisis over increasing gas prices for energy intensive industry is a topical case in point. However, this risk is further addressed by the pass through of T&S fees under the ICCC and DPA. Government has even mooted the potential for those fees to be paid directly to T&SCo to offer additional protection from the insolvency of emitters.

Structural protection from volume risks

Under-utilisation of the T&S Network is a particular risk to which Government appears to have given significant consideration in the context of a nascent carbon transport and storage sector.

For expected under-utilisation in the early phases of clusters, Government has proposed that the "revenue gap" be filled using an upfront capital contribution from the Carbon Infrastructure Fund. This amount would be deducted from the T&SCo regulated asset value which, when combined with a back ended depreciation profile, could help reduce the allowed revenue that has to be recovered from users in early years.

Given the absence of any track record or utilisation data to rely on, the risk of unexpected under-utilisation of the carbon network is also significant. Rather than oblige T&SCo to generate reserves or imposing incentives on T&SCo to encourage greater use of its network (as was suggested in December 2020), Government now intends to mutualise costs across all network users. This is an important principle. Use of the carbon network could theoretically therefore become particularly expensive for residual users of the network (exacerbating bad debt risk referred to above), but ultimately these costs are recovered under the DPA or ICCC (provided all users are party). Where volumes of carbon are too low to justify continued operation of the T&S Network, protection is offered to T&SCo through the GSP. Understanding the interface between mutualisation, the DPA, ICCC and GSP on volume risk will be very important for CCUS investors.

Alternative revenues

It may be possible for T&SCo to generate additional revenues from the sale of carbon to certain use cases, or by importing carbon from non-regulated markets, not unlike airports developing non-aeronautical revenue streams such as landing charges, vehicle parking and retail concessions. The extent to which these additional revenue streams may be taken into account in the assessment of allowed revenue is still to be decided. The latest view of Government is that there could be a sharing of the benefits of non-regulated activities between T&SCo and T&S Network users (and hence the

taxpayer or consumer, as applicable) in the form of lower user costs. There could therefore be limited upside for the T&SCo in exploring and investing to exploit these revenue streams. However, perhaps this is fair given it is regulated T&S Network users that are otherwise paying for the cost of the assets needed. This would also help avoid carbon importers receiving the benefit of cheaper carbon storage (with the competitive advantage that may then bring to them) and a windfall to T&SCo investors.

Availability and operational performance

Government's thinking on the regulatory regime for carbon transport and storage has envisaged a number of areas where T&SCo is expected to bear operational or performance risk.

One such area is that T&SCo's allowed revenue will be subject to an adjustment aimed at incentivising better availability of the T&S Network. Similar availability incentive regimes exist in other comparable regulated sectors such as offshore transmission assets.

The availability incentive will be subject to what has been described as a cap and floor, which would help put parameters around availability risks for investors. However, the proposal is actually for there to be an in-year penalty threshold below which penalties would continue to be incurred, but spread over subsequent charging years. If availability falls below a further penalty floor then other adverse regulatory action could be taken.

For investors in T&SCo the presence of availability risk on first of a kind assets is challenging and investors will likely require significant technical due diligence to understand the performance risks and appropriate buffer in financial models. The devil will doubtless be in the detail of the availability regime itself, including the circumstances in which T&SCo may benefit from deemed availability or similar.

Again, Government appears willing to step in to protect T&S Network users from cross-chain risks and so T&S Network users will be largely insulated from unavailability of, or capacity constraints on, the T&S Network. Under DPA, the Generator will continue to receive its availability payment and under an ICCO, the latest proposal from Government is that support will include compensation for "Qualifying Costs" (as yet undefined) and the return of forfeited UK ETS free allowances¹¹. Whilst the detail of the final support contract terms will need to be understood, clearly the direction of travel is positive from a finance-ability perspective.

T&S Network growth

T&SCo will have a legal obligation to grant access to its network under its licence conditions. However, for at least the early years, T&SCo will not be subject to an incentive regime to meet certain requirements in relation to new connections. Instead arrangements around new connections will be set out in bilateral agreements between T&SCo and network users. This appears to be a pragmatic approach reflecting that for early clusters, the arrangements between anchor emitters and T&SCo will be fewer, more bespoke and thus

should be sufficient to ensure T&SCo provides connections appropriately. Something different will be required for a mature network, particularly if not all connectors have a DPA or ICCO.

A critical issue will be ensuring that a T&S Network is right-sized to accommodate anticipated future growth in carbon volumes captured for storage. A flexible approach to anticipatory investment (as we are seeing consulted on in the context of offshore transmission assets)¹² will therefore be important.

¹¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1023095/icc-business-model-october-2021.pdf

¹² https://www.ofgem.gov.uk/sites/default/files/2021-07/OTNR%20Ofgem%20Consultation_Jul%202021_Final%20%281%29.pdf

Government support package (GSP)

Particular government support is also to be provided to T&SCo for certain low probability, high impact risks. If such risks arise, Government has the option to provide additional compensation to cover the costs of addressing the contingent event, or Government may elect to discontinue the project and take ownership of the assets in return for compensating T&SCo investors. Similar concepts have been included on other regulated asset base models in the UK.

The risks covered under the carbon transport and storage GSP are total asset stranding and uninsured carbon leakage from storage facilities, the costs and loss of revenue from which render the T&SCo un-financeable. The protection for both scenarios is last resort only and on the latter, financiers will require technical and insurance advice to assess risks presented by any gap between the GSP trigger point and the insurable risk. If the GSP is called, compensation may be provided under a supplemental compensation agreement in respect of specific costs. If Government elects to discontinue the project the amounts payable by Government to investors under the discontinuation agreement are intended to ensure recovery of debt and base case equity return, but are to be subject to a cap and mitigation measures. The draft commercial principles for the GSP published by BEIS state that the

maximum compensation available under the discontinuation agreement will be the regulated asset value of the T&S Network, so there is some uncertainty as to whether investors would recover senior debt liabilities and their base case equity return if they are capped by the level of efficient capital expenditure. Hopefully further clarification will be provided in due course. The calculation of discontinuation payments will be important for investors, but the remote circumstances in which the GSP will respond does limit its relevance.

The Government has indicated that a further “contingent mechanism” will be available if other measures fail to adequately mitigate the risks arising from the user-pays revenue model described above. The nature, scope and terms of such mechanism are yet to be released, save that it will provide recourse to consumers or taxpayers so as to ensure the revenue stream from users is “predictable and robust from a financing perspective”. One may wonder what further support is necessary in light of the inter-linking business model design approach taken on revenue risks in particular, but the offer of a further safety net that is designed with bankability in mind is clearly beneficial.

The regulator

Central to the economic regulatory regime will be the new economic regulator of carbon transport and storage. Government has proposed that Ofgem take on this role given its existing competence, resources and familiarity among investors, although this choice may not have been the natural choice for oil & gas investors more used to dealing with the Oil & Gas Authority (**OGA**).

As has long been the case in UK utility regulation, Ofgem will be required to exercise its functions in respect of carbon transport and storage networks in line with defined objectives and duties. It is proposed that the principal duty of Ofgem will be to protect the interests of existing and future users of the T&S Network (rather than the interests of consumers generally). In the context of those users benefitting from the

DPA or ICCC that directs liability for T&S fees to either the consumer or taxpayer, this distinction is potentially misleading, but reflects a longer term view of a network with many diverse users.

The regulator will also have other duties, such as a duty to promote efficiency and economy; effective competition; and meet certain policy objectives such as securing diverse and viable long-term CCUS solutions. Importantly the regulator will have a duty to ensure that T&SCo can finance the proper carrying out of its licensed activities. The existence of a statutory duty to consider finance-ability offers considerable reassurance to investors, as has been seen on other infrastructure and utility economic regulatory regimes.



The economic licence

Core to the economic regulatory regime will be the licence granted to T&SCo to design, build, own and operate the T&S Network, which will be in place until the earlier of an agreed expiry date and revocation of the licence. This is separate to the licenses and permits T&SCo will have to obtain for the storage site, such as any Crown Estate lease, or permit from the OGA. In December 2020 BEIS published very high level draft commercial principles for the T&SCo licence. Clearly the terms of the licence (and associated implications in the wider utility regulatory landscape) will need to be developed significantly from what is currently available, including, for example, as to whether it is expected that

holders of the economic licence will benefit from rights of compulsory purchase and other powers given to utility licence-holders relating to wayleaves, street works etc¹³. However, of particular note for investors in T&SCo in the materials so far will be the potential limitations on the disposal or relinquishing of operational control of T&S Network assets, the granting of security over T&S Network assets or receivables of T&SCo, the incurrance of indebtedness or the granting of guarantees, each of which may potentially limit the ability to raise finance depending on the ultimate scope of the conditions.

In summary, the materials published by Government to date provide a good overview of the direction of travel for the support available for carbon transport and storage networks and we have set out in this note just some of our observations on the materials so far. The support proposed is extensive and the Government's willingness to underwrite cross chain risks and provide additional contingent support for pathfinder clusters demonstrate that the UK Government is willing to put its money where its mouth is to unlock initial investment in UK CCUS.

However, whose money that actually is remains an open question and a lot more work is still to be done on the detail of support regimes before investors will be able to take up the Government's offer.

Join us at our Energy and Infrastructure Seminar in November to discuss further the landscape in the UK for CCUS and hydrogen, in light of the publication of the UK hydrogen strategy, our initial thoughts on which can be found here.

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¹³ For example, see Section 10 and Schedule 4 and 4 of the Electricity Act 1989, and equivalent provisions in Gas Act 1986.