Summary and Analysis of European Commission CCS Directive Guidance Documents

Guidance Document 4: Article 19 Financial Security and Article 20 Financial Mechanism

Guidance Document 4 (GD 4) is intended to provide EU Member States with information and options on two separate, but related provisions within the EU CCS Directive:

- for establishing an effective system of financial security under Article 19; and
- for determining the amount of financial contribution that operators should be required to make available to the competent authority under Article 20, prior to the post-closure transfer of responsibility.

This is a more complex document than Guidance Document 3, on transfer of responsibility (see above), set at a higher level of abstraction and containing fewer practical recommendations. Having provoked some criticism when it was circulated to stakeholders in draft form, the final text shows signs of a tension between the need to protect the public purse from inheriting the costs of legal obligations under the Directive and a desire to avoid imposing disproportionate up-front costs on the operator for risks that might never materialise. The main issues it raises concern the amounts of financial security that will be required, the nature of the security instruments that will be accepted and the mechanisms needed to implement and oversee the whole process.

Article 19: Financial security

Most of Guidance Document 4 is devoted to the financial security requirements under Article 19. This covers: (1) the legislative context; (2) the definition of a financial security or any other equivalent; (3) the obligations that financial security must cover; (4) the amounts of financial security that will be required; (5) the instruments that will be acceptable; (6) eligibility criteria for issuers of financial security; (7) issues surrounding establishing and maintaining financial security; and (8) state aid implications.

In response to concern expressed during the consultation stage, a paragraph is included at the beginning of the section on Article 19, acknowledging a need to avoid excessive costs in this field, at least in the initial phases of CCS deployment. 'The aim of the guidance is to strike the right balance between full coverage of obligations as required under Article 19 while at the same time not overpricing the risks in relation to these obligations for early movers.' It is also emphasised that the aim of the guidance is not to be prescriptive, but rather 'to outline the options open to the Competent Authority'.

The legislative context

Article 19 of the CCS Directive requires Member States to ensure that 'proof that adequate provisions can be established, by way of financial security or any other equivalent, on the basis of arrangements to be decided by the Member States, is presented by the potential operator as part of the application for a storage permit'. Those provisions must be adequate to ensure that all legal obligations arising under the permit issued pursuant to the CCS Directive, including closure and post-closure requirements, as well as any obligations arising from inclusion of the storage site under the Emissions Trading (ETS) Directive, can be met.

Notably, this requirement does not extend to cover for preventive and remedial actions under the Environmental Liability Directive (ELD). Such actions are included among the obligations imposed upon storage operators under the CCS Directive, but the operator's mandatory financial security under Article 19 does not have to cover them – almost certainly because the ELD itself makes financial security voluntary (a mandatory requirement having been deleted drafts of the ELD during the co-decision process involving the European Parliament and Council of Ministers).

The (CCS) financial security must be valid and effective from before the beginning of injection until responsibility for the site is transferred to the competent authority after its closure, or, if the permit is withdrawn, until either a new permit for the site is issued or the authority closes the site and subsequently accepts transfer of responsibility. It must also be periodically adjusted to take account of changes to the assessed risk of leakage and to the estimated costs of all the CCS and ETS obligations.

Definition of a Financial Security or Any Other Equivalent

The guidance document offers two possible approaches to defining what instruments are acceptable as either financial security or 'any other equivalent': (i) list specific types of allowable mechanisms and/or (ii) list the characteristics that an acceptable mechanism must possess.

Under option (i), for financial security, it identifies three types of possible security instruments:

- those which involve setting aside funds or other assets – these include funds or deposits, irrevocable trust funds and escrow;
- those which do not set aside cash, but guarantee that funds will be available if the operator defaults – eg, bank guarantees, irrevocable standby letters of credit and surety or bank bonds (either payment or performance bonds); and
- insurance – defined here to include both risk transfer products, such as environmental liability insurance (EIL), to cover contingent risks, and other types of products, which do not involve the transfer of risks or the pooling of premiums between policyholders, to cover performance of unavoidable tasks specified in the permit.

In relation to the first group, the document notes that funds can be either fully-funded from the outset or take the form of a sinking fund, with the sums accumulating over time. In the latter case, it suggests that the risk of under-funding at an early stage can be mitigated by requiring provision of a complementary instrument, such as a bank guarantee or a letter of credit, to cover the funding gap.

For 'any other equivalent', the document points to mechanisms that may not qualify as financial security mechanisms but can accomplish the level of security that is required. As examples, it cites self guarantees and related-party (as opposed to third party) guarantees, observing that such instruments may already be accepted under Member State laws and regulations on activities like landfills, mining wastes, offshore decommissioning and transfrontier waste movements.

Under option (ii), the document suggests as the key characteristics of an acceptable instrument: certainty, amount, liquidity, flexibility and duration. It then elaborates on these in the sections that follow and points to more detailed attributes, such as the terms and conditions of the instrument, the eligibility of the issuer, and provisions within the instrument to cover circumstances such as cancellation, termination, renewal, voiding and suspension.

The document describes certain other types of instrument as unacceptable, because they lack the degree of certainty, liquidity, etc, that is required and impose a high administrative burden upon the competent authority. Here it includes property deeds, pledges or assignments of future revenue and life insurance policies on key employees.

It notes that operators may wish to offer EU emission allowances (EUAs) as equivalent to financial security. It suggests caution in relation to acceptance of these, even if they are placed outside the control of the operator (eg, in a trust fund), and argues that they should only be accepted as cover for the emissions allowance risk under the ETS Directive (rather than other CCS Directive obligations), with their amount and form being adjusted as that risk varies and as EUA trading periods pass. It does, however, note that, if EUAs are acceptable in this context, EUA futures or forward contracts could also be used.

Obligations that the Financial Security Must Cover

The document observes that there are two circumstances in which the financial security must ensure that all relevant obligations under the permit can be met: (i) when the competent authority has to perform those obligations because the operator fails to do so; and (ii) when the authority withdraws the operator's permit and temporarily takes over all the obligations.

The obligations that may have to be financed from the security instrument include: monitoring, corrective measures, surrender of emissions allowances, updating the monitoring and provisional post-closure plans, site closure (including removal of facilities and sealing of the site), temporary continuation of injection following withdrawal of a permit, and making the required financial contribution to the post-transfer financial

mechanism (under Article 20). Some of these may arise at any time in the project's life, while others will only occur in either the operational or post-closure phases.

Amounts of Financial Security

The guidance document acknowledges that the amount of financial security to be provided by the operator is central to the success of a financial security programme. It then devotes several pages to different aspects of this, covering:

(a) procedural options for determining the required amounts;
(b) principles for determining the amounts required for each separate obligation, or combination of obligations;
(c) setting amounts based on estimates of the costs that the authority would incur to fulfil specific obligations if the operator is bankrupt;
(d) accounting for the effects of time on the amount of security required; and
(e) options and principles for periodically adjusting the required amounts.

(a) Procedural options: The document envisages either the competent authority or the operator taking the lead in developing the initial estimates of costs and proposed amounts of coverage, subject to, respectively, consultation with the operator or review and approval by the authority, before the amounts are finalised. In either case, the amounts should be based on the various plans included in the storage permit (for monitoring, corrective measures, post-closure, etc). There is also a suggestion that authorities may want to consider what it calls a 'phased' approach, allowing the operator to provide increasing amounts of security as the project grows, as long as the security is sufficient to cover the relevant obligations at each stage (it distinguishes this from the sinking fund approach mentioned earlier, where the amounts are accumulated slowly regardless of the size of the obligations at each stage).

(b) Principles: The document then sets out a set of principles which it describes as 'best practice' for preparing, reviewing or approving cost estimates:

- amounts should be sufficient for the competent authority to perform (or pay a contractor to perform) each obligation under the Directive, including necessary costs of overheads, oversight and support services;
- amounts should not be adjusted by multiplying with an estimated probability to calculate an expected value;
- no credit should be allowed for presumed salvage value (eg, at site closure);
- a bottom-line contingency of at least 25 per cent should be required (except for surrender of allowances); and
- assumptions regarding inflation and any other cost escalation should be made clear.

These form the core of the document's approach to the amount of financial security that operators should provide.

Among other things, it includes a strong statement that 'expected value' techniques, applying probability weightings to the costs of obligations that may not arise (eg, corrective measures, surrender of allowances, temporary site operation by the authority)

should be avoided. In relation to low probability-high consequence risks – the most expensive contingent events should they occur – it states: 'A problem with applying such techniques to very low probability events is that the resulting expected values may be much too small to provide sufficient coverage via FS in the event that the obligation does arise.' There is some acceptance elsewhere in the document, however, that this principle will not always be followed (see below).

The document also defends the idea of a 25 per cent contingency addition, on the grounds that carbon sequestration is a new technology and such contingency provisions are best practice for addressing the uncertainties involved, citing the UK Environment Agency's requirements for transfrontier movement of hazardous waste (40-50%) and decommissioning of offshore installations (50%). It accepts, however, that Member States may choose a different level for this. It also suggests that such a contingency provision may not be appropriate for surrender of allowances, for reasons given below.

(c) Estimates of costs: The document reviews ways in which the amount of financial security could be set by estimating the costs that the competent authority would incur in order to fulfil specific obligations if the operator is bankrupt or fails to perform necessary measures, or the authority has to take over the responsibilities following withdrawal of a permit. Here it explores the nature of the costs that would arise under five headings: monitoring, corrective measures, surrender of allowances, closure and post-closure, and temporary continuation of injection.

- For **monitoring**, it observes that the amount would depend on the length of time that monitoring is required and the annual cost involved, based on the scope, scale and intensity of the monitoring activity. Estimates of the scale of these factors could be obtained from the approved monitoring plan, which will contain information about the activities, frequencies and equipment involved. That still leaves a considerable range of possible values, especially on the duration of monitoring, from a few years to more than two decades, depending upon: the point in the operational, closure and post-closure phases at which the competent authority had to take over responsibility; the length of the post-closure period before the conditions required for transfer of responsibility were met; and whether a new permit was issued or the operation was closed. In addition, the scale, scope and intensity of monitoring – and hence its annual cost – will vary according to things such as the amount of CO_2 injected, the range of facilities, storage complex and surrounding environment that has to be monitored, and any variations in the closeness of monitoring that follows events such as leakage or a significant irregularity.

  The document points out that the financial security should also be enough to cover the updating of the monitoring plan, preparing reports and the maintenance, repair and replacement of monitoring equipment. It suggests some alternatives for addressing the divergence in possible monitoring costs, ending with what could be seen as a pragmatic recommendation that, where multiple scenarios for such costs exist, 'a realistic and appropriate middle ground scenario taking account of all available evidence of the site specific risk profile be used'.

- For **corrective measures**, the document points to the approved corrective measures plan as the starting point for estimating possible costs. The plan should include information on the activities, labour and equipment likely to be required for different types of corrective measure. Using that as a basis, the amount of financial security for this obligation needs to take account of three aspects of corrective measures: their scale and scope, their duration and their frequency. It notes that, in some cases, the measures will include action to protect public health, but not all cases will do so. It suggests that the duration of corrective measures is likely to be shorter than that of monitoring. It offers some thoughts about how to handle the possibility that corrective action may be required more than once during the life of a project, and argues that assumptions about frequency may need to be reviewed as evidence on a site and the behaviour of the stored CO_2 is accumulated. As with monitoring costs, the document recommends adoption of a 'realistic and appropriate middle ground scenario' when assessing the corrective measures obligation at a site.

- For **surrender of allowances**, it reflects that the amount of financial security to cover this obligation can be based upon the potential total tonnes of emissions multiplied by the market price of purchasing an equivalent amount of allowances, which in turn will depend when the releases occur. It then cites two possible options for estimating amounts of potential leakage, in the absence of experience with geological storage of CO_2:

  * a conservative estimate of the maximum percentage of CO_2 that can be released (which, it says, 'in most situations, will be much less than 100%'); or
  * a calculation based on a probability distribution of the amount of leakage.

  As far as the latter is concerned, the document explains that, using factors such as site geology and facility design, statistical modelling could be used to generate a probability distribution for the amount of leakage at a site, for each individual leakage and for the expected sum of all leaks over a period of time. This would give an indication of the size of each leak or series of leaks and could be combined with a separate probability function for their frequency. It argues that, if this approach were used, the amount of financial security required would be determined by selecting a particular percentile leakage on the probability distribution, in which case it would be pointless to add a 25 per cent contingency on the top, since the same result could achieved more simply by selecting a higher percentile in the first place. A contingency factor could, in other words, be built into the choice of percentile.

  Whatever approach is adopted for estimating unit amounts of leakage, the amount of financial security ought to adjust that for the number of years that the operator would be responsible for surrendering allowances, including injection, closure and post-closure phases. As far as the timing of potential leakages and the uncertainty of the price of allowances at the relevant time is concerned, the document argues that Member States should use current prices or estimates of near-term prices (over 3-5 years) and then update the security amounts periodically (every 3-5 years) as part of the regular update of financial security.

- For **closure and post-closure costs**, it argues that the financial security must be enough to pay for updating the provisional post-closure plan and the costs of sealing the site and removing the injection facilities, including their recycling or disposal. The amount should also reflect the possibility that the site might have to be closed earlier than anticipated.

- For **temporary continuation of injection**, it suggests that the amount of financial security required could be calculated separately for the site operating costs for the period needed to issue a new permit (eg, 3-5 years), on the one hand, and for monitoring, potential corrective measures/surrender of allowances, etc and closure, on the other; or the two parts could be combined in a single figure. The operating costs should not, it says, be offset against presumed revenues, which might not materialise in this situation. It also notes that this obligation will only arise once for each operator (at a particular site), because temporary continuation would only occur where a new permit is being granted to a different party.

(d) Effects of time: Given the fact that obligations could arise at any time over the lifestyle of a project and, in some cases, may continue for some time, the document describes possible approaches for dealing with price inflation in determining amounts of financial security, using either current costs or costs adjusted for future inflation, combined with periodic recalculations to take account of actual price rises.

On a separate point, it acknowledges that Member States may, in some instances, allow future costs of obligations to be discounted for their net present value (PV) when deciding the amount of financial security required. It argues, however, that such discounting should only be used, if at all, in connection with security instruments which involve the setting aside of actual funds in a form that will accumulate interest. Even in those cases, it says, the discount rate adopted should be approved or determined by the competent authority after tax, reflecting the earnings rate attaching to the instrument and remaining consistent with its treatment of inflation. 'Otherwise, basing the FS amount on the PV of the obligation is not appropriate.'

(e) Periodic adjustments: The document explores three elements in the periodic adjustment of financial security amounts, as required under Article 19(2): (i) updating amounts due to changes in the assessed risk of leakage; (ii) updating amounts due to changes in estimated costs of obligations; and (iii) the frequency of adjustments. Where the initial assessment of the risk of leakage changes, the amount of financial security may have to be altered, to take account of revised monitoring, corrective measures, allowance surrender and closure/post-closure costs. Independently of that, the costs of obligations may vary over time, as a result of factors such as changes in: the scale or timing of injection; the subsurface area covered by the plume; the science and technology for monitoring, corrective measures and closure/post-closure activities; and the price of emission allowances.

The document acknowledges that the Directive does not specify how often the amount of financial security should be adjusted, unless there is 'a precipitating event', such as a change in the assessed risk of leakage or significant irregularities. Nevertheless, it suggests that Member States may want to consider a schedule for periodic updates, to

reflect other periodic requirements in the Directive. It proposes that the financial security amount be updated: every 3-5 years during the operational phase, every 5-10 year after closure (until transfer of responsibility) and whenever a leakage or significant irregularity occurs or the monitoring plan is updated pursuant to Annex II of the Directive. It also suggests that Member States may want to consider more frequent updates during periods of high inflation, and/or less frequent ones after closure, when injection has ceased and changes to the subsurface area of the plume should be minimal.

Acceptable Instrument for Financial Security

The document concedes that the availability and features of security instruments will vary between Member States and may require negotiation between the operator, the authority and the issuers. It then examines: the criteria for deciding which instruments to accept; the suitability of different instruments for coverage of different obligations; the options for relating changes in the assessed risk to acceptable mechanisms; the key terms and conditions of security instruments; and coverage of obligations by one or more separate instruments.

(a) Criteria: In order to clarify the criteria mentioned earlier for determining the acceptability of particular instruments – certainty, amount, liquidity, duration and flexibility – the document suggests some possible questions that might be asked. On certainty, for example, it suggests questions about: the validity and effectiveness of the instrument in the relevant jurisdiction; accessibility and enforceability by the competent authority; protection against claims from other creditors and competing claimants; the degree of separation from ownership and control by the operator; conditions under which the instrument might be cancelled, terminated, non-renewed, voided or suspended; and the level of financial supervision imposed on the issuer. Similar questions are suggested about the amount of security required, covering matters such as: its adequacy if funds are needed before its maturity date, whether cover is subject to an initial deductible or retention, and whether the instruments' value is independent of the financial health of the operator. Under liquidity, it suggests asking what steps need to be taken or conditions satisfied for the authority to gain access to the security – such as adjudicated proof of the operator's default; for duration, how frequently the instrument needs to be renewed or replaced; and for flexibility, whether the amount can be readily amended if greater coverage is required.

The document then acknowledges that ideal instruments may not be available in every Member State, suggesting that that may mean having to accept some compromises on these acceptability criteria. It points to the option of seeking independent expert advice and recommends the use of security options that are 'simple, established and low risk', ending with a rather blunt statement against sophisticated financial programmes: 'Complex financial arrangements should be avoided as outside the core competences of CAs; arrangements that appear to flout financial principles (eg, more certainty and higher return) may contain hidden risks. The intent of FS and FC is to protect the taxpayers and these programmes should

not be used for financial speculation.'

(b) Instruments appropriate for different obligations: The document distinguishes obligations that are certain to occur, although the timing may change (eg, monitoring and reporting), from others that are not certain to occur (eg, corrective measures, surrender of allowances and temporary site operation). It says that contingent obligations such as leakages may be more amenable to coverage by instruments like liability insurance, whereas monitoring, closure and reporting may require non-risk transfer products and bank guarantees may be suitable for temporary site operation following permit withdrawal. More importantly, it suggests that, if the available instruments in a jurisdiction are less than ideal in terms of certainty, etc, a package of different instruments may be an acceptable option, where the strongest instruments cover the unavoidable obligations and 'somewhat weaker' instruments cover the contingent ones. It gives, as a 'first indication', the following example of an acceptable package: a fully-funded trust fund for closure and monitoring; a corporate guarantee for corrective measures; a bank guarantee for temporary continuation of injection; and an insurance policy for surrender of allowances.

In that context, the guidance document then offers an important concession on the coverage of the main contingent risks, corrective measures and surrender of allowances – describing these as the obligations least likely to occur, but also the ones that would impose the largest cost burden (particularly surrender of allowances). If the technology were well developed, it argues, these would ideally be covered by some form of risk sharing, such as commercial insurance, but lack of experience with CCS, as well as other factors, make the probabilities and magnitudes of any loss too uncertain. It therefore suggests that Member States may decide to provide insurance themselves, accepting some transfer of risk in return for a non-refundable premium. If so, that would have to be cleared with the European Commission under EU state aid rules. The document also observes that it is open to Member States, among other things, to pool the security arrangements for the first mover sites in order to reduce the individual premiums, although it suggests that there would need to be arrangements for financing any liability in excess of the pool coverage and for sharing any profits and losses from the pool.

(c) Options for dealing with changes to the assessed risk: Here the document simply notes that differing degrees of certainty and liquidity, etc, may be offered by different instruments and that therefore, in the event of a change in the assessed risk of leakage, the authority may want to consider narrowing or altering the range of instruments that is acceptable.

(d) Key terms and conditions: The document says that security instruments issued by third parties or related parties should include provisions regarding cancellation, termination, renewal, voiding or suspension by the issuer or the operator, including at a minimum: sufficient advance notice to the authority and the counterparty; an option for the operator to provide a substitute mechanism within a time limit without penalty; and an option for the authority to draw funds from the existing mechanism prior to its cancellation, etc. It recommends that Member States forbid changes to the terms and conditions of such instruments without prior written approval from the

competent authority. Where the instrument is issued by the government, it should include a commitment to notify the authority in advance of any action or event that could affect the certainty, liquidity or amount of funds available. It also argues that each instrument should identify which obligations it is covering, so that the authority knows the purposes for which it may be drawn upon.

(e) Coverage by one or more instruments: The document states that Member States can allow the operator to use a single instrument to cover multiple obligations or combine multiple instruments to cover a single obligation; or it can allow, and even require, the operator to use different instruments for different obligations. Where multiple instruments are used, there should be clarity about factors such as the order in which the instruments should be drawn upon by the authority. Where a single instrument covers several obligations, Member States may either require specific amounts to be identified for each obligation or the total amount to be available to cover any or all obligations. In all cases, the instruments should spell out the procedure that the authority has to follow in order to access the funding.

Eligibility Criteria for Issuers of Acceptable Financial Security Instruments

The guidance document grants that the financial strength of the issuer is a key element in the security provided and suggests that Member States may want to define criteria for determining the issuer's acceptability, possibly drawing upon criteria already used in other sectors (waste, extractive industries, etc). It proposes different criteria for three different categories of issuer: financial institutions; governments or government agencies; and self-insurance, captive insurance and related-party guarantors.

Where the security is issued by a financial institution, factors such as the bank's size, its credit rating and the level of financial supervision it is subject to are suggested as tests for deciding whether its security products will supply the necessary certainty and liquidity. On other hand, the guidance reminds Member States that the more stringent the eligibility criteria, the fewer the issuers who will qualify, with possible implications for the availability and cost of security instruments.

Where the issuer is a government or government agency, it argues that Member States may decide that eligibility criteria are not needed for national governments, given their liquidity and ability to raise taxes, but that agencies and sub-national entities require a test, which could be based on factors like type, size, financial characteristics and credit ratings.

If the operator itself is the issuer, or some related corporate body (parent, subsidiary, etc), eligibility criteria are said to be important, because of the lack of independence from the regulated entity and the concomitant risk that the security instrument could fail at the same time as the operator. The document suggests that some Member States may refuse to accept such instruments, but others could decide to accept them, particularly where: the probability of issuer default is absolutely low; the cost of alternative instruments is much higher; alternatives are not readily available; or the issuing entity has greater resources than banks and other financial institutions. In such circumstances, eligibility should still be based the same sort of criteria (size, type of

organisation, financial strength, etc), with the same caution about the consequences of setting the bar too high.

Establishing and Maintaining Financial Security

The guidance document then examines various issues concerning the requirement on the operator to establish and maintain financial security throughout a project's life, from permit application to transfer of responsibility.

It looks at: proof of the validity and effectiveness of the financial security at the time of storage permit application; review and approval of that security by the authority; proof of the continuing validity of the security during the periodic reporting process; periodic adjustment of security amounts; substitution or replacement of security instruments; changes in the operator or ownership of the storage site; cancellation, termination, non-renewal, etc, by the issuer; incapacity of the issuer; procedures for drawing on the security when that is needed; and ultimate release of the operator from the security requirements.

Among other things, this includes examples of the documentation that could be required as proof of validity and effectiveness, and notes that, under Article 14, the operator has to submit such proof at least once a year after initial approval. It suggests that Member States specify the information that has to be provided on those occasions, such as any unapproved changes to the wording, a demonstration that the issuer still meets the eligibility criteria, information about the costs of meeting obligations and evidence that the security is still adequate in the light of the most recent risk assessment. It argues that Member States should consider making explicit provision that no changes to the wording of a security instrument be made without prior written approval of the competent authority, and that the authority should be alert to any language in the wording of the instrument that would allow such changes. It notes that any changes in the operator or ownership of the site might require replacement of the financial security and might also affect the issuer's eligibility where self- or related-party guarantees are involved. It says that the preferred option should be that only instruments that can not be cancelled, terminated, etc, are accepted, although it recognises that such a restriction might unacceptably narrow the market and drive up the costs. Member States are urged to ensure that procedures and criteria for drawing upon each type of instrument are clear and workable, and that funds can be drawn at any time. And it argues that, although there is nothing in the Directive to require the authority to release the operator or the financial security instrument when the requirement to maintain security ends, security should be released once it is no longer needed, including, for example, specific security provisions for the costs of closure and temporary continuation of injection, once closure has been completed.

State Aid Implications

The guidance document simply reports the statutory requirements under the Treaty for European Union (TFEU) that any arrangement which qualifies as state aid within the meaning of Article 107(1) of the Treaty must be notified to, and authorised by, the European Commission before it is granted.

Article 20: Financial Mechanism

The legislative context

Article 20 of the Directive requires the operator to make a financial contribution to the competent authority before the transfer of responsibility under Article 18 can take place, on the basis of arrangements to be decided by the Member State. It states that the contribution must be sufficient to cover at least the anticipated cost of monitoring the site for 30 years after transfer, but may also be used to cover other costs borne by the authority post-transfer to ensure that the CO_2 is completely and permanently contained.

On this provision, Guidance Document 4 starts by pointing to the similarities, both in intent and in the options available, between Article 20 and Article 19. It argues that the intent of both is to ensure that the costs of performing obligations under the Directive are covered at the operator’s expense, even if the operator does not carry them out, and that the funds to perform them should be readily available to do so. In the case of Article 20, the coverage need only extend to 30 years of monitoring after transfer, but may be required to go further. The document also suggests that the same types of financial security instrument could be used for both Article 19 financial security and Article 20 financial contributions.

It cautions, however, that, although the Directive does not require the operator to make the Article 20 financial contribution until the end of the post-closure period, at that point in a project’s life cycle no revenue is being generated, so there is a risk that funds might not be available to pay for the contribution. It therefore argues that provision for the post-transfer financial contribution should be included in the amount set for the operator’s Article 19 financial security, thus tying the two separate security mechanisms together.

Definitions of a Financial Contribution

The guidance observes that the Directive does not define ‘financial contribution’, leaving it open to Member States to specify as acceptable the same types of instrument as for (pre-transfer) financial security. This, it suggests, would have the benefit of simplifying administration of the two programmes. In that context, it says that the advice given earlier about financial security arrangements will apply equally to the financial contribution, with the exception of the site closure and temporary continuation obligations, which will no longer arise. It suggests, however, that two new points may be worth considering: (1) Member States that are willing to countenance an expected value approach to financial security for contingent risks, allowing the amount to be discounted for probability of occurrence, may also wish to consider accepting a ‘sinking fund’ approach for the monitoring obligations under the financial contribution; and (2) providers of insurance policies used to cover site closure and post-closure monitoring may not be willing to extend that cover to the post-transfer period.

Post-Transfer Obligations that the Financial Contribution May Cover

Under Article 18(1), after transfer, the competent authority takes over responsibility for legal obligations under the CCS, Emissions Trading and Environmental Liability Directives, including: monitoring (albeit at a reduced level), corrective measures, surrender of allowances and preventive and remedial action under the ELD. The guidance observes that Member States are therefore free to require the financial contribution under Article 20 to cover: additional years of monitoring (beyond the mandatory 30 years); potential costs of corrective measures and of surrender of allowances, for a defined time period; and potential costs of preventive and remedial action under Articles 5(1) and 6(1) of the ELD. It foresees the authorities defining the length of any of these additional obligations at the time the storage permit is issued, in order to give some predictability to operators, although those lengths could be updated during the operational and post-closure periods.

Estimation of Amounts

The guidance document points out that Article 20 does not require the operator's financial contribution to cover the full estimated costs that the authority will incur after transfer, though there is nothing to prevent the amount being set at that level. It encourages Member States that decide to require more than the cost of 30 years of low intensity monitoring, to clarify as early as possible what the requirements will be.

The document refers back to the methods described under Article 19 financial security, for estimating the costs of carrying out the relevant obligations. It also suggests, however, that, because the Article 20 financial contribution does not necessarily have to cover the full extent of the authority's possible costs, Member States may want to consider using the expected value techniques, which were discouraged under Article 19, discounting the amounts required for the probability of an occurrence.

The guidance further points out that Article 20 also requires that account be taken of the criteria in Annex I of the Directive, on changes to the assessed risk of leakage, and of the history of operations at the site, particularly any incidence of problems and the effectiveness of any corrective measures. Either of these could play a role in recalculating the authority's likely post-transfer costs and revising the amount of financial contribution that is required.

Availability of a Contribution to the Competent Authority

The document attempts to identify criteria for confirming that the financial contribution is available to the competent authority, such as: when the authority can exercise exclusive rights of ownership, control, possession and disbursement; and when the operator relinquishes all rights to, and claims on, the contribution.

Use of the Contribution by the Competent Authority

It emphasises that Article 20 does not require that the financial contribution be used in any specific manner; it only provides that it may be used to cover the authority's post-transfer costs to ensure complete and permanent containment.

State Aid Implications

As with Article 19, it notes that any arrangement in the establishment of a Member State's financial contribution scheme that involves state aid under the terms of the Treaty, must be notified to, and approved by, the European Commission before it is implemented.

Summary

Overall, Guidance Document 4 is described as providing information and options for Member States to use in establishing an effective system of financial security and for determing the amount of financial contribution to be made available by operators prior to the transfer of responsibility. It encourages Member States to secure the financial contribution by means of the instruments and procedures described for financial security. The document ends by restating the overarching principle that the options chosen be 'simple, established and low risk', and that 'complex financial arrangements' should be avoided as 'outside the core competencies of competent authorities'. It repeats its earlier warning that 'arrangements that appear to flout financial principles (eg, more certainty and higher return) may contain hidden risks', its declaration that 'the intent of FS and FC is to protect taxpayers' and its warning that 'these programmes should not be used for financial speculation'.

Key issues

- This has proved to be one of the most difficult aspects of the EU CCS regime, attracting considerable controversy among stakeholders, partly because of the ambiguity of the provisions on financial security in the CCS Directive, which leaves both the European Commission and Member States with a dilemma about how strictly to implement and enforce them – Guidance Document 4 reflects that.

- At its heart, GD4 never fully resolves the contradiction between, on the one hand, an insistence that, in order to protect the public purse, even very low risk-high consequence events be fully covered – without using discounting for probability of occurrence (so-called 'expected value' techniques) – and, on the other hand, a realisation that this could make financial security unaffordable, tie up large sums of money for little purpose and deter investment in CCS.

- In setting their own regulations on financial security, Member States will have to decide which side of this divide they wish to favour, with countries keen to promote CCS likely to limit their security requirements to lower cost options, designed to cover the higher probability events.

- GD4 does contain some important concessions on affordability, including:

  - acceptance that governments may need to underwrite high cost contingent risks, especially on surrender of allowances;
  - an implied recognition that some Member States will allow discounting for probability of occurrence;
  - a wider acknowledgement that, in the absence of ideal solutions, 'somewhat weaker' security instruments may be acceptable for contingent obligations (corrective measures, surrender of allowances, temporary continuation of injection);
  - a recommendation that amounts of security for surrender of emissions allowances are based on present, or near term, EUA prices, rather than estimates of their long term future price; and
  - repeated emphasis that assessment of the operator's financial contribution under Article 20, towards the authority's post-transfer costs, can use discounting techniques and does not have to cover the full extent of those costs.

- On the other hand, the declaration at the beginning of GD4, that the aim of the guidance is 'to strike the right balance between full coverage of the obligations as required under Article 19 while at the same time not overpricing the risks…for early movers', effectively implies that statutory obligations do not have to be met in full, and might be open to challenge.

- At the same time, the European Commission decisively rejected two other points suggested by stakeholders during the consultation on GD4 – the inclusion of an act of God ('force majeure') defence and removing the surrender of emissions allowances from the obligations to be covered by financial security – as contrary to the provisions of the Directive.

- There is also a presumption throughout GD4 that, despite the long timescales involved, only a rather narrow range of investment options should be allowed for security instruments involving the setting aside of funds (primarily fixed interest products) – that will tend to increase the cost of security, by prohibiting a broader spread of investments that could earn a higher return without disproportionate risk.

- Unlike similar guidance in other jurisdictions, GD4 offers nothing in the form of suggested standardised wordings or templates for financial security instruments, which might have been helpful.

- There is no mention of the problem of uninsured or unsecured losses, where the financial security either is insufficient or does not respond because of factors such as criminal behaviour – to require that security instruments eliminate such risks by serving as unlimited guarantees would either be unworkable or add substantially to the costs.

- There is also no mention of the need for the regulator to monitor operators' continuing financial health, in order to identify possible insolvency risks and prepare

to step in.

- More broadly, GD4 seems to underestimate the extent to which financial services expertise is needed to operate an effective financial security regime – the recommendation that instruments be kept simple, because anything else would be beyond the competent authority's expertise, suggests that non-specialists would be allowed to supervise the regime, which ignores one of the lessons of past experience.

- There are significant gaps in the coverage required under Article 19, including remedial and preventive action under the ELD (which operators are required to perform, but are not required to hold security against), as well as liabilities under other EU and Member State statutes, and civil and common law claims (for personal injury and property damage), which may well be the biggest concern as far as public acceptance of CCS is concerned.

- In that context, if a major incident occurs, there is the potential for conflicting demands on the operator's security instruments and the possibility either that private claims would take precedence over CCS Directive and ELD obligations or that private claimants are squeezed out by the latter – a position that could prove very unpopular.

- There also seems to be an anomaly in the treatment of the ELD obligations which, although excluded from the Article 19 financial security requirements, nevertheless, according to GD4, do have to be covered post-transfer, as part of the Article 20 contribution to the competent authorities' costs, with a recommendation that that contribution itself be covered under the Article 19 security.

- The assertion, under estimation of possible costs for corrective measures, that such measures are likely to have a shorter duration than the monitoring duties, seems to overlook the potential for prolonged remedial action in the event of, for example, damage to groundwater or habitats, which can take years or even decades to complete.

- The whole discussion of the operator's contribution to the post-transfer financial mechanism, under Article 20, omits one of the main options for long-term stewardship at storage sites – the use of a collective funding system, financed by operators using some kind of proportionate or risk-based calculation; although there are arguments against such pooling, GD4's suggestion that post-transfer costs be handled by separate individual contributions, using packages of multiple instruments from the earlier financial security phase, could lead to an over-complicated regime.

- It is unclear why the document proposes that any use of the post-transfer financial mechanism for corrective measures or surrender of allowances be limited in advance to a defined period of time, since Article 20 places no such restriction on the competent authority's use of the mechanism – nor why such a limit is not suggested for ELD actions.

- Conversely, if it transpires that the authority has to use the financial mechanism to correct leakages or irregularities after transfer has taken place, in order to ensure complete and permanent containment, that will imply that the conditions for transfer of responsibility have failed, since containment should have been ensured at that stage – one consequence is likely to be a tightening of future transfer tests, to reduce the chance of it happening again.

- Overall, it needs to be recognised that financial services markets, cultures and laws differ between Member States and, as a result, there are likely to be significant differences in financial security arrangements, regimes and costs.