This article considers how inventory financing can be reconciled with the operational mechanics of an underground natural gas storage project, and how a storage facility customer and a bank can effectively collateralise the customer’s gas in store interests as security for a loan.

Inventory financing
Manufacturing companies need working capital to finance the costs of production. This could come from the proceeds of sales of their inventory but there is an inevitable time lag between production and sale. Thus, inventory financing was developed as a means of bridging that value gap.

In a classic inventory financing structure a bank makes a loan (through a facility agreement) to a manufacturing company as borrower, wherein the borrower’s repayment obligation to the bank is secured by a floating charge over the borrower’s manufactured stock (of any nature – eg, cotton, wine, aluminium ingots, electrical goods, motor vehicles and so on) in store.

If there is an event of default (howsoever that is defined) then the floating charge crystallises into a fixed charge over the inventory then in store at that point and the bank is free to enforce the security. Thus, the borrower is able to access working capital from a bank in exchange for the grant of a security interest over the borrower’s physical inventory.

The bank will recognise that the borrower’s physical inventory is an ever-changing population and is in a permanent state of flux – new items of stock are manufactured and join the inventory, as existing items of stock are appropriated to customer demands and leave that inventory. The challenge for the bank is to ensure that any time there is enough physical inventory in place to act as sufficient security for the bank.

At the same time, the borrower wants the least possible degree of control by the bank over its physical inventory, so that its business is not stifled. This is a critical conflict of interests that will need very careful management in any inventory financing structure.

Similar principles could be applied in respect of a party’s stored gas entitlements within an underground gas storage facility, but subject to a number of key structural differences (which are considered in detail below) being recognised and dealt with.

Underground natural gas storage
Natural gas can be stored underground in any of a depleted gas field, an excavated salt cavern or a vacated aquifer. Some gas storage facilities are owned and operated by gas trading companies solely for their own commercial use, but some such facilities are owned and operated as tariff-generating items of infrastructure through the grant of gas storage capacity rights to third-party customers.

Under the latter arrangement a storage facility owner (the SFO) will contract with the owner of gas (the customer) to store the customer’s gas in the SFO’s storage facility, through a form of contract known as a storage services contract (the SSC). Under the terms of the SSC the SFO provides a storage service (based around the trinity of accepting gas for injection from the customer, storing the gas and making the gas available to the customer for withdrawal when required) in exchange for the payment of defined service charges by the customer.

A number of key commercial and operational features will characterise any underground natural gas storage project where capacity is let to customers:

- Title to gas in store – It is usually the case that at the point of injection of the customer’s gas into the storage facility the title to that gas transfers from the customer to the SFO. Title to the gas remains with the SFO for as long as the customer’s gas resides in the storage facility, and title to the gas transfers back from the SFO to the customer at the point of withdrawal of the gas from the storage facility. The customer’s entitlement is therefore a right to call for the withdrawal of its gas from storage, with the total amount of gas that the customer is entitled to withdraw available to the customer for withdrawal when required in exchange for the payment of defined service charges by the customer.

The bank will recognise that the borrower’s physical inventory is an ever-changing population and is in a permanent state of flux.
being reflected through the customer’s stock account. This is the key consideration to bear in mind when applying inventory financing principles to gas in store.

- **Working gas and cushion gas** – Contained within the storage facility will be the gas that is used by a customer for injection and withdrawal (working gas) and gas that is retained by the SFO as an essential buffer between the physical structure of the storage facility and the working gas volumes (cushion gas). Working gas is cycled in and out of the storage facility and cushion gas remains in residence, although the distinction between these volumes is notional because they will be molecularly indistinguishable once they have been commingled.

- **Stock accounting** – The SFO will maintain an individual stock account for each of its customers. This stock account will track the movements of gas into (injection) and from (withdrawal) the storage facility on behalf of each customer and will at any time provide a snapshot of the gas in store standing to each customer’s account.

- **Quantifying the gas in store** – The customer’s gas in store is measured as a quantity (whether volumetrically or calorifically) by the SFO and ordinarily has no monetary value ascribed to it, because this is simply not a required feature of the gas storage function. That said, however, it could be necessary to so ascribe a monetary value where the SFO allows the SFO to sequester gas from the customer’s stock account to a particular value in order to compensate the SFO for the customer’s failure to pay the service charges.

- **Electronic bulletin board (EBB)** – The SFO will maintain an online electronic bulletin board (EBB) that will recite matters such as the total amount of gas in store, any unused capacity in the storage facility and gas transfers between customers and into and out of the storage facility. The contents of the EBB will generally be available for viewing by all customers, but some sections of the EBB might be available only to individual customers in respect of their personal commercially sensitive data.

- **Trading the gas in store** – The customer will want to trade gas from the storage facility, through injecting gas sourced at low market prices and withdrawing gas for sale at higher market prices, thereby exploiting the price differential. This cycle of trading could happen across a range of frequencies from seasonal (summer/winter) to within-day, depending on the flexibility of the particular storage facility. For this to happen the customer will require unqualified access to its gas in store.

- **Protection against the SFO’s insolvency** – The customer could be concerned that the SFO becomes insolvent or enters administration or receivership and an appointed liquidator, administrator or receiver assumes ownership of the customer’s gas in store (as part of the SFO’s general assets). The conventional route in UK gas storage projects to protect the customer against the risk of losing its gas in store entitlements upon the SFO’s insolvency (etc) is the appointment of a security trustee and a trust declaration, whereby:

  1) A floating charge over all gas in store is granted by the SFO to a named security trustee (and the SFO commits to the customer not to create any other charge or encumbrance over the gas in store);

  2) The crystallising event for the floating charge is the insolvency (etc) of the SFO – in this event the floating charge becomes a fixed charge over all of the gas in store in favour of the security trustee; and

  3) The security trustee undertakes a declaration of trust in favour of the customer in respect of the customer’s gas in store entitlements, whereby the customer is the absolutely entitled beneficiary of that trust.

**Inventory financing and gas in store**

A key conceptual difference from a conventional inventory financing structure will be apparent from one of the observations made above – because title to the customer’s gas transfers to the SFO at the point of injection the customer has no title to its physical inventory (i.e., the gas in store) over which it might grant a charge in favour of a bank. Thus, given that the customer cannot grant a charge it becomes necessary to effect an alternative structure by which the customer’s gas in store might effectively be collateralised in favour of a bank as security for raising finance. When considering how best to afford security to the bank, it could be suggested that upon the first drawdown by the financing customer of the funds that the bank has made available under the facility agreement there will be a corresponding transfer of gas from the financing customer’s stock account to the bank’s stock account. This transfer gives the bank an immediate physical interest. The bank will hold that transferred gas in the storage facility, effectively to the account of the financing customer. That gas will be transferred back to the financing customer by the bank when the financing customer repays the bank under the facility agreement. If there is an event of default under the facility agreement then the bank will keep that gas permanently, whereupon the bank may do as it wishes with that gas.

This option gives the bank the best level of security since the financing customer’s physical inventory is immediately directed to the bank’s custody. This is essentially a pledge of the financing customer’s gas in store. However, it defeats the financing customer’s ability to trade its gas in store, since the financing customer no longer has that gas, and for this reason is unlikely to be tenable as a form of security for finance. Such a device would, equally, defeat the effective operation of any inventory financing structure, and therefore is not a realistic option.
The more common route by which a party that has gas in store in an underground gas storage facility might use that gas as security for finance is one whereby the bank becomes a customer of the storage facility, albeit in a somewhat suspended manner. How the bank becomes a customer is considered further below.

The bank will enjoy that suspended status until an event of default (howsoever defined – see below) occurs. When an event of default occurs under the facility agreement there is a transfer of an appropriate portion (subject to valuation – see below) of the financing customer’s gas in store to the bank. This would necessitate a transfer of stock between stock accounts (a debit for the financing customer and a credit to the bank).

The net amount of gas in store will be unaltered, because of this mere change in accounting entries, and so the SFO should have no concerns about a lack of available capacity in the storage facility.

Alternatively, the bank could nominate another customer of the storage facility to be the recipient, if there is a commercial arrangement between the bank and that other customer that might necessitate this, or there might be a put option expressed to apply in the bank’s favour (see below).

The bank will make its own assessment, at the time of entering into a security arrangement of this nature, of whether the financing customer’s gas in store is (based on a range of potential monetary values) adequate as security for the bank.

A number of features will apply in the further definition of this formulation:

- **The bank as a customer** – The bank will become registered as a customer of the storage facility. This will require the involvement and approval of the SFO, since the bank and the SFO will enter into an SSC with the bank as a customer.

  At this point of registration the bank has no gas in store standing to the credit of its stock account. Consequently, the bank is effectively a registered non-user customer. It could also be the case, however, that the bank is already a fully functioning customer of the storage facility, as a commercial gas storage participant, and so the bank will already be registered.

  In its capacity as a registered non-user customer the bank will require access to the EBB, and to any private section of the EBB that relates to the financing customer, so that the bank can track the movements from time to time of the financing customer’s stock account. This will be of particular relevance to ensuring the compliance of the financing customer with certain covenants (see below).

  It should be noted, however, that giving the bank access to the financing customer’s commercially confidential data could be unwelcome to the SFO and to other SSCs because of the commercial advantage that it could give to the bank (and particularly so where the bank is already a commercial customer of the storage facility). This level of transparency could give rise to market abuse or other competition law concerns.

- **Covenants by the financing customer** – The bank’s security for the finance made available to the financing customer is represented by a right to access the financing customer’s gas in store. Thus, the bank will be concerned about what the financing customer might do with that gas in store.

  The bank could require the financing customer to commit to a series of covenants – such as that the financing customer will not grant or permit any other security interest or encumbrance over the gas in store, and that the financing customer will not permit its gas in store levels to drop below certain defined levels (whether by withdrawal or by transfer to another customer), at least not without replenishment within a certain defined period of time.

  It is necessary to strike a careful balance between the bank’s desire to lock up the inventory and the financing customer’s desire to trade the gas in store. The bank could also seek to condition the financing customer’s ability to transfer its interests under the SSC to any other person, and the financing customer’s rights to terminate the SSC against the SFO.

  A breach of these covenants by the financing customer will be a matter to address between the financing customer and the bank, and should not involve the SFO.

  These covenants could be set out in the financing customer/bank/SFO tripartite agreement (see below) but they more properly belong in the bilateral financing arrangements between the bank and the financing customer and should not be constituted as obligations that might apply to the SFO.

  The bank’s access to the EBB will be instrumental in allowing real-time monitoring of the performance of the financing customer against these covenants. It should be remembered, however, that the EBB is passive: it cannot be applied by the bank as a tool to prohibit or to undo the actions of the financing customer.

- **Service charge liability** – The bank is a customer under the SSC but the bank will expect that the financing customer will be responsible for any service charges for which the bank would otherwise be liable to the SFO. These service charges, says the bank, should be treated by the financing customer as an inevitable cost of securing the benefit of the facility agreement.

  ![Quote](https://via.placeholder.com/150)

  When an event of default occurs under the facility agreement there is a transfer of an appropriate portion of the financing customer’s gas in store to the bank.
This is true up to a point: where, however, an event of default has occurred and the bank has taken a transfer of gas from the financing customer, then the bank should behave as a customer in its own right, including paying to the SFO the service charges that relate to the gas that the bank has become absolutely entitled to.

- **Pricing the gas in store** – Because a customer’s gas in store ordinarily has no monetary value ascribed to it, then it will be necessary to ascribe a monetary value to the gas in store, such that there is a fair equation of gas to money, for the purpose of deciding how much gas is to be transferred from the financing customer to the bank when an event of default occurs. Valuation of the gas in store could be done on the basis of the prevailing market gas price that applies on the date the transfer is effected, so that the gas has the greatest possible “real time” value to the bank.

- **Protection of the bank against the SFO’s insolvency** – The bank will have the same concerns about the potential insolvency of the SFO as would any other customer, since the sequestration by a liquidator of the financing customer’s gas in store would impact the bank’s security interests. Consequently, the bank should be recognised by the security trustee as an accessory to the security trust arrangements at the same time that the bank becomes party to the SSC.

  The structure indicated above would apply principally to a customer that already has gas in store and that wishes to use that gas as collateral for raising finance for use elsewhere. There is no reason, however, why the structure might not also be used by a customer to finance the acquisition of its working gas in the first place.

  Taking this one stage further, the structure might also be used by the SFO to finance the acquisition of the cushion gas – although this could present some difficulty if the bank later seeks to realise its security over the cushion gas, because of the indispensability of the cushion gas to the operational integrity of the storage facility.

**Structuring the arrangements**

Certain of the arrangements between the bank, the financing customer and the SFO relating to the collateralisation of the gas in store will be set out in bilateral arrangements (such as the facility agreement including the covenants) between the bank and the financing customer, and the SSC between the bank and the SFO in recognition of the bank as a customer.

Certain of the arrangements could, however, be reflected through a tripartite agreement between the bank, the SFO and the financing customer. This sets up direct contractual relationships, made up of rights and responsibilities, between all three contracting parties. Overall, the contractual structure would therefore appear as follows in Figure 1.

The tripartite agreement should recognise the following components:

- **Credit event definition** – The tripartite agreement will define the credit event that acts as the trigger event for the realisation of security over the financing customer’s gas in store in the bank’s favour. This could be effected simply by a declaration by the bank to the SFO that an event of default had occurred under the terms of the facility agreement (in a manner similar to the presentation of a claim under a letter of credit). The SFO will prefer to take this at face value, since the SFO would not wish to become embroiled in a dispute between the bank and the financing customer as to whether this trigger event had or had not occurred.

- **Protection for transfer** – The tripartite agreement should recite the mechanics by which an appropriate portion (see above) of the financing customer’s gas in store is transferred to the bank when an event of default occurs. It could be that the financing customer will be required to effect that transfer at the appropriate time but the financing customer could refuse to do so because it is disputing the existence of an alleged event of default under the facility agreement. To address this, the financing customer could grant an irrevocable power of attorney to the bank, whereby the bank can effect the necessary transfer on the financing customer’s behalf at the relevant time.

- **Liability for service charges** – The financing customer could assume responsibility for certain service charges for which the bank would otherwise be liable as a customer (see above) and the SFO could acknowledge this allocation of liability between the bank and the financing customer, and would undertake to look only to the financing customer for the payment of those service charges.

- **Fee structuring** – In consideration of the entry of the SFO into the inventory financing arrangements described above, the SFO could charge an agreed fee to either or both of the bank and the financing customer.

- **Put option for the bank** – The bank could be reluctant to be a long-term customer of the storage facility, since this is not a business that the bank is familiar with nor interested in being party to. The bank could agree with the SFO therefore that upon the bank’s realisation of its security that gas will be transferred to the SFO, at the option of the bank. There has to be some financial incentive for the SFO to agree to this – this could be based on an option price set as a...
discount to the prevailing gas price at the time when the bank exercises the put option.

- **Step in rights** – If the financing customer commits an unremedied default under the terms of the SSC that would allow the SFO to terminate the SSC, then the bank could want a right to step in so as to remedy the financing customer’s default and to take over the financing customer’s position under the SSC.

Some issues will purposefully not be recited in the tripartite agreement, however, and these issues can be grouped under two principal headings:

- **Subordination of the SFO’s rights to the bank** – The SFO could have certain rights against the financing customer under the SSC that, if exercised, could compete with the bank’s rights in respect of the same customer. An example of this is where the SFO has the right under the SSC to sequester part of the customer’s gas in store as compensation for a failure of the customer to pay the service charges when due.

  The bank might require a subordination of the SFO’s rights to the bank, so that the SFO would not reduce the customer’s inventory in this manner. Whether the SFO should have wider rights to impose security arrangements over the gas in store that might rank ahead of the interests of the bank will also be a particular point for debate. The SFO would obviously be reluctant to freely give up its rights under the SSC in favour of the bank.

- **Promotion by the SFO of the bank’s interests** – The bank might request the SFO not to approve any gas in store transfers between the financing customer and any other customer, or any withdrawals by the financing customer that would cause the financing customer to breach its covenant limits (see above). These are not commitments that the SFO would be keen to undertake. The SFO would not wish to become the policeman of the financing customer’s covenants given to the bank.

**Conclusion**

Applying the customary principles of inventory financing to gas in store entitlements is certainly possible, but only with recognition of the essential structural features that result from the SFO’s ownership of the gas in store. It is possible to reconcile the two worlds of inventory financing and traded gas storage, but only with careful attention to the necessary documentation.

**Footnote**

1 - The commercial terms of access to these storage facilities could be published online as a regulatory necessity (http://www.centrica-sl.co.uk) or through commercial preference (http://www.gastoragebergermeer.com).