Merchant vs plant supply

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Make or buy. When a requirement for industrial gases is identified, that is the question - whether to own the equipment and operate it to 'make' your own gases or contract for an over-the-fence supply purchased from a third-party company who guarantees your supply of products in return for a long-term supply contract. The very next question is "What is the most economic mode of supply?", should I enter into a supply agreement for delivery of Merchant (aka Bulk Liquid) supply or can I most economically produce the gases from a Plant.

So many customers for industrial gases find themselves trying to make all these decisions at once and receiving their input from suppliers, who of course have a vested interest in their proposed solution.

Industrial gases are either essential process materials or essential safety materials in almost every manufacturing supply chain; to make or buy industrial gases and what supply mode to use is a decision that has been addressed by businesses of every complexion on every continent and in every industry.

Make or buy

The first point is to understand the existing situation. At most pre-existing industrial sites there will be a supplier already under contract for some requirement, together with some rented equipment owned by that supplier, or there will be an existing production system owned and operated by the company, or potentially operated under contract by a third party. On an all-new 'Greenfield' site there will likely be no pre-existing contract or industrial gas equipment in place.

In the case of an existing contract, understanding the details is paramount. A liquid product or Merchant delivery contract or an 'onsite' supply contract is an extremely powerful business model for the supplier, proven over time in numerous scenarios. Usually once a contract exists it puts the supplier in the driving seat for any future requirements at the relevant location.

A thorough analysis of the existing contract and the practical limitations it imposes on the owner of the site is essential before you can even decide if you have the option to 'make or buy. Where there exists an owned production system, the end-user has a cleaner opportunity to evaluate the make or buy options available to them.

In the 'Greenfield' case it's important to understand the relative economics of the various supply modes, which are usually a function of product mix, product pressure, purity, use pattern and utilisation. Each case has its own equation of course however as a starting point simplified charts can be used to identify the prima facie most economic supply mode.

It's an important decision because signing a new contract for new supply effectively makes the make or buy decision, and can select the supplier for all the industrial gases on that site both at that time and into the future. At stake is the distribution of value and risk between the supplier and the end-user; 'out of the box' the business model strongly favours the supplier.

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Most of the major suppliers achieve similar levels of operating performance using mostly similar equipment in their supply systems. However, since any supply agreement brings the two parties into close quarters with each other for 5, 10, 15 years or more, the quality of the relationship between the companies is also important. At any given site the make or buy decision process should determine if an existing supplier is someone they feel they will want to continue to work with, if the decision goes 'buy'.

Once the site situation and any contract arrangements are understood, it is also necessary to consider the physical location of the site relative to the location of any potential support resources that might be required from a supplier. Economics of supply and Make or buy in the Northeast US likely looks quite different to the same set of variables translated to Western Russia, where it might be necessary to rely much less on the availability of road delivered Merchant product.

In all cases it's also necessary to understand what other contracts are in place at other locations. Often in negotiations, a supplier will offer to bundle contracts at multiple sites or in other ways 'leverage' existing arrangements to provide ultimately attractive or compelling economics at the new location.

A critical variable in the make vs buy decision is time. Time is perhaps the most important and most often underestimated variable in these decisions. At the front end, industrial gas equipment takes time to get installed. The times vary depending on the system, and are usually longer with increasing capacity and complexity, but can range from months to several years. Very often a 'make' decision can be impossible from the outset, because the time needed to get the equipment in-place has already passed.

At the back-end time continues to be important, since the useful life of the storage and vaporisation or production asset (if properly maintained) can be in excess of 30 years. There are in fact many plants operating past the 40-year mark; and with the production technology essentially mature, the useful asset life far exceeds the typical supply contract.

Many companies don't have a ready knowledge of the timing built-into their supply agreements. Often there are stipulations regarding cancellation, increasing requirements, notice periods, and obtaining competitive offers. In the same vein, if the company doesn't understand the time to get a Greenfield system in place, even if they plan to own and operate it themselves, it can leave them with an unnecessarily reduced set of options when they come to consider 'make' or 'buy'.

Capital and operating costs

It might seem obvious, but in evaluating mode of supply and whether to make or buy often cited is the fact that the supplier's cost of capital is lower and it can utilise a favourable tax credit, and these benefits are passed on to the customer in the contract pricing. That may be, but it depends on the particular circumstances and the negotiation of the contract in question.

Important to note is that practical issues can be even more basic; for example, if there is no capital budget to support the outright purchase of industrial gas equipment, then there can be no 'make' option. Customers accustomed to supply contracts often neglect to allocate the budget to even give themselves a 'make' option.

It is also often cited that a supplier can operate the supply system more efficiently than the customer could and can bring a lower risk profile to the supply based on its experience in operation. Such claims need to be explored on their merits. Industrial gas systems are mature technologies and the skills needed to operate them successfully fall well within the repertoire of typical manufacturing plant operators.

Similarly, input costs such as operator labour, electrical power, and utilities may be more cost-effectively available from the end customer or the supplier, depending on circumstances. Sometimes a Customer can install a system and manufacture and export its own Merchant liquid product to the wholesale market. There is a growing incidence of such cases in North America. It's important to know the specifics.

A company faced with a make or buy decision also needs to consider its culture - 'the way things are done around here'. What logic or commercial imperative drives the choice?

Win-win?

These are all basic issues to consider before moving on and analysing the various technical supply options on their merits. It may be that an existing company owned, or third party supplier's system, has spare capacity or has only partial or no spare capacity - it may be that a Greenfield site ramp-up calls for increasing volumes and moves from merchant liquids to gases over a period of time. It may be that the site does not run 24/7 and so is less able to fully utilise onsite assets.

To summarise this brief overview, the supply mode and make or buy decision around industrial gases is fundamental for most manufacturing companies. There are many factors to consider and these are often underestimated and many times addressed too late by those not skilled at purchasing industrial gases.

A skillfully negotiated supply agreement or a highly flexible supply partner can mitigate much of the potential downside, but a properly executed 'make' option can also bring significant additional benefits to the end-user. What is important to note is the timeframe: Typically the make or buy evaluation should begin three or four years before a sourcing decision must be finalised, so as to avoid decisions being made under unnecessary time constraints. This ensures existing contractual obligations can be met, and gives enough time to evaluate both supply mode and make or buy options and to install new supply equipment as necessary.

East vs West?

To make a broad generalisation, 'Western' companies more often adopt the long-term supply contract and 'Eastern' companies traditionally favour owning the equipment and making their own gases and liquids. As globalisation proceeds, we find Western business practices growing up in the East and vice-versa.

Of course in reality, it's nothing like as simple as that. There are many more factors involved than the regional heritage of the firm; and the world doesn't come only in Western and Eastern flavours. So, as in life, variety is everywhere and decision analyses and business priorities, and even company culture, can cause similar companies in similar industries to come to different conclusions when considering the same broad set of decision parameters.

Approximate lowest cost nitrogen supply methods - New plants
Source: Universal Industrial Gases, Inc. http://www.uigi.com/optimalplant.html