

# Article on the Financing of GTL Projects

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Guest Editorial:

## GTL Won't Fully Benefit From the Financial Leverage Offered by Project Finance

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In the late 1970s, engineers were touting that ore found in nodules 30,000 feet below the ocean level were the future of the world's ore supply. They may be right, but this future has not happened yet because we still have access to more economical sources of metals.

Likewise, technologies that may have been proven in pilot plants or even on full-scale commercial plants may never be successfully implemented in other environments, as one could argue in the case of BHP steel factory in Venezuela.

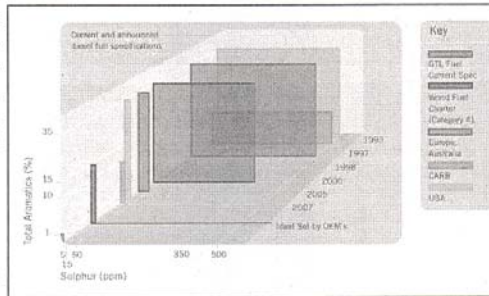
### What About GTL Products?

There is no more question that GTL is one answer to our increasing will to use less polluting sources of energy. It is rather unique solution, in terms of its specifications (NOx, sulfur, cetane) — surpassing in many ways, other products such as dimethyl ether (DME), as was discussed in the excellent article by Thomas F. Glenn, in the April 2002 edition of *GTLN*.

Experts seem to agree that GTL wide array of products is marketable. Even for GTL diesel, they believe that additives would economically supplement low lubricity, and existing engines could be used after some retiming.

The regulatory environment is evolving in a way that promotes such solutions as GTL. In the U.S., the largest energy consumer in the world, the EPA has a proposed rule to cap sulfur at 15-ppm by mid-2006 from higher levels currently.

Europe regulations, one of the largest diesel market, are preceding the U.S., while Asia and notably the very large markets in China and India are increasingly conscious and motivated to regulate for more environmental friendly products and processes.



There are still legal issues pending for GTL, notably potential patent infringements of the ExxonMobil slurry bed process using a cobalt-based catalyst. However, other processes have been developed and discussion is in the making to resolve such issues.

Strong administrative drivers in both producing and consumers' countries drive the use of GTL. Producing countries with reserves over 7 trillion cubic feet of natural gas can benefit from either the valorization of flared gas (e.g. Nigeria, Angola) or stranded gas (Bolivia), or the acceleration of the exploitation of their reserves (Australia, Qatar). In compensation, they offer better terms on the gas feedstock, a major component of the GTL cost.

Consumers' countries with high taxation of fuels — such as in

Europe or Japan — and/or strong environmental drivers, can use their budget flexibility to nurture new products, and offer tax breaks. Thus, GTL fuels are on the verge of becoming proven marketable products.

Tests conducted by major refiners (e.g. ExxonMobil, BP) have demonstrated that blending of bottom distillates with GTL yielded a diesel with properties reaching environmental targets, and that GTL can be used to upgrade the conventional #2 diesel fuel.

More importantly, automobile makers such as General Motors are recognizing GTL as a fuel extender or blending component for diesel. Target markets are being assessed, notably in Asia (Japan) and Europe. The industry believes that for fuels, a market of 15 to 20 million tons/year can be secured — a small portion of the overall fuel market.

The cost of investment to produce GTL fuels is down to \$20-25,000/bbl and some are already targeting \$15,000/bbl (BP Alaska). This is only a couple of cents per gallon above CARB diesel. In addition, while the cost of production of GTL fuels is likely to decrease, the cost of production of ever lower sulfur regular diesel fuels is likely to increase, eventually making GTL a more competitive solution. Transportation of GTL products is

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standard and adds no specific cost unlike LNG or CNG.

Producing and marketing GTL involves various divisions in very large organizations. GTL products link the gas upstream to the refining/marketing and distribution divisions that usually have little — if no reason — to interact.

Therefore, to ensure successful production and marketing, new synergies and structures need to be articulated within the integrated oil and gas companies (*i.e.* Shell, ExxonMobil, Conoco), or new partnerships need to be formed between the GTL developers and the refiners/distributors that will use or sell these products (*i.e.* SasolChevron, ChevronTexaco, or Syntroleum-Marathon).

The first wave of 10 GTL diesel plants is expected in the next decade, each one at a cost over \$2 billion, including gas gathering systems. In addition, more than 10 specialty projects are in various development stages, with costs of more than \$600 million each. This represents an overall target commitment to GTL products of more than \$26 billion in the next four to eight years — a wave of investments unseen in the refining industry since the 1970s!

To sum it up, we have a slate of products with desired specifications; a legal and regulatory environment evolving favorably with some patent infringement worries; strong drivers both from supply of feedstock and demand of final products; fuel products that are closing on proven marketability; decreasing cost of pro-

duction zeroing on competitiveness; new synergies between gas developers, refiners and distributors; and major refiners and sponsors increasingly committing to these very heavy investments.

Project financing is contemplated by some of the smaller players, *e.g.* by Syntroleum for its Sweetwater project, and by the larger developers, *e.g.* SasolChevron's GTL project in Qatar. While all these investment elements are aligned, this environment can't yet yield the benefits from project financing because

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of track record, competitiveness, and market risk.

### Track Record

As a matter of comparison, LNG plants had been in commercial operation for 20 years or so before the first project finance was arranged for an LNG gasification complex (Pertamina, RasGas). GTL diesel fuels do not have such a track record.

Products are still being tested, though presently on a market scale. Production processes and technologies are still being investigated in multiple directions. Although the slurry bed technology has had a long and strong track record with coal gas feedstock (*i.e.* in South Africa,) there is no such history with natural gas feedstock on a large production scale, and thermo-dynamic processes have proven that new issues can emerge when production scale increases.

Therefore, new GTL plants under consideration can demonstrate yet neither a safe nor performing technology. The project sponsors and the lenders are facing technological risks including non-performance, cost over run, or competitiveness of the retained process. Hence, project financiers are likely to request a completion guarantee, including a performance period, and a cost over run guarantee from a strong enough entity to mitigate such risks.

### Competitiveness

Again taking LNG as a reference, costs of LNG projects have been almost halved in the past five years. For GTL, the industry expects that engineering solutions around operating projects will bring significant cost improvements.

Therefore, the first wave of projects in the making is likely to lack competitiveness in the medium term compared to new projects. Hence, project financiers are likely to request a support from an acceptable entity in the form of a robust debt service coverage ratio, which could lead to a reduction of the debt to equity ratio, and of the financial leverage on the project IRR.

### Market Risk

In terms of volume, the markets for GTL fuels are still in an early test phase and actively researched. Market economics are still dependent on government incentives.

In terms of price, there is not yet

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a market price for GTL fuels. Furthermore, the feedstock being gas, and the final product being an oil product, producers are exposed to a divergence between the prices of oil and gas at a time when these markets are increasingly less correlated.

Finally, GTL new producers would be selling to a very limited network of buyers, *i.e.* refiners and specialized distributors, thus limiting their bargaining power. Eventually the same corporations are likely to sponsor the GTL plants and off-take their production, and price transfer issues may appear.

In response to a lack of proven market, project financiers are likely to request a volumetric off-take support, which is not uncommon for petrochemical projects, notably in the Middle East. They are also likely to request a minimum price support from an acceptable entity to mitigate price risk due to the lack of pricing power of the producers and to potential divergence between the prices of gas and oil.

To optimize the financial scheme, this acceptable entity would be a self-standing marketing company that could provide project financiers with sufficient mitigation to the risks above.

As far as a risk/reward sharing formula between project financiers and the group of developers, marketers, and their respective shareholders, companies rated well above investment grade.

As an example, ExxonMobil, BP, Shell, ChevronTexaco and Conoco would have little incentive to use the project financing leverage in the conditions likely to be imposed

presently by the project financiers in view of the above elements, because the risk mitigation requirements would equate the facility to a corporate loan at a price premium.

Presently the use of project finance for GTL projects seems limited to very few cases:

- When the project is developed in a country where the sponsors would have already reached the limits on the risk that they would be prepared to take in that country. Hence they agree to pay a premium to pass on the political risk to banks, and other financial institutions and insurance companies.

- When a project is motivated by partnership reasons, *i.e.* when one of the partners would need external financing, such as the local partner. GTL is likely to be exported from the gas rich country to consumers' countries. Hence, bankers would have the ability to secure their loans with export revenues, and projects may benefit from stronger financial ratings than the ones of that local partner, therefore the project may incur a better financial cost than the cost of a corporate loan to this partner.

- When one of the partners, *e.g.* the local one, does not have access to the long-term corporate lending market.

In the cases described above, project financing can be limited to the share of the partners in need of external financing through direct lending mechanism by the partners that have no such needs.

It should also be noted that the success of such financing will depend heavily on the banking mar-

ket for that region. As for the Middle East, many project financings are in the making, offering the few banks involved in this region to cherry pick the best risk/reward proposals or to request more strenuous risk mitigation. GTL projects are unlikely to be favored compared to projects involving well-established products, markets and technologies (*e.g.* pipelines, petrochemicals, LNG).

### GTL Closer to an Equity Play

GTL projects are unlikely to benefit yet from the financial leverage that project financing offers. They remain still closer to an equity play. Other financial solutions would be more appropriate to their financing, including first the financing by the project developers that could be complemented by private equity and mezzanine debt, or debt with equity kickers.

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