TRINIDAD AND TOBAGO: NATURAL GAS MONETIZATION AS A DRIVER OF ECONOMIC AND SOCIAL PROSPERITY

BY

DAVID SMALL

DIRECTOR OF POLICY AND PERFORMANCE
MINISTRY OF ENERGY AND ENERGY INDUSTRIES

TRINIDAD AND TOBAGO
ABSTRACT

Background
The paper will outline the results of the government’s strategies to deliberately develop the country’s globally modest reserves of natural gas. While the country is certainly small and its gas reserves relatively moderate when compared to the other major gas players, it is clear that Trinidad and Tobago has emerged as one of the very important players across a wide spectrum of natural gas industries.

Aims
The paper aims to capture holistically the outcomes of the development of the country’s gas reserves which was a direct policy goal of the Government, in a situation where the country is a small-island developing economy with all the attendant issues that such an economic situation brings.

Methods
The paper will utilize analyses based on the authors’ significant experience in the Trinidad and Tobago oil and gas industry in addition to examination of globally significant events and data that can or have impinged upon gas industry development in the country.

Results
Specific areas that the paper will address will include how Trinidad and Tobago has become a world-leading exporter of first stage petrochemicals and the global drivers that have impinged on their success.

In addition, the paper will outline the stages that the country went through that have led it to become one of the leading LNG exporters in the world. Included here will be a detailing of the strong strategic hand that the country has as a valued and stable provider of key LNG supplies to markets in the USA.

The paper will also outline some of the Government’s current activities including:
- Moves to further Government’s interest across the entire LNG value chain
- Moves to monetize cross border gas reserves with Venezuela
- Exploration efforts to prove up new gas reserves
- Country’s rise to Presidency in the Gas Exporting Countries Forum

Summary/Conclusions
The paper will then summarize the results of the country’s involvement in various elements of the natural gas industry and at the same time explain the impact that such involvement on the country’s economy.
GENERAL BACKGROUND

Trinidad and Tobago is a twin-island state which lies off the coast of Venezuela and covers an area of 5,128 sq. km. Trinidad, the larger island (4,820 sq. km) is home to 95% of the total population of 1.3 million. The western portion, particularly along the coast of Trinidad is the location of much of the natural gas-based industries, whereas Tobago depends more on tourism and agriculture.

GNI per capita in 2004 was estimated at US $10,500 thus分类着 Trinidad and Tobago as an upper middle income country as described in the World Development Report of the World Bank. GDP growth in 2005 is estimated at 6.5% for 2005 due to the rise in energy prices. The country is ranked as 54th in the Human Development Index published 2004 by the UNDP.

Trinidad and Tobago, an important oil and natural gas producing country, is fast moving forward towards the status of an industrialized country. Economic growth has averaged between 3.2 and 5.5 per cent per annum over the past six years and was at 4.5 in 2003 and real GDP growth was 6.2% in 2004, and rose slightly in 2005.

Growth has been driven primarily by the petroleum sector, which expanded by some 8% over the period. Energy continues to dominate the economy with natural gas usurping the dominant role of crude oil production in the economy.

However, the significant reserves of natural gas and government initiatives have encouraged huge inflows of foreign direct investment into downstream gas-based projects. The investment boom in the energy sector spurred activity in the construction, distribution, transport and the local manufacturing sectors. It is clear that the country is becoming an industrialized one. Its problems and priorities are also changing accordingly. Environment protection, poverty alleviation and educational system expansion have become important targets for Government policy.

Through its Vision 2020 objective, the Government seeks to systematically install a long-term planning framework to inform development and the implementation of initiatives covering all sectors of the society with the ultimate goal of achieving developed country status for Trinidad and Tobago by the year 2020.

The proposed comprehensive and integrated Multi-Sectoral Development Plan (MDP) will provide the roadmap to 2020 and will define the budgetary and planning processes to direct investment towards those specific areas necessary for building on the Vision 2020 framework.

Trinidad and Tobago offers investors a stable environment. The country simply put, has a history of doing what it says. In fact, a recent Institutional Investor magazine global survey of banking executives names Trinidad and Tobago as the Caribbean region’s most secure investment location.
The sanctity of contracts is very important to multinational firms, and it's one of the things that makes Trinidad attractive. The National Gas Company (NGC), negotiates long-term purchase and sale contracts with upstream producers and downstream users respectively. These contracts have not been tinkered with or renegotiated, despite several changes of government.

Trinidad and Tobago is committed to an open, market-driven economy and the encouragement of private enterprise and foreign investment. It has export market access with the United States, the European Union, Canada and numerous other nations via special agreement. What's more, it's currently seeking to join the North American Free Trade Agreement (NAFTA).

Yet another big asset is the country's skilled workforce, renowned for its cooperative spirit. Trinidad and Tobago offers a stable industrial relations climate and a reservoir of skilled manpower which can be harnessed to attain the most demanding standards of performance consistent with the requirements for global competitiveness.

**POLICY INITIATIVES ON GAS USE**

Trinidad and Tobago is a country that is blessed with hydrocarbon resources far in excess of its domestic needs. At the time of the first major natural gas discoveries made by Amoco (now BP) in the late 1960's, there was very little domestic use to which these resources could be applied. In addition, the concept of seeking to export these resources was an option that was not feasible.

A pivotal turning point in Trinidad and Tobago's energy policy occurred in the early 1970s when the country's first Prime Minister, The Right Honourable Eric E. Williams convened a multi-sectoral conference on the optimization of petroleum resources. The blueprint that emerged focused on how to use the country's surplus revenues from the export of oil and refined products to develop a world-class gas-based industry including an industrial estate and a port. From that point onwards, policies that favoured natural gas as a premium energy resource and as a potential generator of foreign exchange were supported. This signaled a step-change in Government thinking, an intention to monetize natural gas in order to help offset the fall in gross national revenue as the oil sector began to show signs of decline.

**NATURAL GAS**

Trinidad and Tobago contains less than one percent of known global reserves of natural gas. Despite this small share of global gas reserves, the country has been successful in establishing one of the leading gas based export centers in the world. These exports are principally ammonia, methanol, steel and more recently, liquefied natural gas (LNG). In both the cases of ammonia and methanol, Trinidad and Tobago is already the world's leading exporter. In the case of LNG, with the start-up of Train IV in December 2005, Trinidad and Tobago is among the top five exporting countries.
Table 1 below, outlines the natural gas reserve position of Trinidad and Tobago.

**Table 1. Summary of Natural Gas & Oil Resource for Trinidad and Tobago as of Jan. 01, 2005**

<table>
<thead>
<tr>
<th></th>
<th>Gas (TCF)</th>
<th></th>
<th>Oil (MMBBLs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2003</td>
<td>2004</td>
<td>2005</td>
</tr>
<tr>
<td>Proved</td>
<td>20.8</td>
<td>18.8</td>
<td>18.77</td>
</tr>
<tr>
<td>Probable</td>
<td>8.3</td>
<td>8.6</td>
<td>9.03</td>
</tr>
<tr>
<td>Possible</td>
<td>6.1</td>
<td>5.8</td>
<td>7.07</td>
</tr>
<tr>
<td>TOTALS</td>
<td>35.2</td>
<td>33.2</td>
<td>34.87</td>
</tr>
</tbody>
</table>

**Exploration Leads** ~ 29 TCF

**Unrisked Gas leads** ~ 30 TCF

Source: Ministry of Energy and Energy Industries

The numbers above clearly support the view that the country has been unusually successful in creating an environment in which gas-based export industries flourish. When one considers the small size of both the country and of its reserve base, *a priori*, it becomes clear that this success must have been predicated on some unique combination of institutional, commercial and regulatory arrangements.

The importance of natural gas to the economy has increased rapidly over the last 10 years. It has attracted by far the most significant amount of foreign investment during this period.

Natural gas production in 2005 averaged approximately 3.2 billion cubic feet per day. All of the natural gas used in Trinidad & Tobago with the exception of “own use” gas (i.e., gas used by producers for their own purposes) and gas for LNG production is presently purchased from producers (primarily BP, EOG, British Gas/Texaco) by NGC. It is transported by NGC and resold to consumers. Some 100mmscmd of gas is also produced by NGC’s compression platforms from low pressure associated gas which would otherwise have been flared. However, gas used by the LNG plants is provided directly by offshore producers to the LNG facility.
Natural gas is used in the production of petrochemicals (ammonia, methanol and urea) iron and steel, electricity, natural gas liquids (propane, butane and natural gasoline) cement, scrap iron substitutes and for a host of light industrial manufacturing purposes. There are existing plans for additional ammonia and methanol plants, two aluminium smelter project, an ethylene project and a polypropylene project, among others. Figure 1 below shows the average utilization of natural gas in 2005. 2006 will see gas utilization cross the 4.0 bcf/d threshold when the Atlantic LNG Train 4 plant achieves full production levels.

**Figure 1 – Natural Gas Utilization**

Commencing in 1988, the NGC moved to a system of indexed gas pricing, to companies in the petrochemical sector. With the price of gas, a main cost component, tied to product price, producers are better able to ride out periods of unfavourable market conditions. With the petrochemical markets enjoying one of the longest periods of sustained high prices (3 yrs+) both the NGC and its customers have been enjoying record profits!
LIQUEFIED NATURAL GAS (LNG)

Having begun to reach the limits of growth in the other gas-based sectors, the next step for the country became obvious. These ambitions were realized when the Atlantic LNG plant came on-stream in the middle of 1999. At 3 million tones per year (mtpy), the plant represented a modest entry into the global LNG market.

On March 13th 2000, less than 12 months from start-up of the first train, the agreement for expansion of the Atlantic LNG facility was signed with the Government of the Republic of Trinidad and Tobago for a 2-train expansion.

Site preparation began at the end of March 2000 and Train 2 came on-stream in September, 2002. Train 3 was completed and delivered its first cargo in May 2003. The nominal capacity of each of these two trains is 3.3 million tonnes per year, which is about 10% greater than that of Train 1.

In June 2003, one month after Train 3 began production, the Government sanctioned the further expansion of the LNG industry in Trinidad and Tobago to a fourth train with a processing capacity of 800 million cubic feet per day. It is currently the largest single LNG train in the world with a capacity of 5.2 mtpe and came on-stream in December 2005. The fourth train is expected to reach full production capability in the first half of 2006.

From a situation of having no LNG capacity the country has catapulted itself into being amongst the largest LNG producers in the world. Total country capacity is 15.2 mtpy placing it amongst the top five producers in the world.

THE ROLE OF THE GOVERNMENT

Trinidad’s petroleum industry has evolved from an oil-dominated industry to one now driven by natural gas. The rapid growth of Trinidad’s gas industry, from less than 500 mmcfd in 1993 to a current daily production of in excess of 4.0 bcfd (including ALNG Train 4 at full capacity) can be attributed to an exceptional exploration track record and a clear vision by the Government.

In the 1970’s, Government stimulated development of the energy sector by participating as an equity investor either on its own or on a joint venture basis. More recently, the State has been divesting itself of its interests except where these interests are seen as being of strategic importance.

In the first round of expansion of the sub-sector in the 1980’s, the Government of Trinidad and Tobago was the principal source of equity in ammonia, methanol, steel and electricity projects. With divestment of much of Government’s equity interests in the nineties the beginnings of the wave of foreign investment began. Certainly as the 1990’s progressed into the 2000’s the country has seen the “second round “ of expansion in ammonia, methanol, LNG and electricity being dominated by foreign direct investment.
This has been as a result of clear strategic interventions by way of Government policy and judicious injections of Government equity to ensure that the benefits of the resource accrue to national stakeholders.

The accelerating recovery of the global economy also helped to create favorable demand conditions for Trinidad and Tobago’s energy exports which are enjoying significantly higher prices.

Standard and Poors raised the country’s long-term foreign currency sovereign rating to BBB+ in 2004, citing the strength of the fiscal and external balance sheets and the country’s strong growth prospects. This was the second successive upgrade for Trinidad and Tobago in just over one year.

Prospects for growth in 2006 are good as prices for oil, petrochemicals, and liquefied natural gas are expected to remain high, and foreign direct investment continues to grow to support expanded capacity in the energy sector.

CREATION OF WEALTH GENERATION MECHANISMS

The overarching strategy of the Government is the achievement of developed nation status for Trinidad and Tobago by the year 2020. One of the key elements that will underpin the achievement of this objective is the utilization of revenues earned from the exploitation of the country’s hydrocarbon resources in a manner which supports overall national development.

The draft National Strategic Development Plan for Trinidad and Tobago to achieve developed country status by the year 2020 proposes five development priorities to serve as foundations for achieving developed nation status. These are developing innovative people, nurturing a caring society, governing effectively, enabling competitive businesses and investing in a sound infrastructure and environment.

Vision 2020 is thus a vision for the economic social and political development of the country. The achievement of the stated goals of Vision 2020 requires a transformation of the economy. Historically, Trinidad and Tobago has relied on the energy sector for the majority of its wealth, making it susceptible to industry and market volatility. The economy is now sufficiently robust and some of the wealth accumulated from hydrocarbon exploitation over the years is being diverted into the development of other aspects of the economy, with the aim of achieving diversification and sustainable growth.

With this in mind the Government has clearly outlined its objectives and is pursuing several avenues to ensure that the country earns the maximum possible revenues from the oil and gas business.
ENSURING CONTINUED ECONOMIC PROSPERITY

As noted earlier, the revenues from the energy sector are a key element in the Government's plans for the future of the country. In order to sustain and grow this revenue base the Government has employed several strategies

Upstream

In 2005, the Government completed negotiations with several companies resulting from the 2003-04 Competitive Bid Round where bids were sought for 10 offshore blocks. The search for new oil and gas reserves in the waters surrounding Trinidad and Tobago will be reinvigorated over the next 24 months. The guaranteed work obligations of the various contractors will see the drilling of at least 13 exploratory wells in the various blocks. Such a significant spend and volume of exploration activity also has the potential for increased local participation along the supply chain and the GORTT expects that the local supply sector will rise to the challenge. In January 2006, the Government announced a new licensing round for several more offshore blocks.

Downstream

Analysis of project proposals continues apace. There is in place an aggressive schedule which will see several large projects potentially take investment decisions in 2006 and beyond.

Projects are in the pipeline to go further downstream of natural gas to produce new products, and these include Melamine, Urea-Ammonium Nitrate and Acetic Acid. Further diversification will result from the aluminium industry, an entirely new development in Trinidad and Tobago, and for which plans are well on the way. A technical agreement has been signed for the establishment of an aluminium smelter and related downstream facilities.

Additionally, the Iron and Steel industry will be further expanded through construction of an integrated Iron and Steel complex which will contain several downstream plants.

The sum total of these investments is in excess of $US 6 billion dollars. These projects will create a total of over nineteen thousand jobs by the peak of the construction phase, and some three thousand three hundred permanent jobs

Investments in the LNG Value Chain

LNG now represents the single largest utilization to which the country’s natural gas resources have been employed. In excess of 50% of the country’s reserves of gas are now committed to LNG export. With this being the case, the Government has been seeking investment opportunities along the LNG value chain. At present the Government’s direct involvement in LNG is limited to the State gas company’s (National gas Company) shareholdings in ALNG Train 1 (10%) and Train 4 (11.11%).
Greater government participation in the LNG value chain can create new opportunities for the generation of revenue. In particular, greater involvement in the transportation (shipping), marketing and regasification of LNG may allow the government to extract additional revenue from these three sectors of the LNG value chain.

Local Value Added

The Government recognizes that with the ongoing and expected energy sector construction activities in the country, significant opportunity is available to increase local value added from these capital intensive projects.

Several initiatives are underway here including the establishment by the Government of a fabrication yard in the south-western portion of Trinidad that is allowing upstream companies to construct offshore structures in Trinidad and Tobago.

A new 750 acre Industrial Estate is currently being developed to accommodate new industries including an aluminium smelter and an associated power plant, downstream petrochemical plants and iron and steel facilities.

In addition, the Government has established a national local content committee which will be charged with ensuring that strategies are developed and employed that allow for greater gains to the country.

Oil and Gas Taxation Review

The Government has recently completed its review exercise with respect to taxation issues on crude oil production. With respect to gas, the matter is still under review by the Ministry Of Finance which is responsible for both exercises. What has become clear is that with respect to the natural gas sector, several options are available to extract additional tax revenue.

The introduction of new taxes on the sale of natural gas could lead to the generation of additional tax revenue. The application of increased rates of royalty may, in some cases, also lead to similar results.

The present system of tax-holiday incentives for energy-sector companies is also under review. The introduction of shorter tax holidays or lesser levels of taxation-relief may allow the government to share in the profits of energy-sector ventures earlier in the lifetimes of these projects.
TRANSLATING ECONOMIC PROSPERITY INTO SOCIAL PROSPERITY

The Government of Trinidad and Tobago remains committed to an integrated and people-centered policy of social and economic development with a target of reaching developed country status by the year 2020.

The Government is mindful that despite growing national economic prosperity, major socio-economic challenges remain. The collaboration of civil society and the private sector has been sought in the achievement of social development objectives.

The social sector has a key role to play in facilitating the accomplishment of the major goals of Vision 2020. In fact, two of the five development priorities for the attainment of developed country status are contingent on human resource investments, developing innovative people and nurturing a caring society.

Health

Major new initiatives of the Government in the area of health include the provision of free healthcare at all public hospitals and in certain cases, at private hospitals. In addition, there is a programme which allows for the provision of free prescription drugs, via participating pharmacies, to patients with specific chronic diseases, using a Government-approved range of pharmaceuticals.

Education

The Government indicates that Education and Training are critical factors in the nation's progress. As at January 01, 2006, the Government of Trinidad and Tobago Government is underwriting the provision of free tertiary tuition, via an improved Government tuition assistance programme. Free tuition would now be available to Trinidad and Tobago nationals pursuing undergraduate programmes, including distance-learning programmes.

Postgraduate students attending local and regional public tertiary institutions are now eligible for grants covering 50% of their tuition. Those attending private tertiary institutions can access 50% of tuition up to a maximum of TT$ 10,000 per year.

University of Trinidad and Tobago

With respect to tertiary education, the Government of Trinidad and Tobago is embarking upon a radical programme in support of expanding the number of student places available for tertiary education. Government envisages a three hundred percent increase in tertiary institution places within the next five to seven years.
A major step in achieving this goal was taken with the establishment in 2004 of the University of Trinidad and Tobago. This brand new university will assist in dealing with the identified need for new universities and post secondary institutions with a different focus from the traditional tertiary level institutions.

CONCLUSION

The importance of the hydrocarbon business in Trinidad and Tobago cannot be overstated. During 2005, the Trinidad and Tobago economy grew at a rate exceeding 7 percent compared with 6.5 percent in 2004, as the energy sector continued to dominate real activity in the local economy.

Many industry observers have pointed out that Trinidad and Tobago's ability to get into LNG so quickly after the initial decision was taken was part and parcel of what has come to be known internationally as the "Trinidad and Tobago Model of Energy Development.

Through its Vision 2020 objective, the Government is seeking to systematically install a long-term planning framework to inform development and the implementation of initiatives covering all sectors of the society with the ultimate goal of achieving developed country status for Trinidad and Tobago by the year 2020.

It is thus clear that the Government is continuing to continue develop strategies for increasing the overall benefits which accrue to the nation from the successful monetization of gas reserves through social and economic policies and programmes, that result in economic growth which can be translated into achievement of wider social objectives.
REFERENCES

Annual Administrative Reports 2002-2005 (Unpublished Drafts)- Ministry of Energy and Energy Industries, Trinidad and Tobago

BP Statistical Review of World Energy 2005

Central Bank of Trinidad and Tobago. “Review of the Economy 2004 and Prospects for 2005”


Review of the Economy 2005 – Ministry of Finance, Government of Trinidad and Tobago


Small, David “LNG Trade in the Atlantic Basin” in Global Energy Report Published to Mark the Fifth Ministerial Meeting of the Gas Exporting Countries Forum April (2005)


Small, David, “Trinidad And Tobago: An Energy Sector Investment Success Story” World Energy Congress, September 2004


Social and Economic Policy Framework 2006-2008 Ministry of Finance, Government of Trinidad and Tobago
Figures

Figure 1  Natural Gas Utilization 2005

Tables

Table 1.  Summary of Natural Gas & Oil Resource for Trinidad and Tobago as of Jan. 01, 2005

/