

Leave of Absence

Thursday, November 13, 2008

SENATE

Thursday, November 13, 2008

The Senate met at 1.30 p.m.

PRAYERS

[MR. PRESIDENT *in the Chair*]

LEAVE OF ABSENCE

Mr. President: Hon. Senators, I have granted leave of absence to Sen. The Hon. Emily Gaynor Dick-Forde and Sen. Wade Mark, who are both out of the country.

SENATORS' APPOINTMENT

Mr. President: Hon. Senators, I have received the following correspondence from His Excellency the Acting President, Sen. The Hon. Danny Montano:

“THE CONSTITUTION OF THE REPUBLIC OF TRINIDAD AND TOBAGO

By His Excellency DANNY MONTANO, LLB., BComm.,
CA., Acting President and Commander-in-Chief of
the Republic of Trinidad and Tobago.

/s/ Danny Montano
Acting President.

TO: MR. NOEL GAYLE

WHEREAS Senator Dr. Emily Gaynor Dick-Forde is incapable of performing her duties as a Senator by reason of her absence from Trinidad and Tobago:

NOW, THEREFORE, I, DANNY MONTANO, Acting President as aforesaid, acting in accordance with the advice of the Prime Minister, in accordance with the power vested in me by section 44 of the Constitution of the Republic of Trinidad and Tobago, do hereby appoint you, NOEL GAYLE, to be temporarily a member of the Senate, with effect from 13th November, 2008 and continuing during the absence from Trinidad and Tobago of the said Senator Dr. Emily Gaynor Dick-Forde.

Given under my Hand and the Seal of the President
of the Republic of Trinidad and Tobago at the
Office of the President, St. Ann's, this 7th day
of November, 2008.”

Senators' Appointment
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“THE CONSTITUTION OF THE REPUBLIC OF TRINIDAD AND TOBAGO

By His Excellency Professor GEORGE MAXWELL RICHARDS, T.C., C.M.T., Ph.D., President and Commander-in-Chief of the Republic of Trinidad and Tobago.

/s/ G. Richards

President.

TO: MR. RYAN SPICER

WHEREAS Senator Wade Mark is incapable of performing his duties as a Senator by reason of his absence from Trinidad and Tobago:

NOW, THEREFORE, I, GEORGE MAXWELL RICHARDS, President as aforesaid, acting in accordance with the advice of the Leader of Opposition, in exercise of the power vested in me by section 44 of the Constitution of the Republic of Trinidad and Tobago, do hereby appoint you, RYAN SPICER, to be temporarily a member of the Senate, with effect from 13th November, 2008 and continuing during the absence from Trinidad and Tobago of the said Senator Wade Mark.

Given under my Hand and the Seal of the President of the Republic of Trinidad and Tobago at the Office of the President, St. Ann's, this 12th day of November, 2008.”

OATH OF ALLEGIANCE

Senators Noel Gayle and Ryan Spicer took and subscribed the Oath of Allegiance as required by law.

ORAL ANSWERS TO QUESTIONS

**Official Residence
(Details of Payment)**

87. Sen. Mohammed Faisal Rahman asked the hon. Minister of Planning, Housing and the Environment:

- (a) Would the Minister indicate to this Senate whether the works being undertaken at the Prime Minister's residence are repairs, renovations or additions?

- (b) If the works are repairs or renovations, would the Minister inform this Senate of their nature and costs?
- (c) State whether there is one or more than one contractor?
- (d) If the works are additions, would the Minister indicate whether these additions were in the original design?

The Minister of State in the Ministry of Planning, Housing and the Environment (Sen. The Hon. Tina Gronlund-Nunez): Mr. President, unfortunately the answer to this question is not ready at this time. We would need additional time to answer.

Question, by leave, deferred.

**Trinidad Hilton
(Presidential Suites)**

88. Sen. Mohammed Faisal Rahman asked the hon. Minister of Trade and Industry:

- (a) Would the Minister inform this Senate of the status of the presidential suites proposed for the Trinidad Hilton?
- (b) If the suites would no longer be constructed, could the Minister inform this Senate of any alternative arrangements being made for Heads of Government and other dignitaries?
- (c) If alternative arrangements are being made, would the Minister state whether it is the Government's intention to bring these plans to Parliament prior to their execution?

The Minister of Trade and Industry and Minister in the Office of the Prime Minister (Sen. The Hon. Dr. Lenny Saith): Mr. President, the reply to question No. 88 is as follows:

With respect to (a), the status of presidential suites proposed for the Trinidad Hilton—under Phase II of the renovations of Hilton Trinidad and Conference Centre Project, four presidential suites would be completed for the Summit of the Americas Conference. With respect to the Commonwealth Heads of Government Conference, eTeck is presently in the process of negotiating the Phase III package of renovations of the Hilton Trinidad Conference and Centre Project.

With respect to (b), for the Summit of the Americas Conference, no alternative arrangements are required with respect to the Trinidad Hilton and Conference Centre. The four presidential suites would be ready for the conference.

With respect to the Commonwealth Heads of Government Conference, it is expected that renovations under Phase III of the Hilton Trinidad and Conference Centre Project would be completed in enough time to meet the accommodation requirements of that conference in respect of the Trinidad Hilton.

With respect to (c), since no alternative accommodation arrangements are being made, there is no need to respond to (c).

EXCISE DUTY (COMPRESSED NATURAL GAS) ORDER

The Minister in the Ministry of Finance (Sen. The Hon. Mariano Browne): Mr. President, I beg to move the following Motion standing in my name:

Whereas it is provided by section 13(2) of the Excise (General Provisions) Act, Chap. 78:50 that the Minister may by Order impose any new excise duty or increase any excise duty and from the date of publication of the Order in the *Gazette* and until the expiry thereof the duties specified in the Order shall be payable in lieu of the duties payable prior thereto:

And whereas it is provided by the said subsection that every Order issued under that subsection shall, after four days and within twenty-one days from the date of its first publication, be submitted to the Senate and the House of Representatives and the Senate and the House of Representatives may by Resolution confirm, amend or revoke such Order, and upon publication of the Resolution of the Senate and the House of Representatives in the *Gazette* the Resolution shall have effect and the Order shall then expire:

And whereas the Excise Duty (Compressed Natural Gas) Order, 2008 was made under section 13(2) of the Excise (General Provisions) Act, and first published in the *Gazette* on the 24th day of October, 2008:

And whereas it is expedient to confirm the said Order:

Be it resolved that the Excise Duty (Compressed Natural Gas) Order, 2008, be confirmed.

Mr. President, the Order which is before this Senate was made by the Minister of Finance, pursuant to section 13(2) of the Excise (General Provisions) Act, Chap. 78:50. By that section, the Minister of Finance is empowered to: “impose any new excise duty or increase any excise duty” by way of an Order.

The Order, which is the subject of this Motion, revokes the earlier 1999 Order, which imposed a new excise duty of 20.414 cents per litre on compressed natural gas and imposed instead a lower excise duty of 5 cents per litre.

An Order is made under section 13 of the Excise (General Provisions) Act, which must be submitted to Parliament after four days and within 21 days from the date of the first publication. Parliament may by resolution confirm, amend or revoke the Order. Upon publication of the resolution of Parliament, the resolution shall have effect and the Ministerial Order shall expire. If the published Order is not presented to Parliament within the specified time, it shall cease to have effect and any excise duty paid by a consumer after the expiration of the Order shall be refunded to the consumer.

The Order which is before this honourable Senate was published in the *Gazette* on the 24th day of October 2008, was presented and confirmed in the Lower House on November 07, 2008 and is presented to the Senate today, the 13th day of November, 2008. This latter date being more than four days after and within 21 days of the date of the first publication of the Order. The Order has therefore satisfied the procedural requirements of the law.

The estimated annual sales of compressed natural gas amount to approximately six million litres. There are two companies that currently market compressed natural gas in Trinidad and Tobago. They are the National Petroleum Marketing Company, which controls 80 per cent of the market and Automotive Components Limited, which controls the remaining 20 per cent. Automotive Components Limited is currently the sole installer of compressed natural gas units and also undertakes the testing and certification of all compressed natural gas kits.

This Order, in reducing the excise tax on CNG, facilitates modification to the compressed natural gas pricing structure. The current retail price of \$1.07 per litre for compressed natural gas consists of the following components:

- (i) the price ex-Natural Gas Company, which is the price the Natural Gas Company charges for its gas;
- (ii) the excise duty, which is a tax on fuels paid by the users of compressed natural gas;
- (iii) the amortization cost, which is allowed to gas retailers to recover the capital expenditure incurred in establishing service stations;
- (iv) the wholesaler margin, which in this case is applicable only to the National Petroleum Marketing Company as the sole wholesaler of compressed natural gas and represents their profit margin for the sale of compressed natural gas;
- (v) the refueller margin, which is allowed to entities which purchase compressed natural gas directly from the National Gas Company.

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Currently, Automotive Components Limited is the sole refueller in the industry and this margin applies only to them.

- (vi) The dealer margin which is allowed to retailers of compressed natural gas.
- (vii) The Road Improvement Tax which is currently set at 5 cents per litre.

Mr. President, the pricing structure for compressed natural gas prior to this Order was as follows:

Margin/Profit	NPMG (cents per litre)	Refuellers and other Marketers (2008) (cents per litre)
Price Ex-NGC	23.386	40.465
Excise Duty	20.414	20.414
Amortization	19.200	19.200
Wholesaler Margin	19.000	Nil
Refueller Margin	Nil	1.921
Dealer Margin	20.000	20.000
Road Tax	5.000	5.000
Retail Price	107.000	107.000

Mr. President, an excise duty is a tax charged on the domestic production of specified goods and is reflected in the price of the final product to the consumer.

This Order proposes the reduction of the excise duty on compressed natural gas by 15.414 cents per litre in line with the adjusted excise duty on diesel and kerosene. The retail price of \$1.07 per litre will be maintained. This means that the pricing structure can be adjusted to allow for higher margins to be earned by the companies involved in the production and distribution of compressed natural gas.

Further to consultations with the Ministry of Energy and Energy Industries, the Ministry of Finance proposes the following adjustments to the price structure:

- (i) The price paid by the National Petroleum Marketing Company to NGC would be increased by 7.714 cents per litre from 23.386 cents per litre to 31.1 cents per litre. This would reduce the National Gas

Company's subsidy to the National Petroleum Marketing Company by approximately one-half to \$450,000 in 2008.

- (ii) The margin earned by the National Petroleum Marketing, Company would increase by 7.7 cents per litre. The increased margins would assist the National Petroleum Marketing Company in meeting the increased cost of the upgrade of dispensing equipment and in overheads such as electricity.
- (iii) The margin earned by Automotive Components Limited will be 17.335 cents per litre instead of the current 1.921 cents per litre; an increase of 15.414 cents, the full amount of the reduction in the excise tax. This increase is expected to facilitate the upgrade of the company's plant and equipment.

Mr. President, I might add that the National Gas Company is wholly owned by the Government of Trinidad and Tobago.

The CNG pricing structure after this Order will be as follows:

Margins	NPMC Proposed (cents per litre)	Refuellers and other Marketers Proposed (cents per litre)
Price Ex-NGC	31.100	40.465
Excise Duty	5.000	5.000
Amortization	19.200	19.200
Wholesaler/Dealer Margin	26.700	Nil
Refueller Margin	Nil	17.335
Dealer Margin	20.000	20.000
Road Tax	5.000	5.000
Retail Price	107.000	107.000

Mr. President, as articulated on several occasions, our Government's policies and decisions are guided by a defined goal as espoused in the national strategic plan called Vision 2020. This goal is to be achieved by the execution of a number

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of strategies. This plan is built on five developmental pillars. Increased domestic use of CNG to power vehicles is consistent with these developmental pillars and the provision of this Order is one of Government's measures to stimulate domestic use of CNG in transportation. Mr. President, the benefits of CNG will accrue both to the consumer as well as the wider society. The benefits which have been ascribed to CNG and the usage of CNG include the following:

- (i) environmental benefits arising out of fewer emissions as hydrocarbons are virtually eliminated;
- (ii) improvement in engine wear and tear as the engine runs cleaner and lasts longer with the elimination of carbon deposits, which create friction, and promotes engine wear;
- (iii) cleaner and longer lasting emissions of spark plugs and catalytic converters, also arising out of the elimination of carbon deposits, which clog and dirty the plugs and converters;
- (iv) fewer oil changes as carbon deposits which dirty the engine's oil are eliminated;
- (v) reduction of engine noise due to the high octane rating of natural gas;
- (vi) safer than gasoline when spills occur as CNG disperses in the air reducing its potential to cause explosions.

There are a number of observations which are relevant to Government's efforts in promoting the use of CNG. Firstly, it is recognized that current usage of CNG is low. The use of CNG as a fuel started around 1990 and had steady growth until 1997 with about 500 conversions per year. According to Automotive Components Limited, the only existing authorized installer, approximately 5,000 conversions have been made since inception. The growth rate levelled off since then to the present with about 50 new conversions taking place per year. It is estimated that only 3,500 vehicles are currently using CNG.

Secondly, the major problem that CNG users face is the inconvenience to refill as a result of an insufficient number of service stations providing CNG and the concomitant long lines at those stations that do.

Thirdly, converting to CNG does not preclude the use of gasoline as most cars come provided with a dual option; the motorist can change to either fuel with the flip of a switch. I wish to add that the Ministry of Energy and Energy Industries in conjunction with the Ministry of Planning, Housing and the Environment, the

National Gas Company of Trinidad and Tobago and the National Petroleum Marketing Company Limited are jointly developing proposals for other measures to address problems faced by vehicle owners and to encourage them to adopt the use of CNG as opposed to petrol. I might add as well that the National Petroleum Marketing Company plans to establish an additional two stations in the course of the next 18 months and to convert two existing stations to the fast-fill, therefore reducing waiting times.

Mr. President, the provisions of this Order and the proposed effects of its implementation constitute another building block toward the achievement of our Vision and to promote competitive business in the natural gas industry, encourage investment in appropriate infrastructure and contribute to a cleaner environment for Trinidad and Tobago. Furthermore, providing a cleaner environment is indicative of a more caring society and can be expected to lead to healthier and more innovative people.

Mr. President, I can see no reason for anyone to take issue with Government's strategy of promoting the conditions that will expand the distribution of CNG in this country and increase its use in vehicles. The Government's policy on CNG, in addition to being appropriate for the development of Trinidad and Tobago, is also consistent with the international thrust of preserving the environment. The *World Energy Outlook 2008*, published by the International Energy Agency in commenting on the world's energy system noted, and I quote:

“Preventing catastrophic and irreversible damage to the global climate ultimately requires a major decarbonisation of the world energy sources.”

Countries throughout the world are implementing and expanding measures to promote the use of CNG for both public transport and for private vehicles. Mr. President, I would give some examples of this and they are as follows:

- (i) India has mandated the use of the public transportation system in New Delhi and Ahmedabad where most buses now use CNG.
- (ii) In the United States of America, tax credits are offered for the use of CNG.
- (iii) Canada has developed and produced CNG fuelled engines for buses, trucks and taxis.
- (iv) In Iran, approximately 600,000 vehicles have been converted to the use of CNG. There are plans to double the number of refuelling stations in Iran and approximately 60 per cent of locally produced cars must have CNG in addition to the use of gasoline.

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- (v) In Egypt, approximately 63,000 vehicles are using CNG.
- (vi) In Singapore, the public transportation system is also outfitted with buses that use CNG.
- (vii) In Malaysia it is used for taxis and other public vehicles.
- (viii) In Australia—Brisbane only allows the purchase of buses which use CNG.
- (ix) In Karachi, Pakistan, the Provincial Transport Minister has stressed the need for increased use of CNG in view of the rising fuel cost—of course, that would have changed substantially in the international market—as a means to help save fuel and foreign exchange on one hand and overcome the pollution problem on the other. He has also pointed out that compressed natural gas is a cheaper, safer and a more environmentally-friendly fuel and the government is taking the necessary steps for the laying of a network of CNG throughout the country.

Mr. President, I must point out that an old Chinese philosopher reputed to be the founder of Taoism, Lao Tzu, had this to say: “The journey of a thousand miles must begin with a single step.” Mr. President, this is the continuation of some of the baby steps which were started and we will continue to develop this area.

In the mid-1990s, a visionary PNM Government began a programme to diversify the energy sector away from reliance on oil and to harness the economic potential of natural gas which was in the main, wasted. Today, because of the realization of that vision, Trinidad and Tobago currently supplies the United States of America with approximately 60 per cent of its natural gas imports. As a result, this forms the bedrock of the country’s energy revenues and our tax revenues.

As we did in moving from oil to gas as a major revenue earner, in similar vein, we have embarked on a journey to move from petroleum to CNG as the principal transport fuel. This Order is one step towards the achievement of our objectives and the improvement of the quality of life in Trinidad and Tobago.

Mr. President, in order to effect the reduction in the excise duty and implement the proposed changes to the CNG pricing structure, the Excise Duty (Compressed Natural Gas) Order, 1999 has to be revoked and the new lower

excise duty imposed. These are the provisions of the Excise Duty (Compressed Natural Gas) Order, 2008 now before this honourable Senate. The estimated reduction in the revenue in respect of this excise duty is estimated at \$925,000.

Mr. President, I beg to move.

Question proposed.

2.00 p.m.

Sen. Dr. Adesh Nanan: Thank you, Mr. President. We are aware that natural gas is really the fuel of choice worldwide, and that compressed natural gas (CNG) is a cleaner burning fuel with low emissions and an environmentally-friendly fuel, as a vehicular fuel. As I enter this debate and we have heard in terms of the vision of the Government, let us examine the history of the Government with respect to this particular area of compressed natural gas.

The Minister, in presenting this Motion, gave us a history of 1990. I just want to talk about the 1990s because it is important to know that there was a pilot project in the 1990s under the previous administration. The record shows that there were 3,000 to 4,000 vehicles converted, and there were supposed to be 13 CNG stations.

If we look at when the United National Congress administration came in under the visionary political leader and then Prime Minister, the hon. Basdeo Panday, there was a loss of \$14 million by the National Petroleum Marketing Company Limited. That was due mainly to a wrong conversion rate by the PNM administration. At this time, the United States conversion was TT \$4.25 to US \$1; the conversion rate from bus of natural gas to litres of fuel by the then Ministry of Energy and Energy Industries was 26.6 as the conversion rate. That was found to be wrong and the conversion rate was supposed to be 32.2 instead of 26.6.

At that time the National Petroleum Marketing Company Limited was losing money; it was subsidizing the motorist. So, when we have a particular Excise Duty (Compressed Natural Gas) Order, 2008, we have to be asking several questions. The Minister in his presentation this afternoon mentioned that this reduction in excise duty would give the National Petroleum Marketing Company Limited a bigger margin.

This is not different from the vision of the United National Congress administration in the period 1995—2000, because there was a similar approach made with respect to reduction in excise duty, and it was to give the National Petroleum Marketing Company Limited that advantage, that profit margin, so that

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it would be viable in terms of this CNG thrust. If you look at the history, it is the history that I have to make reference to, in terms of what was encountered at that particular time under the PNM administration, 13 stations were supposed to be selling CNG, and only eight were operational. There were significant maintenance problems with the compressors at that time. It is my information that the compressors that were ordered were the wrong type of compressors. It was taking between six and seven minutes to fill a normal standard car. If you are looking at 30 to 40 cars per day, there would be inordinate long lines—and as I speak of long lines, how can we forget the situation with the health centres under the PNM administration with long lines at health centres under their watch.

These compressors were frequently breaking down and there was a maintenance problem, and nine out of 13 were in operation. These compressors are not cheap. A compressor was costing \$2 million, and two new compressors were installed; one at the Carousel Station in Cocoyea Village, San Fernando, and the other one at Russell Street Service Station. These new types of compressors were able to fill motor cars between two and three minutes. That was what was encountered and that was the remedy that was necessary with respect to compressors—because it was a pilot project—and to make the whole project economically attractive to the National Petroleum Marketing Company Limited.

What about the networks of the CNG service stations? It was the thrust of the UNC administration at that time to expand these service stations throughout Trinidad and Tobago. There was also a whole comprehensive list of incentives designed to make CNG more widespread. What is important is that although there was a comprehensive list, since the infrastructure was not in place, it was felt that it should be left for a longer period until the infrastructure was in place.

What is interesting here is that when we deal with compressed natural gas we are dealing with the methane component of natural gas. The methane component of natural gas—in fact methane has a high octane rating—is important in terms of the octane rating of these fuels. Although compressed natural gas has a high octane rating, the figure 130, and if you compare premium gasoline, which has an octane rating between 90 and 97, if you look at the history of the internal combustion engine, you will see that in the process of the ignition of this fuel with respect to compression ratios, the higher octane fuel will be able to withstand a greater compression, so the compression figures will be higher for compressed natural gas.

However, with respect to premium gasoline and this octane rating, the octane rating is really that you have premature detonations that may take place. So, the higher the octane rating the less of this is taking place and as you know, in terms

of the knocking in the engine, that will reduce the efficiency of an engine. I find it very strange that the Government has been telling motorists, yes, you can use the lower grade fuel instead of premium gasoline. That is important in the internal combustion engine when we are dealing with efficiency.

Yes, we have heard a history of the usage of compressed natural gas globally, India, Canada, Iraq, Australia, Singapore and Malaysia. There are several reports that are comparing compressed natural gas engines to the normal gasoline engine in terms of the efficiency. There are certain thoughts that show that because of the greater efficiency of engines, it may not be such a great advantage in terms of the octane rating of the CNG. I do not know how many vehicles today are fully running on CNG in Trinidad and Tobago, and once there is that dual fuel component to gasoline and a mixture of CNG or diesel and CNG, you have the octane rating not coming into play.

So, that particular component, that so-called advantage of CNG, with respect to octane rating, will be negligible in certain engines. If you are dealing with higher compression ratios, especially for premium gasoline, and you want to use a lower grade of gasoline in these engines, you see the problem right away in terms of that situation with respect to the compression ratios.

In terms of the octane rating of CNG, premium gasoline and lower rating of the other lower fuels in terms of the regular gasoline, we have to ask several questions. I want to put to the Minister in the Ministry of Finance and the Minister of Energy and Energy Industries, you cannot justify the increase in the price of premium gasoline. It is the view that premium gasoline should be subsidized, and because of its value in terms of efficiency, it is also a fuel.

Mr. President: I was just trying to signal you that we are talking about CNG, and I will like you to stay on that subject this afternoon. This is not a debate on the price of gasoline. If anything, it is a debate on the price of CNG, but not really the price of gasoline. Your arguments in terms of compression ratio have some validity and some relevance. I do not think the price of gasoline has anything to do with this at all.

Sen. Dr. A. Nanan: Thank you, Mr. President. I was drawing a reference in terms of the premium gasoline, because I was showing the octane ratings of the two fuels; one is 97 the other one is 130. I would think that the benefit to the consumer would be the premium gasoline in terms of octane rating.

In terms of the compressed natural gas, the increase in the excise duty and the benefits to the National Petroleum Marketing Company Limited, we have seen the

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Government's thrust in this particular direction, and let us examine the compressed natural gas environment as it is today in terms of the conversion kits. The conversion kits are very expensive, also the time for conversion. We are trying to tell the population it is an environmentally-friendly fuel and CNG is the way to go, but we have to look at the situation with respect to the time frame.

The Government made it quite clear that they will not be increasing the price of gasoline over the next two years; that is why I kind of brought it into the debate. If you look at the conversion kits, we heard of one particular distributor dealing with conversion kits. In terms of a time frame, sometimes you have to make an appointment for weeks and months with respect to these conversion kits for the compressed natural gas, for the conversion system, and even the conversion.

Mr. President, the gasoline for our vehicles is operating about 35 PSI from the gas tank. Compressed natural gas, for it to be utilized, has to be at a pressure of 3,000 psi. So, you have 3,000 psi in terms of pressure in these tanks. The tanks are very heavy and expensive if you are going to use the lighter grade of tanks for CNG.

2.15p.m.

If you look at the outfit for a particular vehicle—the efficiency in terms of compressed natural gas and gasoline—the difference is about one-third in terms of compressed natural gas and energy and the energy from compressed natural gas as compared to gasoline. So, if there is a difference of one-third in terms of the energy liberated from burning these two particular fuels, then you would see that you have to use more compressed natural gas to get the result that you would normally get from a gasoline engine with a high octane value.

So you have this particular situation where you have the compressed natural gas in a tank that has a pressure of over 3,000 psi, it is going to be delivered in stainless steel pipes to the engine—that is in the conversion system—so you have to have that pressure up to 3,000 psi as it comes into the engine reduced by using a regulator as it enters the particular engine and the chamber. Right away you have a situation where if you are not going to fully convert to CNG you will have two tanks, one for either diesel or gasoline and the other tank for CNG, so the vehicle becomes heavier, there is less room and these tanks would go either in the trunk or in the hood of some vehicles, so you have a loss of space as well as increased weight with respect to compressed natural gas.

If you compare the situation with the gasoline engine and the compressed natural gas vehicles you would see that, yes, we have less emissions in terms of carbon monoxide, the nitrate oxides and the hydrocarbons coming from a normal

gasoline or diesel engine. But, the Minister in his presentation talked about catalytic converters and a number of vehicles now are utilizing these catalytic converters that are placed along the muffler system and they have that palladium that would take these particular hydrocarbons, the carbon monoxide and the nitrate oxides that are coming out from the engine and that particular catalytic converter that is now built into the muffler system would take those products and break them down, so you will have carbon dioxide, you will have nitrogen and oxygen leaving and you will have water also leaving. So you will have these harmful products being broken down by this particular catalytic converter in those high efficiency engines.

But let us compare the two of them—we must also compare the situation with respect to the use of compressed natural gas in the engine itself, because compressed natural gas mixes well with air, so as it enters the engine in those dual fuel engines, what will happen there is that the compressed natural gas will be of a higher percentage and in some engines will use a small amount of diesel and you will use a large percentage of the compressed natural gas or gasoline.

In a normal gasoline engine as compared to the compressed natural gas, the pressure along the lines is about 35 psi; the pressure going along the line in a compressed natural gas vehicle is in the order of 3,000 psi—very high pressure that we are dealing with. And I saw a report in terms of accidents with vehicles with compressed natural gas and it said because of the thickness of the walls of the tank as compared to the gas tank, there were less incidents in that particular area, but we also have to consider the size of the tank and the weight of the tank. So, you have this 3,000 psi going along to the engine, whereas, in the gasoline it is about 35 psi and you have to step down that pressure so that you will be able to control the particular combustion within the engine itself. So, the compressed natural gas has the highest in respect of methane actually mixing with the air and there is that ignition cycle within the engine.

I made reference to that because of this conversion kit that is so important when we are dealing with this particular measure, because if we are dealing with an excise duty reduction and giving more leeway towards the National Petroleum Marketing Company Limited in terms of the differential to make it more viable, you will be making the National Petroleum Marketing Company Limited more viable and economically attractive, and as you do so they will be putting more emphasis in service stations and then the particular automotive dealer that deals with this particular conversion kit will now have to go about converting the cars

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based on the request. So, it is important with respect to this particular conversion system to compare the two because the average consumer would want to compare both of them in terms of the cost of the kit.

The Government has said that they were going to reduce the VAT and duties on these kits but we have seen nothing. If you look at the incentive programme under the UNC administration, it was there since 1999 close to 2000 and since then to now there has been nothing in terms of giving incentives to encourage the movement to the compressed natural gas as a vehicular fuel. So we have to ask several questions in terms of this new initiative.

We heard about Vision 2020 and we know that with respect to the Summit of the Americas these conferences are coming up and we have to ask the question, is this particular measure again to impress the world and again nothing will happen as we saw in the 1990s? *[Interruption]* That particular situation, too, we have to ask the question with respect to outfitting of vehicles, will the Government be setting an example with respect to BMWs and will these BMWs be able to use CNG or dual fuel? We have heard of this new plan by the Prime Minister in terms of going to BMW dealership *[Interruption]* to order the cars, and as we are on the topic of ordering cars and dealing with engines and compressed natural gas, we have to ask several questions. If the Government says that they want to set an example—you can set an example now in terms of ordering the BMWs with either CNG or both. *[Laughter]* The question is, whether you order the vehicles with CNG, or diesel, or gas, the question still remains in the public domain, was it legal? Was it legal to bypass the local dealership when there was a tendering process in place? *[Inaudible]* Well, I do not know if the tendering process included CNG. *[Interruption]* I do not know that, Mr. President. Was that matter legal? The question still arises with respect to this particular transaction with the BMWs. The reason I brought that up was because of the Government's mention of the thrust and they were going to set the example. The Government can set the example with the public service and they can start with that particular area.

Mr. President, we are dealing with compressed natural gas, but we also have to consider natural gas. It is important because if you are dealing with compressed natural gas, it is a byproduct of natural gas. To get the compressed natural gas we have to extract methane which is a high component of our natural gas and in the extraction process there are other liquid petroleum gases that are coming off like propane, which is also a gas that can be used for vehicular fuel and for household use. But as a natural gas we have to ask several questions, if the Government is really going towards the CNG area and they are using natural gas now—if you look at the international market as we went globally in this debate and we look at

the use of natural gas and what is happening currently with respect to ammonia prices—now natural gas is feeding our ammonia plants and right now we are in a situation where there are plants shutdown. I am sure the Minister of Energy and Energy Industries will speak at length on that matter when he stands up.

Sen. Enill: No, it is not relevant to this Bill. It has nothing to do with CNG.

Sen. Dr. A. Nanan: Of course it has to do with CNG. We are talking about natural gas and we are talking about CNG. Anyway, Mr. President, I will not get into a debate. The Minister of Energy and Energy Industries has a full period of time to speak. The issue I was dealing with, with respect to that particular natural gas and the situation now is that there is going to be—these plants are down, natural gas is not going to be used, so you have that situation where, what is going to happen? In this particular situation—in fact if you look at the price of natural gas it is falling worldwide in terms of that particular situation. So, compressed natural gas—you know, Mr. President, the compressed natural gas and the extraction to make it from the natural gas and this particular situation with natural gas brings us to the Ryder Scott Report [*Laughter*] briefly. [*Laughter*] Very briefly. [*Laughter*]

Very briefly, because we are dealing with our natural gas reserves and our usage of our natural gas reserves, and what we are seeing is the price of commodities falling. So, if the Government is positioning its vision based on the use of natural gas—and I saw in terms of the plan of the United States in terms of the energy plan and they are cutting back in terms of their products dealing with oil and there is a projection for a wind farm and things like that to move away from these kinds of energy resources, and the Ryder Scott Report gives us a certain period.

But, you now, it is strange that if you look at our comparison in terms of our natural gas reserves and you look at a place like Qatar—I was checking that—they have reserves at 200 years as compared to a 12-year time frame with respect to our gas reserves. So, I know that in terms of compressed natural gas, it will not be a major drain on our natural gas reserves, but it has to be considered in the context of what is going to happen to our natural gas if our markets dry up. That is what is happening now with respect to our ammonia plants and the shut down in ammonia plants and people's jobs are being threatened at this time; and it is going to happen too with respect to the steel industry that also uses natural gas, because the steel industry—Mittal Steel is not going to build any new plant in Asia, as far as I am aware because of the situation with natural gas prices.

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So, in terms of the thrust in compressed natural gas and the Government's energy policy and energy plan, they have to have a rethink of their policy. I thought that the Minister in the Ministry of Finance would in this debate give us some ideas of what they are doing or what kind of scenario planning they are doing in that ministry with respect to the falling prices of oil and natural gas as it relates to the economy, because a number of people who work in these industries with respect to the natural gas arena and even in the compressed natural gas area may be losing their jobs if this continues. So there must be some plan with respect to the Government. I just briefly want to refer to the article that I made reference to, which is the Economic Fallout of Trinidad and Tobago Urea/Ammonia. So, it is not something I made up; it is something that came from the South Trinidad Chamber of Industry and Commerce. I just wanted to point that out in terms of that particular area.

As we deal with CNG we also have to look at besides the conversion kits and the pressure of this gas that has to be maneuvered with in terms of 3000 psi, we also have to look at utilizing this in our public service and the use in our buses or PTSC arena or public transport. If we look at our public transport and compressed natural gas in the various fleets, whether it be the bus service with respect to PTSC buses or the Ministry of Agriculture, Land and Marine Resources with respect to their vehicles and all the other areas, we have to ask several questions in terms of the—do we have the capability to outfit these large vehicles for the conversion?

2.30 p.m.

In terms of the conversion we have had with respect to smaller vehicles, but do we have the capability in this country to make that conversion with respect to our fleet of buses and other vehicles? The question is asked in terms of the size of the tanks for these vehicles because if you look at a compressed natural gas storage and the size of the tank, you will see in terms of the length of this particular tank and the weight—if you have to utilize that for power, for example in a bus, these tanks will have to be very large. It is nice to say we will convert all our vehicles at some point in time utilizing compressed natural gas, but in terms of the amount of gas required and the filling of these—even the filling stations for these particular buses in terms of the time factor.

If we are in a traffic jam from San Fernando to Port of Spain, we have to spend a great deal of time in traffic and the consumption rate goes up in terms of fuel consumption. You have to pay more because you are in traffic and the Government has no plan with respect to the traffic situation. We heard of the rail and water taxis without a feasibility study and we continue to hear of approaches

to improve the traffic situation, but there is no confidence in the Government with respect to improving our traffic situation. So we have that situation now where we do not have that kind of confidence that the buses that we are going to travel in, that the motoring public will utilize, will have that safety guarantee because the only person that is able to certify is this particular company. Where is the Bureau of Standards with respect to this particular area and also the EMA? Because we are dealing with emissions.

So the role of the EMA and the Bureau of Standards in this particular area is very important because we are dealing with very high pressures. Compressed natural gas is not 20 and 25 psi. If you want to compare pressures, the pressure on a tyre is between 25 to 30 psi and the pressure in a compressed natural gas tank is over 3,000 psi, so in terms of standards and the motoring public, we have to ask that question before the public has confidence. Not only are you going to say, yes, we will have this particular issue with respect to the conversion that will take place, but the confidence in the motoring public with respect to the use of CNG in our larger vehicles has to be guaranteed. And we are seeing the performance of the Environmental Management Authority in this country or the lack of performance or standards when it comes to these particular situations with the environment.

The Minister in his presentation talked about climate change and decarbonization. I do not know if he understood what he was reading from that text with respect to decarbonization. He talked about the catalytic converter in his contribution. I do not think he understood what the catalytic converter would do, but be that as it may, in terms of the decarbonization, it is a good approach and it also plays a role in decarbonization, in terms of getting rid of that carbon monoxide that has lethal potential. So that is a good area. Decarbonization is a good start, but we have to go even further and utilize it not only in this particular area because if you are looking at decarbonization, you have to go even further and look at our vegetation.

The Minister of Planning, Housing and the Environment made reference to it in her contribution at some point in time in terms of carbon sinks and utilizing our forest as a bargaining tool as carbon sinks. But does it make reference to that in terms of that particular area of decarbonization? It is important to go a little way back, a little history in terms of the engine because that will take us to where we are with respect to compressed natural gas or what we had before. Because in the olden days they were using fuel, but it was so inefficient in this particular engine that much of it was converted to heat. So you had an inefficient engine where the fuel was not burning properly and the same inefficiency that was in historical times, can come back to haunt us if we do not have it right.

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In fact, Mr. President, with respect to compressed natural gas and some of the vehicles, they have what is called piezoelectric microphones. So if you have knocking in the engine, it can send a signal back to the computer in that particular vehicle to say that there is knocking and it will automatically adjust the timing of the engine, so you will reduce the knocking facility. So those are the factors with respect to the use of compressed natural gas and that particular factor of knocking. It is important because it deals with the efficiency of engines, and I went to that particular area to show that.

Even in history, you would have seen that they were using natural gas in World War I and what happened. As they were piping the natural gas it went under a stream and because of the coldness, there were little liquids coming out from the natural gas. They then realized they could utilize that particular facility where they would be able—because the liquids that came out in the natural gas pipelines were so large that it blocked the pipelines and that is how they came about with these particular liquid petroleum gases like I made reference to, propane and the other ones. But what is important is that the higher levels with respect to gasoline have so much carbon content and if you know in terms of chemistry, methane is carbon and four hydrogens. So there is very little carbon content as compared to the higher levels, in terms of the number of carbon atoms in the particular molecule at the higher levels. So, that is why it is a cleaner burning and an environmentally-friendly fuel. So in terms of the historical perspective, natural gas and the extraction of liquids—

Mr. President, this thing goes even further because compressed natural gas is an environmentally-friendly fuel and if you look at propane which comes from natural gas which is a liquid extract, you will see that in the hardware environment in the use of forklifts indoors—that is to tell you how this particular green environment is going—they use propane because it does not give you that kind of poisoning of carbon monoxide coming out from the exhaust within the closed environment. So if you look at a situation of a closed environment and then we are dealing with the situation with emissions from vehicles, that is a whole new different concept in terms of the vehicular emissions and compressed natural gas and why it is such an environmentally-friendly fuel, especially when we are dealing with climate change and that particular situation with the environment.

Mr. President, the emissions from a CNG engine—you have reduced in terms of the carbon monoxide and the nitric oxide and if you compare it to the gasoline engine, you have a situation where you might have nitrous oxide coming out from the exhaust and this nitrous oxide directly affects in terms of global warming. So

an advantage here is the use of the CNG which does not produce this particular nitrous oxide in that large quantity to affect climate change.

I made reference to the ammonia plants and natural gas and several questions need to be asked if you are dealing with decarbonization, Minister in the Ministry of Finance. We have to look at our ammonia plants in terms of the carbon dioxide being emitted from our ammonia plants. It is relevant here because we are dealing with decarbonization and carbon emissions and our plants are producing large quantities of carbon dioxide in this particular process where we go to ammonia.

Mr. President, I know that some of the carbon dioxide goes into the production of methanol, but when we are dealing with decarbonization and this particular area, especially in Point Lisas, the Government has to have a strategy with respect to reduction in carbon dioxide emissions from Point Lisas. I am sure in their Vision 2020 document, if they do not have one, they will put one. The reason I made reference to that is because the visionary political leader and then Prime Minister, the hon. Basdeo Panday, in terms of the Point Lisas area had specific concerns with respect to that particular matter and the emission of carbon dioxide from that area affecting the environment not only within the country of Trinidad and Tobago, but in the Caribbean region.

And as we are dealing with the upcoming Summit of the Americas, it is important in terms of the—yes, you are sending a signal; you have already sent a signal with respect to the Geneva Convention, but we also have to ask, in terms of the Minister in the Ministry of Finance in his presentation and the time frame, what about the other important pieces of legislation? The Children's Authority, that particular piece of legislation has not been established as far as I know. That is a very important piece of legislation that has been in abeyance. And as we deal with the environment, pollution, global warming and climate change, we have to ask the question about the Marine Shipping and Pollution Bill that has been languishing in a joint select committee for years. That is important in terms of our thrust in the maritime arena, especially for the law of the sea. I would have thought that the Minister of Foreign Affairs who was dealing with the Geneva Conventions and made reference to our territorial waters and limits and the continental shelf, would have been very interested in this particular Bill that deals with pollution, because it affects not only Trinidad and Tobago, but our foreign affairs in terms of international relations.

So that particular area was important in terms of our international relations because we are not in an isolated arena, we are dealing globally. We heard in terms of the global perspective and Singapore—our country has always been

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compared to Singapore and the Singapore model, so when we heard about Singapore in the Minister's presentation, we have to ask several questions in terms of how we are going in that area.

Another area that I want to make reference to very quickly in terms of this particular area in terms of the compressed natural gas, our country and the environment because it is important when we are dealing with the situation of flooding and we have to ask several questions in terms of our irrigation policy and flooding. Why is it important? Because one of our new buses that has been equipped with a CNG conversion system could—

Mr. President: Hon. Senators, the speaking time of the hon. Senator has expired.

Motion made, That the hon. Senator's speaking time be extended by 15 minutes. [*Sen. Dr. C. Charles*]

Question put and agreed to.

2.45p.m.

Sen. Dr. A. Nanan: I thank all Senators for their vote of confidence in my contribution. [*Laughter*] [*Desk thumping*]

I want to make a quick reference here, as I was dealing with that particular bus and flooding. I was drawing reference to one of those buses equipped with CNG tanks that could be trapped somewhere in Forres Park in a flood; of course, with the particular weight of that tank, who knows what could happen. That is important in terms of the irrigation and flooding policy of the Government.

I want to deal very quickly with the Government's agricultural policy and CNG; that is important because a lot of equipment in the agricultural sector can be converted to use CNG. But in the Government's haste to increase the price of premium gasoline, a lot of workers who utilized brush cutters have been inconvenienced. [*Interruption*]

Hon. Senator: They use premium for a brush cutter? [*Crosstalk*]

Sen. Dr. A. Nanan: Yes. They look amazed on that side, but these brush cutters have very efficient engines. They are not the brush cutters of long ago; these brush cutters use the most efficient engines, whether two stroke or four stroke. [*Interruption*] There are four strokes too. They use premium gasoline. [*Laughter*] [*Crosstalk*] That was why I brought that in, because of the particular comparison between the octane rating, earlier in my contribution, and this particular area.

A lot of farm equipment can be converted utilizing compressed natural gas conversion kits. In the area of mechanization, if we are dealing with farm equipment and large acreage, I would hope that the Government has a policy of land distribution in terms of that, when they are looking at conversion to CNG. That is very important, especially when you are utilizing this equipment. It is very important in terms of machinery and mechanization in these particular areas; not only in the transportation sector, but in the agricultural sector as well.

Mr. President, in terms of Government policy and Vision 2020, we heard all that in this debate, regarding the Government's thrust and the particular visioning of the Government for 2020. If we examine very carefully where we are today and we compare that with where we were from 1995—2000, we would see that we have been ranked as one of the worst countries in which to live, under this administration. [*Crosstalk*] I was dealing with policy, because Vision 2020 is part of the debate. We are ranked as one of the worst countries.

In fact, if you look at the situation with compressed natural gas—and we are dealing with the reduction of excise duty and making National Petroleum more economically viable—we have to ask the question in terms of the National Petroleum Marketing Company Limited, but what about the private sector? We have to get the private sector to buy into this particular programme of service stations. Would it only be the Government dealing with these particular service stations? I saw where one of the service stations cost \$2 million in 1997; today I am sure it might be doubled; it might be \$4 million. With this Government's cost overruns, it could be \$10 million for a service station by the time they get around to putting one in place.

We heard of two stations to come, and that they would have faster refuelling compressors. We will not hold our breath for that, because we know that it has to go out for tender and we do not know if the Prime Minister already has some country in mind to get these compressors from.

Mr. President, I do not want to take much more time with my contribution in this particular area, but I want to add one more thing before I close, and that is with respect to the installation facilities. Is it the intention to expand the installation facilities in terms of a wider coverage of refuelling systems? When will we see the prices of these kits going down, because we must have some kind of short-term, medium-term and long-term plan?

I hope that this CNG lowering of excise duty is not a red herring that the Government is utilizing to mask all the other inefficiencies.

Thank you.

Sen. Basharat Ali: Mr. President, I wish to make an intervention on the Motion before us. I will not be very long. I will not be talking about octane numbers; I will be talking about btus and such like matters, no, no, no.

Mr. President, I am not awfully familiar with the whole subject of CNG, because I never had that much of an interest in it. I saw the first demonstration of a converted CNG engine facility back in the late 1970s. I remember where it was; it was a place called the Holiday Inn where this demonstration was taking place. My interest in it was quite low, because at the time I did not have an owner driven car. I was driving a company car, a Datsun 180C. I drove two other Toyota cars after that; I drove a Toyota super saloon and a Mazda 626; so for almost 10 years I had a car, but I did not drive it, so I had no interest.

I did have a little problem, even then, seeing the large cylinders which go in there. Once you have a family, I do not know how you would do it; you must have two cars, one to take you to Piarco with your luggage and one to bring you back, because your whole trunk or boot, whatever you choose to call it, is pretty well taken up; but that is an aside.

When I realized that I had to speak to this Motion before us, I had to start basically from scratch. I did encounter some problems when I was doing it. The first problem I had was the question of what was a litre of compressed natural gas. I do not know how many people know what CNG is. By definition, it is petroleum in the form of a mixture of hydrocarbon gases and vapors consisting primarily of methane, which has been compressed for use as a vehicular fuel. If you are going according to that, you can measure compressed gas in litres also, because litre is a volumetric measurement. That is not what it could be for a motor vehicle.

I had to go right back, and I first picked up from the Internet a very simple article called "CNG 101". It was very informative; that was the first time I understood what a litre in terms of CNG was. Of course this is a United States document and it is there courtesy of a company called BAF Technologies. I should say that, because this has been printed with their permission.

I found out that there was something called a "gasoline gallon equivalent"; that is an American term. They gave a number that is equivalent to 124 standard cubic feet. The gasoline gallon equivalent is equivalent to 124 standard cubic feet of natural gas. In fact, there was a higher number for diesel fuel; it was given as 135 standard cubic feet per American gallon. It gave me the first clue as to what it may be. Then I said, "Well, we do not use American gallons or imperial gallons, for that matter; we use litres."

When I divided that figure by the standard conversion 3.785 litres equal to one American gallon, I came up with a certain number. The number I came up with was 32.8 standard cubic feet per litre, because I made the conversion. That was where I looked at it. I started to go back, because gas is measured normally in standard cubic feet or cubic metres, so that is where the basic start is.

I had some friends who helped me in this: my friend at NP, the Chairman of National Petroleum, and my friend at the National Gas Company who is head of the technical division there. I have to thank them for bringing me up-to-date and making me clear as to what this fuel was. I hope I will be able to help others who might just have seen this word "litre" and did not know what it was; it is not a gasoline litre as it is, plain and simple.

So I have already given from the Petroleum Act the whole section on regulations on compressed natural gas, dating back to 1995. That comes from the Petroleum Act of 1969, Chap. 62:01. I have given before this definition of compressed natural gas, which is there under those regulations. I think that is where we kick off on this one.

The regulation provides for a number of licensees. They have what is called a service licensee, and that is for people who install, repair and maintain CNG vehicles. In the regulations and the subsidiaries they give one person a service licence, Automotive Components Limited. They give four addresses in different parts: Chaguanas, Arima and, I think, probably in San Fernando. Apparently they have only one address now from what I have been told by the National Gas Company.

A marketing licence is also defined; it is given in respect of retail transactions. There is a Schedule there from 1997 of the licensees; that gives nine licensees. The licensees are really the dealers at the service stations who are permitted to carry on the retail sale of CNG. One is from Point Fortin, two in San Fernando and then we have about five along the East-West Corridor from Mausica, Arima, Baratara, Beetham Highway and Wrightson Road; Central has one as well, I think it is in Chaguanas. That is the nine, so I am not too sure whether they are all operating. Recently on some of the talk shows or on television, I have been hearing about seven; so it may be that a couple of them had dropped out of the system. That is to be verified; it is not really relevant to what we have in front of us.

3.00 p.m.

As regards the price of CNG, that is fixed under Chap. 62:01 and effective January 01, 1997, CNG was 102 cents per litre exclusive of VAT and 107 cents

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inclusive of VAT and road improvement tax. Evidently, from what we have heard today from the Minister, there is no VAT on it because the 5 cents is road improvement tax. So I started from there and tried to figure out how much we are really getting from this system and I will come to that in a moment.

From the point of view of the pricing concept, in Canada they speak in cents per kilogram of natural gas, in the United States of America, as I said, they use as a standard this figure of 124 cubic feet per gallon because they are selling in gallon and they price accordingly. Our litre, from information given by National Petroleum, 1 litre of gasoline is equivalent to 32,644 btus of natural gas, so we have gone now to a litre of gasoline with an equivalence in natural gas, and the heating value of our natural gas is given here as 1039 btus per standard cubic foot. NGC had said 1033.

So we have here a position where a litre of gasoline is equivalent to 31.4 standard cubic feet of natural gas, and this gives us the basis on which we can start working out when we go from natural gas down to the compressed natural gas which is sold in terms of cents per litre. I would come back to that but I have one problem which I would like to raise here and that is the confusion that we have in measurement systems—and metrology is over four years overdue.

The Metrology Bill was passed in this honourable Senate and assented to on June 25, 2004. Time goes so quickly and I remember so very well some information, how we can all calculate our body mass index, which is kilograms per square metre. I remember doing that debate, but four-plus years have gone by and we get into this state of confusion of btus or litres and LPG being sold in pounds and such like things. So we have all these different units: pounds, kilograms, standard cubic foot, litres, btus, all because we do not have a Metrology Act in place.

I know a couple of Executive Directors of the Bureau who have worked very hard to try to get all the standards of measurement and the equipment in place. So I would like to ask the hon. Minister of Trade and Industry—the third one since we assented to the Metrology Act—what hope do we have that metrology would be coming soon? Quicker than Christmas, if necessary, because we know Christmas is coming and when it is.

Mr. President, it is very important that we do because I know for example, the Breathalyzer Act is still unproclaimed. I understood at one time that it was because the Metrology Act was unproclaimed, so here we have people killing themselves on the road and I do not know how much of it is due to bad driving,

but the point is that we do have a Breathalyzer Act passed, I think it was sometime in 2007 when it was due to be proclaimed and it has not got there. As I said, the last time I heard of it, it was because of some problem with respect to the Metrology Act. Let us get these things in place because I think that we have retrogressed terribly in getting into metrication. It is only the children who are learning about the metric system because they get it in exercises for their preparation for SEA.

So please, I make a plea today, again, to get there and I remember when I spoke, I said there were some problems there because while they catered for barrels in terms of petroleum, they did not cater for all we do in measurements; standard cubic feet and millions of btus. They are not mentioned there because they can be treated as special units because we trade in that.

So if there are amendments to be made let us have them and get the Act proclaimed. We have never started the sensitization programmes and they are well behind, so this is what I would like to speak to on the subject of metrology in the context of all we are doing here and of us wanting to go further into compressed natural gas stations and I will touch very briefly on that. This debate is not about that, but since it has been raised by the hon. Minister, I will just touch on it without going too much into it. Having sorted out where we are in terms of what a litre of compressed gas is and we can even say it is a gasoline litre equivalent (gle), so we have to do something further on it and I will speak to that.

Mr. President, we are spending a fair amount of time, I know in the other place we have spent a lot of time on this but the quantum with which we are dealing I think is critical. So looking at information I have, the amount of natural gas going into CNG is 500,000 standard cubic feet per day and that is in fact 4.2 per cent of small consumers of octane. Small consumers take 12 million standard cubic feet today and here it is the daily supply of CNG is only 4.2 per cent of that. So we are really talking of very small numbers.

More importantly, there is no quality specification, just like there is no specification as to what a litre of CNG is, there is nothing written anywhere so it can always be taken to court, I do not know. The gas that we have now, according to our National Gas Company which is going into the CNG system, is approximately 97 per cent methane and 2.5 per cent ethane which is very acceptable. In fact, the SAE in the USA has put as their standard 95 per cent methane which would be suitable for all vehicles, diesel or gasoline type vehicles.

Almost all our stations get this 97 per cent methane, 2.5 per cent ethane because they are getting gas which comes after processing at Phoenix Park Gas

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Processors Limited where—my friend, Sen. Dr. Nanan said—they removed the propane and the butane which is quite correct. So you get a cleaner and more appropriate type of gas going into CNG. The only station which is not in the loop of those nine places is strangely enough, Point Fortin. They call that a richer gas because it is where the gas has a lower methane content and a higher content of ethane, propane and butane. So that is the exception to the supply and it is not really the best kind as CNG fuel, so that is something which has to be examined and I will mention it again as we go along.

Looking at the calculation given by the hon. Minister as regards the proposed price of ex-NGC price and the price to Automotive Components Limited, I have come up with the 80:20 NGC to Automotive Components offtake of supply of this fuel, NP versus Automotive Components Limited. I have worked out a gas price which is on average US \$1.55 of the gas going to National Petroleum and US \$2 per million btus or per mcf, if you want to call it that and US \$2 for gas going to Automotive Components Limited, a higher figure on the mean price. The average price of that would be \$1.64 per mcf.

Mr. President, NGC revenue is just under US \$300,000 per year which is TT \$1.9 million per year. That is the kind of business we are looking at and we are selling the product CNG at \$1.07 per litre and I agree with the Minister in terms of the total figure because working it out myself, it comes to TT \$6.11 million per year. So it is really quite a minuscule business and we should not be spending so much time on a little matter as this, but it is important, and I am pleased to be able to bring my knowledge which I have picked up over the last few days to let the Members know.

Mr. President, I have a more serious question, and I was hoping that the Minister of Energy and Energy Industries would have been here. It is a question as to whether the excise duty on CNG is lawful according to the Act, and if it is so, who is liable for payment of that excise to the Customs and Excise Division? That is the question I ask because I go back once again to the Excise Duty Act in its interpretation which says:

“‘Excise’ duty means any duty other than an export duty of customs imposed on any articles manufactured in Trinidad and Tobago and includes CNG.”

So CNG is the same definition I had given earlier on in terms of the regulations under the Petroleum Act. If it is being claimed that CNG is manufactured, then who is the one liable for payment of this excise duty? Is it the producer who produces natural gas? Is it NGC which buys and sells gas at the well head, but

does not process it? Is it Phoenix Park Gas Processors Limited which cleans up the gas and separates the propane and butane? Is it NP which simply markets the gas through its dealers?

I ask a very simple question: How different is this compression operation from say, the air compressor system you have at your service station where you say you want two to three bars whatever it is, and you set your dial and the pump starts and get your tires pressured to two or three bars, whichever you choose? How different is that? There is air being compressed and delivered to your car, in this case you have natural gas which is being compressed and being delivered to the engine of your vehicle.

3.15 p.m.

That is my comparison. If somebody can say otherwise, I would like to know. Therefore, I would like somebody here to respond to that situation. Is it a manufacture? I do not think it is a manufacture. If it is, then you have to designate the manufacturer and he is the one who will then have to be liable for the duty under the Excise Act. The Excise Act is clearly laid out. If you look for petroleum products you will find all the excise duty taxes there. I have checked it out.

Excise duty is clearly stated as to who is responsible, even in the Petroleum Act, because when we look at ex-refinery price, ex-refinery price is made up of three components: the market-related price as determined by the Minister of Energy and Energy Industries after consultation with the Minister of Finance; plus the rate of excise duty enforced as at date of sale of such product; and the handling charge after consultation with the persons carrying on refining business.

So we know who pays excise tax on petroleum products sold to everybody. Petrotrin is paying that; that is their responsibility to pay that. It may be passed on to the customer, the client, through the whole chain. The same applies to whether you drink beer or smoke cigarettes. The manufacturer is the one who is liable for any excise duty.

So I ask this question and I hope to get some clarification because we are otherwise in a serious situation if somebody challenges this and says, "Well, no, CNG is not a manufactured product." It is cleaned up, but it depends on what you define as manufacturing. Go back to the Excise Duty Act and you will see what manufacturing is, and they talk about factories, et cetera. So go back to that if you want. It is not my duty to do that but I just raise a problem here.

Mr. President, I had one other thing on excise duty and it relates to the present and previous Order or legal notice. I have before me here this Consolidated Index

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of Acts and Subsidiary Legislation which I always found a very useful document before we got those red books and before we had a website, and when I go back to that in terms of excise duty, I find here, on compressed natural gas in 1997—that is the first one—confirmed by Legal Notice 198/1997—the first Legal Notice would have been 82/1997—which I presume “confirmed” means it came to Parliament and was confirmed by the two Houses of Parliament.

The second order is a 1999 order which is this Legal Notice No. 43 which we are seeking to revoke, but when I look again there is no confirmation. So they still say 43/1999, but that is the only item that has no confirmation. So if this is brought under section 13(2) which is the same section we are dealing with today, and if it has not been confirmed, then it is not applicable. So we really still have 05 cents excise duty as we did in the previous duty. So we do not really need to have any debate as we have here today. But I am subject to correction, that this is the only document—these red books do not have any of the excise duty orders—and it is dated January 01, 2006 and it is quite plain there.

That is a very important matter for today because if we do not have that, all this business about how you spread the 15.4 cents become non-applicable; it is of no use. So I believe that the Minister of Finance, the Minister of Energy and Energy Industries, or whoever—I think it is primarily the Minister of Finance because this is an Excise Duty Act we are talking about. If this information is incomplete, well that is fine; if it is not, then according to what has been quoted there in section 13(2), there is no order in place except the original 05 cents duty.

Maybe we have an easier problem on our hands because we have fixed the price at \$1.07 per litre for the product. So the implications of that are quite enormous. Of course, if you say that there is an excise duty and you have determined who is liable for it and you have taken it from them and you do not have the order in place, then you have to refund them; you have to decide who you are going to refund. That is not my problem; that is the Minister of Finance’s problem. I see he is shaking his head.

So that is where I go on this particular item; my question as to whether excise duty is a legitimate tax on compressed natural gas compared to all the other things which are taxed with excise duty and; secondly, whether this Order of 1999 is in effect. If it is not in effect, then we are wasting our time debating this whole matter.

I noted from the budget speech there are plans for the expansion of the CNG distribution system and I will support that as a general situation, because we have natural gas and hopefully we will have it for longer than 15 years. The hon.

Minister of Energy and Energy Industries is not here. I note that we have a lead time of two years on this. We have the physical infrastructure to consider, and there we are, reasonably well off in terms of natural gas availability because we have a network of pipelines which—from the trunk lines, subsidiary lines which go to various places. I think we are fairly well covered even now as to where we can access to get quality gas for CNG.

The Tobago pipeline is supposed to be ready by the first quarter of 2010, so that is coming in within the two-year timeline period. Whether that gas which is different, I would expect, when it gets to Tobago, I am not too sure there may be some small treatment there to clean it up. I believe I saw that the gas is going to go over into this industrial estate. So it would appear that we would be able to take CNG also to Tobago within that same time frame.

The physical infrastructure means really looking, as a logistic matter, as to where you are going to locate this and in connection with the availability of pipelines and, as I said, there are many. There are those going into industrial estates; right through the island they have them. There is one going right across the Queen's Park Savannah to the Hilton. In my area in Maraval, I do not think there is any. Then we have lines going right up to Diego Martin and into the West Mall area. So there are many areas where you can go and put in a station and have a system of CNG delivery executed.

I am concerned more with the other things, softer things like product supply specification. We do not have any now. So we need to get there and specify it. National Gas says, well, they provide the gas in terms of what they have; they give you a range of compositions and whatnot, but then there are other problems. Are you going to odorize the gas that is going to the station? If you are going to odorize, how much? And where are they going to be done? Because odorization is sulphur and sulphur is harmful to motor cars. So this will be something one will have to look at.

So the equipment at the stations themselves, we will have to look at, apart from supply specification. I know we are very careless about cars and things like that, but although they say that the CNG car is safe, I think we should never forget that in the car we have virtually two bombs, because they are filled up to 200 bars, which is 3,000 pounds pressure. What you have to look at there is to make sure that no carelessness happens under normal circumstances and that you have the inspection systems available because we have to protect people from themselves.

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I know there are examples being brought about an accident between a motor vehicle with a gasoline engine and a CNG engine, but it is more critical if you start introducing it on a basis of usage by a wider part of the population, that we must put into place protection for all, because it is not only the driver you are protecting; you are protecting all the people in his surround. Because when you have 2,500, 3,000 pounds in your trunk or wherever it is, we have to be careful.

So there has to be very strict regulations for CNG; there has to be strict enforcement in terms of schedules for inspection. For example, the hon. Prime Minister has spoken about lighter tanks. I know that is there now. You either have liners of steel or of aluminum with a shell of carbon fibre which gives it the protection, but then you have to examine whether those steel liners have to be subject to inspection at certain intervals.

Those are the things that I see as things which tend to come last and we have to plan it so that all of these things come in there when we get the physical infrastructure in place. The whole question of measurement also, and that is where the matter of—

Sen. Dr. Saith: I know you are coming to an end but you did raise the question of measurement. Senator, the Metrology Bill that was passed in Parliament had a clause which said that people working in the Weights and Measures Division, which is a department of a Ministry, should have no option but to go over there. That caused a problem from the people and from the union which said, “You cannot do that.” So we need to amend the Act to give other options. One is to let them remain where they are and go elsewhere in the public service or some other thing. Those amendments are being worked on and I am told, as the third Minister of Trade and Industry, that they will have it ready for me before the end of the year and I hope next year to bring those amendments. We need to amend it. It is not a question of the technicality of the weights and measures, it is a human resource problem that we need to sort out.

Sen. B. Ali: Thank you, Minister, for giving that reassurance about when we might get it, but I would like still to draw your attention to the fact that there are some technical amendments in terms of the petroleum part of it which, we have petroleum there for barrels as a designated unit; we need to have it there as a technical matter so that we can sell. Otherwise you cannot sell CNG.

Mr. President, I think that is about what I would like to say and if the matter is sorted out, then I will be willing to support the Motion before us, but I have to

find out first whether we have a valid Order in place and we do not have to revoke it and apply another five cents duty.

Thank you very much, Mr. President. [*Desk thumping*]

3.30 p.m.

Sen. Mohammed Faisal Rahman: Mr. President, because of things that have occurred on the national scene, I view this as a very explosive subject that we are doing today. The first thing that I will do is to read the Motion before us:

“Whereas it is provided by section 13(2) of the Excise (General Provisions) Act, Chap. 78:50 that the Minister may by Order impose any new excise duty or increase any excise duty and from the date of publication of the Order in the *Gazette* and until the expiry thereof the duties specified in the Order shall be payable in lieu of the duties payable prior thereto:”

When I read this, I found there was an anomaly because we were not setting out to increase the excise. We were setting out to reduce the excise on natural gas. I had to go back to the Act. I am looking at this Motion and wondering whether the phraseology is quite appropriate. If you are proposing a Motion you must have ideas that are relevant to the matter. “Whereas the price may be varied or reduced”, should have been put in the phrasing of the Motion. That is a little criticism there.

When I looked at this, I assumed that the reduction in excise was a reduction that was going to benefit the public. It was only when I came here I heard the hon. Minister explain why the excise was going to be reduced from 20 cents to 5 cents. This will not benefit the public. Many questions have come to my mind. Lao Tsu, whom the Minister quoted, said wisely that the longest journey begins with the first step. But I must tell you that the first step must be in the right direction. If you are in a diametrically opposite direction you would not get to where you are going.

With the recent developments of this matter, it seems to me that the Government has set about to stimulate the use of CNG in this country. For the life of me I cannot understand how it expects to do that by giving no benefit in the price of CNG to the motoring public. It has confined all the benefits to the distributors and people along the chain of distribution. There is a marketing principle that if you want to increase sales you have to lower price to increase sales. Here you have taken a strategy to reduce excise duty without lowering the price and reallocate the savings in different directions. I do not understand the strategy here with regard to getting the public more interested in converting to CNG.

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I was not aware it was in 1990, but I remember distinctly in 1994—because I had contact with a gentleman named George Hamel Legall—when this matter of conversion to CNG came about. He was in the forefront of recommending it. He is deceased now and was a very honourable gentleman. He used to talk about the benefits to the petroleum conservation and ecosystems.

It is appalling to know that here we have the hon. Minister extolling countries such as Pakistan, India, California and several others to mention, not Trinidad, unfortunately, that have fleets of buses operating on CNG. We have just added 400 or so diesel operated buses in the country and more are coming. There is a saying that it is better to lead by example than by precept. It does not matter what laws you make if you do not show that you believe in the product that you want people to buy, you would not convince anybody. It seems to me that the single, sole, solitary incentive to encourage the nation to move toward CNG is the veiled threat of removing the fuel subsidies in two years time.

That is governance by terror. That is not governance by a caring government. They are saying that if you do not convert to CNG we would quadruple the price of gasoline. “Too bad, crapaud smoke yuh pipe then.” The reality is that at the moment we have a single installer of kits; a very restricted distribution system and slow-fill installations as well as fast-fill installations. I do not know the exact time, but it takes quite a while to fill your tank with CNG.

In addition to that, the motorist has to put out an additional \$10,000. When you buy a car on credit putting out \$10,000 in addition to the instalment is very hard. The Government has to come with a plan to make the conversion kits available on credit to whosoever wants it so the person would not have to find \$10,000 to convert the car. It seems as though the threat of removing the subsidy remains the only incentive. Even if you were to threaten the population that if they do not convert to CNG you would increase the price of gasoline by removing the subsidy—the Prime Minister gave the assurance that he will not move the subsidy for two years. We had an assurance that the subsidy will not be touched and then you increased the price of premium gasoline. Subsidy in terms of a threat becomes a farce because the Government can raise the price without removing the subsidy. We do not have the assurance that within two years the Government would not increase the price of gasoline in different grades.

We are confronted with a situation where we have a logistical drawback. It is a difficult situation where the Government cannot expect reasonably—that out of the half million cars in this country—to accomplish conversion kits being installed and even a distribution system. There are several things that I will like to

ask the Government to consider. In the United States of America where CNG is used, there are domestic storage tanks from which people can fill in their back yards, so that they do not have to go to the filling station. You can buy in bulk and draw out from that to fill your tank. That would ease the situation with regard to lines and lines of vehicles being filled at the service stations. You have a road congestion situation. With this CNG there would be compaction of crowds. The Government is not looking at this thing in a reasonable way

I want to know if there is not a system in the world where a tank can be decoupled and full a tank coupled on the vehicle. You can go to a depot and change the tanks. Can we not have a double tank system where you can pull a lever and switch on to the second tank? I have seen on the Internet where several countries in the world have dual CNG tanks. You can pull a lever and have a longer range.

At the present time, another logistical problem is that the range of CNG vehicles is extremely poor. We are threatening the population to convert to CNG in a situation that is very detrimental to the population. We do not have filling stations and with the rate at which they have been implemented in the last 18 years, I do not know how seriously we can take the Government with regard to this programme. I do not know that with a single installer and very little stocks standing by—nobody will tie up money in stocks when you are not selling kits. With 50 kits a year I do not know when we will reach the stage when we would be able to say that we have a reasonable number of vehicles on the road using CNG.

We have a logistical nightmare because we are facing at any given day an increase in the price of fuel to spur us in the direction of CNG. The logistics involved in installing CNG kits, apart from the finance which I mentioned, is difficult. One morning if 30 persons decide to go to Automotive Components to get conversion kits, would they be able to do that? How can they possibly do that? You must have a system where you train and encourage people. There is a complete CNG programme that needs to be thought out before we can say that we are going to move toward CNG. The Government must set the example by using CNG.

I go further. We can have a decoupling system with full tanks at depots all over the country which would obviate the need for filling stations or people getting a double tank system or domestic storage facilities which are features occurring all over the world. The Government is coming on this CNG programme by threat when it is embarking upon a system of automotive fuelling that seems to be outdated or on the way out. China is one of the foremost nations that is using natural gas. They are not using CNG. They are using liquefied natural gas (LNG).

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We have a close relationship with China. We have an individual here who facilitates trade with China.

Why does the Government not look at the LNG aspect for fuelling vehicles? It is very feasible. The problem with the LNG is that you must have a cryogenic tank. The Chinese and other people in the world are doing it. I got it on the Internet. This is established technology. Why are we going the route of a pedestrian horse and buggy system? This is like the Government investing in 35mm cameras and trying to encourage the people to do photography, when there are digital cameras all over the place. You do not go the way of 35mm any more. You go the way of digital. You can download from the computer and do what you have to do.

Why are you starting to do a CNG system, blackmailing the nation to go in a direction that is anachronistic and outdated before it even starts? You have LNG and the problem globally is that it is difficult to produce LNG. We are producers of LNG in Trinidad. With a tank of LNG you can go for hundreds of miles. The LNG has a psi of 7. Do you see how they discovered LNG? They passed it through the lines in winter and it became liquefied. All we need is cold. It is produced in Trinidad. It is a technology in China.

The difficulty is the cryogenic tank that is being overcome. You get the cryogenic tank and there is a range for travelling in your vehicle that is amplified way over the 40 or 50 miles that you would get with a CNG tank. You are trying to embark upon using a resource that is not being implemented with modern technology. The technology that we are trying to install has become outdated. In two or three years we would find ourselves having to tell all these people who converted to CNG to scrap those kits and use an LNG kit. LNG is one of the ways of powering vehicles now.

3.45 p.m.

Now the problem about a dangerous tank in your car with CNG is that while it has been said that you have your gasoline tank at the back of the car, it is not under pressure. Actually, with 3600 psi, the danger is not from the gas igniting, it is from the explosive force. The danger remains with regard to the CNG tank at the back of your car. It has been said that the tank is very strong and will withstand an impact, but we have been told by the Prime Minister that they are coming out with new tanks that are not as heavy and certainly not as sturdy.

So we have a situation where we are moving toward more dangerous tanks with 3,600 psi sitting at the back of your cars and there is the LNG in a cryogenic

tank that has 7 psi with no danger whatsoever. It is like chalk and cheese. You are looking at a system and you are not considering; you are going into 35 mm cameras not realizing that everybody would be throwing it away. You need to look at the technology that has been developing. This is extremely important because you cannot have—you talk about 2020 vision and you go to 1919 technology. It does not make sense. 1919 technology is not 2020 vision.

I am also curious to know why LPG, which is also a gas we produce locally, has not been explored earlier or at all. It may not be as clean burning as the CNG, but it is used as a fuel for automotive vehicles. For years we have been complaining about subsidies and there are so many vehicles that operate on the port with LPG. That is another one of those things. We have an extended range. You do not have the problem of a CNG tank finishing; you are going to Mayaro and cannot come back.

I know that you can flip over to regular gas, but what is the reasonableness in getting people to do CNG and force them to still carry regular gas at a high price, unsubsidized as well, so that they can come back home after the first half of the journey? If the Government wants to have a comprehensive approach to the question of fuelling and optimizing the use of our resources, they must look at LNG—*[Interruption]*—liquefied natural gas, which is the same gas, but the efficiency in terms of the range—

Sen. Dr. Saith: *[Inaudible]*

Sen. M. F. Rahman: You are not aware of that? With all those Chinese contacts you have, you do not know that China is advancing, with LNG being used for powering vehicles? I am glad to give you this brand new information which you have not heard about. I am very flattered. That is why you were laughing. LNG is the technology. The ships that transport LNG run on the boil-off of the LNG which is made back into vapour and they power the vehicles with that. It is the same natural gas. The only problem with the LNG is the manufacture of it. We have it; we are manufacturers of it.

The other problem is the cryogenic tank which has already been beaten. It is done and there is no danger; 7 psi, you blow it up, liquid falls off and it evaporates. There is not a problem.

This is an aside. Recently the increase in premium gas was said to apply to those who could afford it and yet CNG and later LNG would benefit all those vehicles so that rich and poor alike would pay the same natural gas price. One of the questions that is on my mind is: Is there a figure available for the mileage one

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gets from natural gas as compared to the mileage from the liquid petrol we use today? If we have a reduced price on CNG per litre as against the high price for other gasoline, but we get poor mileage, I do not know what the economics would turn out to be.

There is another question in my mind. With the high octane, as mentioned by my colleague, of CNG at 133, I believe that the older type engines, of which we have thousands in this country, may very well find themselves subjected to a more explosive force in their engine chambers than they have been manufactured to deal with.

I wonder whether CNG and hopefully LNG could be used for more modern high-powered vehicles. It is like putting high pressure in your pipeline—you burst the pipe. I am very concerned about the majority of vehicles on the road—we have vehicles on the road 10 and 15 years old—that have low compression engines and too explosive a force in those chambers, can very well damage the engine.

We want to be sure that when the Government removes the subsidy and makes CNG the first choice by law, we do not automatically send a lot of vehicles to the graveyard and the owners into poverty. Those persons who own these vehicles today may very well find that they cannot use the CNG and they have to pay four times the price for petrol.

I thank you for the time and I hope that my contribution would have given the Government pause—I will show the Government Ministers the printout concerning the LNG. It is not Chinese—you have not been paying attention to what is going on in the rest of the world.

Thank you very much.

Sen. Ryan Spicer: Thank you, Mr. President. Firstly, as we all know, the infrastructure in Trinidad and Tobago is certainly not there to provide adequately the level of compressed natural gas to society. I think it is very irresponsible of the Government to punish members of society by raising the premium gas until the infrastructure is put in place.

I would like to comment on something that was said by the Minister of Works and Transport when he stated that members of low- and middle-income families would not be affected by the rise in premium gas. He stated that many of these families purchased the low-end vehicles such as the Almera, Corolla, which he stated carry the smaller engines. He stated that it can actually work with the super gas that has been not been taxed. I have in my possession three users' manuals of these so-called lower-end cars.

Sen. Gronlund-Nunez: Mr. President, Standing Order 35(1), relevance. We are speaking on CNG.

Mr. President: Senator, you have been here before and you have been here for the entire sitting and we are trying to talk about CNG. You should try to confine your comments to the issue before us.

Sen. R. Spicer: Mr. President, I understand the subject we are dealing with, but it is quite unfortunate that I am not being given the opportunity to show how it affects the wider society.

Let us focus on the issue of CNG. They have totally disregarded what is happening to the people and want to focus on CNG. When we look at society, we see that CNG certainly is not a popular means of fuel used in the wider society. When someone buys a vehicle, he looks at certain aspects. They want to fulfil certain factors in buying a vehicle—reliability, safety, comfort and performance. Surely, when we purchase these vehicles everyone in society would want optimum performance of their vehicles and CNG certainly limits this.

4.00 p.m.

Looking at the aspect of using compressed natural gas, certainly the population would find this a purely unattractive method. Why did the Government not look to hybrid vehicles, which, as we see in America, are more attractive? The level of hybrid vehicles being produced in America has been greatly increased.

The point I am trying to make is that people in the society do not want to use these vehicles. The obvious disadvantages of these vehicles make them quite unattractive. I do not know if a study was performed to look at the different aspects of a cleaner fuel to preserve our environment.

Thank you.

The Minister of Energy and Energy Industries (Sen. The Hon. Conrad Enill): Mr. President, I thought that I would join this debate for a few moments, just to make several points. The matter before us today is simply to change the benefit payable to the companies that are involved in this business. The question of compressed natural gas as an alternative fuel has had to be discussed in recent times because of two pressures. One was the pressure of sustainability of the subsidies that are currently paid on gasoline, as a consequence of the escalating price of oil.

We looked at this exercise in trying to ensure that we manage population expectations for low inflation in a high inflation environment. I do not know if you are aware of it, but the way we protect the citizens of Trinidad and Tobago

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from the impact of global inflation is to subsidize the price of fuel. As we looked at this particular exercise, we did what any responsible government would do and this is what we found. We found ourselves in a situation where, at a crude price of US \$73 Brent, the subsidy on gasoline was \$975 million and the subsidy on diesel was \$1.1 billion. Total subsidy of \$2.2 billion plus.

At \$110 estimate for 2008, the subsidy on gasoline was \$1.7 billion and the subsidy on diesel would be \$2 billion plus. At high prices this year the taxpayers would have found themselves having to carry a \$3.7 billion subsidy cost. Clearly, when it gets to this type of cost any responsible government will start to look for alternatives to determine whether there is a less costly way of providing transportation for its citizens. That discussion started sometime in 1984, so it is not a new discussion, when the Ministry of Energy and Energy Industries at the time, in association with a private investor, Natural Gas Systems, initiated the domestic compressed natural gas industry with a pilot project—1986 project launched—to assess the readiness of Trinidad and Tobago to accept this alternative fuel.

The initial project involved the construction of one CNG station and the conversion of 36 vehicles. A full review of the pilot project was done in 1989 to appraise what other technical, economic, financial and policy initiatives would be needed to fully commercialize compressed natural gas as an alternative fuel in Trinidad and Tobago.

In February 1990, the Government gave its approval to make compressed natural gas a commercially available alternative vehicular fuel for the driving public of Trinidad and Tobago, with all the necessary ancillary steps being taken to implement that decision. To come here and give the impression that this is something that is new that the Government is forcing and doing all these things, is clearly not consistent with the history of this particular activity. The decision to use compressed natural gas as an alternative vehicle fuel was not predicated purely by economic considerations.

As you know, in many countries with significant gas reserves, in the late 1980s, when we had oil prices soaring, countries determined that they would invest in making available a low-priced compressed natural gas fuel to domestic vehicle owners who were willing, at the time, to purchase and install these kits. There were other influential factors, including the switching from using oil, which could provide you with higher revenues, if you export it and, of course, there was also the question of the global trend towards the use of cleaner burning fuels and the Government's policy to maintain a cleaner and healthier environment. There were considerations, economic and environmental, in this particular policy position.

It continued during the period 1992—1996, where there was some expansion where we saw the establishment of 13 refuelling stations and four installation companies performing just over 3,000 conversions.

By 1996, the network system had become heavily utilized. Sales peaked at 9.1 million litres of gasoline equivalent. What it also did is that it identified very, very clearly, many of the drawbacks of the programme. As a consequence of these drawbacks conversions slowed and demand stagnated. The decline in the market was caused by some of the following:

- long queues at stations because slow fill equipment were in fact an issue;
- CNG users were having to refuel more than their gasoline and diesel counterparts;
- weight and size of storage cylinders negatively impacted the vehicle suspension system and trunk space;
- there were safety concerns; and
- the low price for diesel engines, as compared with CNG conversion kits, in some cases a diesel engine was \$5,000 and a conversion kit \$9,000 to \$14,000, which made diesel an attractive option, especially to maxis and taxis.

Those were the situations that caused the programme, as it were, to go on to the backburner.

As we seek to revitalize the CNG programme, clearly all these issues will have to be resolved. Therefore, in the 2009 budget statement the Government made some proposals which I want to repeat just for clarity. It is clear to us that as we look to the future, and we look at the cost that we have to deal with, in the context of the environment as we see it today, that the population needs to have an alternative that is available. We believe that alternative is compressed natural gas. It is providing the population with an alternative. There is a view of the language of terrorism and all kinds of things. That is really not the issue, the issue is choice. You need to make a choice, in the context of what is available. What the Government is seeking to do is to make more available to those in the society who would have a different choice.

There are a couple of the things that we are committed to. The first is that we are committed to, for example, working with the private sector as well as the current CNG network. We are going to be reassessing the whole question of dedicated new compressed natural gas stations. The old model, the slow model—

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out of the window. We are going to have to maintain pricing stability of CNG, relative to that with gasoline and diesel fuels. The price differentials with these fuels would be maintained. Right now, for example, the price of CNG, I think, is \$1.07 price after tax—Laws of T&T chap. 62:01 section 31A, 1997. The price of diesel is \$1.50 and the others are in fact escalating. We believe that if we could produce an acceptable alternative for the transportation subsector that costs less than diesel, then we think that would be an option that would achieve two things: the reduction in the subsidy that we are talking about and also the ability to maintain a lower level of inflation, because it is the higher fuel price in the transportation subsector that impacts some element of the inflation issue.

The policy position by the Government is very clear. The funding for Phase I between NGC and National Petroleum—those are the two state entities that have been mandated to deal with the infrastructure and the safety issues—is something that we are concerned about. Therefore, we will, by policy, ensure that rigorous testing and certification programmes and application of the industry standards, as was mentioned, for receptacles and nozzles and all of that.

Beyond that, we are also looking at the question of management of the programme in a slightly different way from how it was before. In that regard, we are putting together a task force to undertake a couple of very specific deliverables. One is the question of network development in the context of that which we seek to do, the whole question of the development of incentive programmes; the question of new regulations and safety procedures; the public education piece; and, of course, the expansion of the marketing programmes.

4.15p.m.

We believe that education and training are key elements in the future development of the programme. The task force will work with the University of Trinidad and Tobago to develop adequate and relevant training programmes in CNG conversion and maintenance technology. The critical shortfall that we have in the number of qualified and experienced professionals and technicians to undertake these specific skills in the sector would be addressed.

The National Gas Company and the National Petroleum Marketing Company have been mandated to take the lead role in cooperating to convert most of the existing stations to CNG and, in some instances, to build new dedicated CNG stations for the industry.

The ministry will also be considering the approval of expanding the role of existing refuellers and authorizing new players into developing and building CNG infrastructure for utilization by the sector.

The dedicated stations that are being planned are expected to have delivery capacities that are approximately eight times that of the existing upgraded dual fuel CNG stations.

By 2010, it is expected that two new dedicated stations will be built and will be in operation. All the stations that currently exist would be upgraded to fast fill. Currently, fast fill will have the capacity to deliver, on a daily basis, 10,000 litres of gas equivalent of CNG fuel. The new dedicated stations would be designed to deliver twice as much fuel on a daily basis and, therefore, by 2010 the operational capacity for delivery will be the equivalent of eight dual fuel stations at 10,000 capacity and two dedicated stations with a 20,000 capacity.

By 2015, the target is to have 25 per cent road transportation fuels replaced with CNG. This goal can be achieved by building 10 large capacity dedicated stations and 40 dual fuel stations.

The dedicated stations would be, by necessity, situated close to the natural gas pipeline route. In the case of remote locations away from the pipeline network, specially designed road trailers would be used to move CNG from the highly compressed source of gas to the remote site.

CNG vehicles have also benefited over the last couple of years from technology improvements. The recent development of aluminium storage tanks wrapped in fibre glass or Kevlar has reduced the weight penalty by 50 per cent or more.

Lately, there are many manufacturers of OEM/CNG vehicles that utilize these techniques for CNG storage in conjunction with a small gasoline tank. So, basically, the manufacturers are, in fact, creating this. These CNG vehicles do not compromise the weight of cylinders for trunk space.

With respect to the question of the establishment of this network, we believe it will not present significant technical problems, because basically we know where to go, how to go and what to do.

In terms of the financing of this particular activity, Senators are aware that the Government subsidizes the cost of transportation by \$2 billion or \$3 billion annually. We believe that if you were to invest in this particular network, you will have available to you an alternative that can create a benefit for all of us.

Mr. President, I think we need to understand in 2007 the fuel consumption by vehicle type. There has been an analysis done to determine which vehicles impact on the transportation subsector. There have been many discussions—some

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informed and some not—about the Government's position with respect to increasing the price of gas for high-end users. Now, one of the challenges that any government faces—[*Interruption*] Well, somebody raised the matter and I am just responding. This matter was raised specifically by Sen. Dr. Adesh Nanan. Mr. President, I am guided, if not, I will not go there.

Well, let me then get back to the matter before us and to simply say that there is a plan; there is a process; and there is a particular objective. The real benefit in all of this is providing an alternative low-cost fuel that is efficient and clear and brings us with the rest of the world as it relates to this particular matter and to give the population a choice.

The Motion that we are debating today is simply to rearrange, not the price to final consumer, because we are already subsidizing that significantly, but to change some of the margins so that those persons who are involved in the business in a fixed price environment could have a little more resources to maintain the business and, at the same time, continue with the current infrastructure as we seek to build on the network that is currently in place, and as we seek to use the experiences that they have to build a more all encompassing larger, more efficient and safe CNG alternative for the population who require a fuel that is low cost in relation to what is currently available.

Sen. Dr. Nanan: In my contribution, I made reference to natural gas and the situation with plants being shutdown at Point Lisas. I do not know if you want to make any comment on that matter especially as it relates to ammonia prices and the shutting down of these plants.

Sen. The Hon. C. Enill: The answer to that question is, yes we are aware that there are some plants that have said to us that given the current circumstances now, they are moving their maintenance earlier rather than what they have scheduled before. In those circumstances, they are doing work that is required for maintenance and safety issues. They want to do it now, given what they see as an opportunity based on the commodity prices. That is the information that we have at this point in time. We are aware of the three plants, and we may ask others to do this as well, given what is happening at this particular point in time, because we think that now might be a good time while we look at changed circumstances in the first quarter of next year. So, we do not consider it to be a difficulty.

Sen. Dr. Nanan: Is there any consideration to renegotiate the gas contract with these plants?

Sen. The Hon. C. Enill: Mr. President, the issue is not negotiation of the gas contracts, because the contracts are take-or-pay contracts. What we are seeking to do is to manage any revenue loss that they may have. For example, if you do maintenance work now, there is really no revenue lost, because you would have projected that within the one-year period.

Mr. President, I thank you. [*Desk thumping*]

Sen. Subhas Ramkhelawan: Mr. President, thank you for giving me this opportunity to speak on this Motion which is really to adjust excise duty on CNG. It is a truism that the journey of a thousand miles begin with a single step. It would really be a very small step, in my view, with the adjustment of the excise duty in bringing to the fore again the question of CNG in motor vehicles, but there are much larger issues in terms of this excise duty.

There are issues of the economics of CNG and the various parties that are involved in either the supply side or the demand side for CNG. More questions have been raised in this debate than have been answered with regard to the whole question of CNG.

The hon. Minister of Energy and Energy Industries spoke to the level of subsidies and, hopefully, the reduction in subsidies would be brought about by the replacement of gasoline with CNG, but I did not hear—I hope at some point in time the Minister would be able to put a number to the savings in subsidies that would be achieved by the different level of usages of CNG in terms of the number of cars.

I heard in this honourable Senate that the number of vehicles using CNG now is about 3,500 down from 5,000. I also heard that the number of vehicles on the road is about 500,000. What this means is that less than 1 per cent of the vehicles in the country are actually using CNG. I want to speak to the economics of this whole matter.

The first matter is the wholesaler who, in a sense, represents the Government. Yes, the margins would be increased by the level of reduction in the excise duty, and we would want to expect that there will be an increase in the volume to make this transition to CNG economic or viable; not only from the point of view of the wholesaler, but also from the point of view of the dealer.

Now, the dealer will benefit from an increased margin through the passage of this adjustment, but it is not only the margin that will make this economical. What is going to make it economical is actually the volume of usage. If we are at 1 per

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cent or less than 1 per cent, the question I would put to the Minister is: At what point in time does it become economic for dealers, in your view, in terms of the level of usage by motor vehicles? If we cannot define that threshold, we are not clear as to what we are working to.

Sen. Enill: Mr. President, I thank the Senator for giving way. The way in which we propose to do this—you are correct. That was the problem in the first instance. I think part of the policy also says that all government vehicles in the transportation subsector and also in the utility sector in government will be the users. You are going to have two benefits; one is a lower cost of operation which is going to bring expenditure down and, secondly, it will create sufficient volume which is correct to create a sustainable economic model for moving forward.

Mr. President: On that note, I think we will take the tea break. It is now 4.30 p.m. and we will suspend until 5.00 p.m. The sitting is now suspended for tea until 5.00 p.m.

4.30 p.m.: *Sitting suspended.*

5.00 p.m.: *Sitting resumed.*

[MR. VICE-PRESIDENT *in the Chair*]

Sen. S. Ramkhelawan: Thank you, Mr. Vice-President. I was speaking to the issue of the economics of CNG. I spoke about the participants, one would be the wholesaler; the next would be the dealer; the third would be the equipment provider of the kits for conversion into CNG—again, there is an issue that unless there is a certain quantity for conversion, it may not be economic for these dealers to stay in operation—and fourth, of course, is the consumer. I think at the end of the day the user in order to make that shift, certainly would want to be convinced that in putting in a kit, it would be economic and the payback period for that conversion would be of a certain order that would make it viable.

I point to all of these areas simply to suggest to the Government that unless these matters are carefully thought through, we are going to find a situation of a second failure to launch the CNG operations. [*Desk thumping*] Therefore, you might say that you want to put in dedicated stations, but at the end of the day the economics of it would say, if there is not sufficient consumer demand these stations will become uneconomical.

That really is at the heart of it. Are we going to have an infrastructure that would be sufficiently robust that will ensure that a real launch of CNG would become, in a sense, economical and viable for all of the parties concerned? I did

not hear from the hon. Minister of Energy and Energy Industries, nor from the hon. Minister in the Ministry of Finance what would be the kinds of levels that would have to be achieved, and what would be the kind of savings in terms of the subsidies. We have been talking about subsidies of about \$2 billion. What would be the kind of savings in the subsidies that will be achieved at different levels of conversion?

I think once we get that sense, nobody can argue that a conversion to cleaner fuel will not be for the benefit of the citizenry and of the country. What I am raising is at what level it will be economic, because if it is not economic you will not get the pace of change and change over that you want.

So, I ask the Government to carefully consider this so that after the first step, which is the adjustment of the duties, there are 999 steps which still have to be taken and therefore, we really need to go up the curve to address all of these areas before we can get CNG to become a viable alternative fuel for the citizenry of our country.

I thank you, Mr. Vice-President.

Sen. Dr. Carson Charles: Thank you very much, Mr. Vice-President. I rise to make a few points in this debate. Let me start right on the point of Sen. Ramkhelewan, because he led his contribution to what I consider to be the most important point after all, which is at what level does it become viable.

Why do we not have an answer to that question? I think the reason we do not have an answer to that question is because the Government has not done its homework. One cannot help but get the impression that this is a reactive situation here in which, having decided that to remove the subsidy from gasoline—which is Government's policy: you have to remove the subsidy—on a progressive basis, you have decided to present something else as an alternative. So one can say that, well, there would be a choice; we are not imposing high gasoline prices on you in an absolute way; we are presenting you with a choice; higher gasoline prices, because we remove the subsidy or you can have CNG, and therefore we are going to have more stations available and so on.

If the Government were really serious about promoting the use of CNG and the conversion to that form of energy in motor vehicles and so on, then it would have presented a more comprehensive and a more all embracing programme. I would expect it would have done so. The Government is accustomed to engaging in major projects, entering into major activities, and surely it is aware that before you enter into a major undertaking like this there are many things to be done. I do

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not think the Government went about establishing any of its major industrial enterprises this way. I think before you enter into it you have many things that you must put in place.

The hon. Minister of Trade and Industry promised us the report of the national transportation study some time ago, and the time has in fact passed when we were promised that report. So, I want to remind him that we will like to see it, we will like to have it; after all, this is a major transportation issue. You are not promoting the use of CNG in machinery of some manufacturing enterprise somewhere, you are not promoting the use of CNG in agricultural equipment or something like that; you are promoting the use of CNG on the roads. This is a major transportation issue and we have just had a national transportation systems plan done, and we did not include in that national transportation plan, a study of the impact of CNG; of the potential use of CNG.

I want to tell the Senate, Mr. Vice-President, through you, that transportation is not a guesswork business really. We have long passed the stage where we made wild guesses about what would happen if you introduce a new kind of vehicle on the road or a technology. I used to be a lecturer at the University of the West Indies in 1986, that was years ago—[*Interruption*] Yes, well you know, my friend the hon. Minister of Works and Transport would never come here so I can tell him what a really bad job he is doing with regard to transportation. I went back and had a brief session with the students this year, which was really good to do. I used to teach the transportation planning course in 1986—that is 22 years ago, and way back so far ago—we used to teach a programme, "transportation analysis" in which you would be able to develop models to predict the behaviour of people when confronted with transportation decisions. This is not new technology or something.

If you are doing a national transportation plan, for example, you would conduct attitude surveys to different kinds of technology that you wish to introduce, and you can set up your surveys in such a way and build your mathematical models in such a way, that you could actually predict that if the price of gas solely were to increase by 5 per cent, then the number of people using their vehicles on the road would decrease by 1 per cent, or you could predict that if there is a change in the relationship between gasoline and an alternative fuel, if you structure your surveys in a particular way, you could tell what percentage of people would switch from gasoline to this new fuel.

This is not new technology, this is something that is common, and you just completed a national transportation plan and you did not take the opportunity to

conduct attitude surveys, and build the necessary models to determine what percentage of persons we expect would switch based on different incentives, that if we were to simply make more stations available so that the actual fuelling time is less, then that would have a particular impact.

In addition to that, if you were able to reduce the cost of conversion by 10 per cent or by 50 per cent, then the impact on the number of persons switching would be such that, if you had a differential between the prices of the gasoline fuel and the CNG, if you increase the differential, or you reduce the price of CNG, or you increase the price of gasoline, then that differential would have an impact of 5 per cent or 10 per cent or 20 per cent or what have you on the number of persons switching from gasoline.

These things are common play; these things can be done; they are done every day in other areas in marketing; people do not just go into producing a new product and putting it on the market by guess. If you are making a new brand of cornflakes you are going to do some market surveys, and you would be able to have some ideas of what is the likely market share that you would get for your brand of cornflakes, before you start producing and selling cornflakes all over the place; before you import machinery and put money and so on into producing cornflakes.

So, I am really disappointed that we are going into this CNG business like this, having no idea what the impact of any of these incentives is going to be on the actual number of persons switching. We cannot dispute that there is some benefit to be had from the use of CNG. I do not have technical information on the use of liquefied natural gas to say anything about it. I do not know, so I have no idea.

Sen. Dr. Saith: Research project.

Sen. Dr. C. Charles: A research project, but in terms of CNG there is some benefit, and this goes back a long time, yes, from 1980s—I was part of the government—from a technical point of view more or less, not from a marketing point of view. At that time, we simply looking at the technical issues involved, and it has been taken up by successive administrations over time, because it has always been a good idea.

At one point in time, in the 1990s, many persons were interested in getting involved in this, in converting and so on. People converted their vehicles, despite the fact that you had to have this big thing in the trunk and so on. People who were travelling long distances every day converted their vehicles, but it was very disappointing, because all of the promises that were made by the Government at the time, in terms of stations and so on being developed, just did not come to pass.

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So, people were very disappointed and that was a really bad experience that people might still remember. So, you have to do better than just promising what you are going to do now.

My main point really is that this is part of a pattern that I am noticing of the Government here of not doing the homework; of coming with a proposal to do something piecemeal. If you are really serious about CNG, this is certainly not the way in which you can expect to get any impact. The research work has not been done; the marketing analysis has not been done. I am sure the Government has endless marketing capability and many marketing friends; they spend plenty time marketing the performance of Ministers and ministries, so you have plenty expertise in this area. If you do not have any expertise in the field of transportation at the Cabinet level, then I am sure the marketing people can assist in that particular area.

5.15 p.m.

In terms of the use of public transport vehicles and so on, that is an area in which one used that to promote the acceptance that you would like of the new technology because you have control over that area. We do not have enough of an impact really by converting buses or what have you because there are not enough public transport vehicles in the government fleet. I noticed people comment from time to time about the fact that there are 300 buses as if that actually is something, but we had 300 buses on the road more than 20 years ago, PTSC's run-out fleet was more than 300.

Sen. Browne: There were no maxi-taxis.

Sen. Dr. C. Charles: No, there were maxi-taxis, a long time ago, you know. There were maxi-taxis then I assure you and PTSC fleet—20 years ago there were maxi-taxis on the road and PTSC's fleet was run-out to 300 as a common thing; every now and then, of course, the fleet runs down and you have to build it back up to the same number. So, do not boast about the 300 vehicles you have, that is nothing! Anybody who remembers PTSC going back those years would know that that is not any great achievement to have reached that level and that has no impact. If you outfit all the buses with CNG and so on, it has no impact on the travelling public generally in terms of being a driver or an incentive to people to convert. It has no impact! If you can find a way to get the maxi-taxis to show an interest in it, then that might be useful—

Sen. Browne: Good point, public service vehicles.

Sen. Dr. C. Charles:—but just getting the PTSC and so on—Government-owned vehicles is really no use, and the maxi-taxi industry, those vehicles to get them interested you have to deal with them from a marketing point of view because they are just like private car users, you have to convince them that it is worth their while. You have to do something about the incentives for conversion, do something about the cost of conversion. If you really want to get 25 per cent of vehicles in 2015 using this means of energy or propulsion—you really want to do that, then surely, that is not something you can do by just setting the figure. You actually have to have a programme towards it and the programme cannot just be you are going to set up stations, because it has to be driven from the demand end. It cannot be driven from the other end. Who is putting in the money to support these things? The private sector is going to go and spend all these moneys just so? It has to be driven from the demand end, and the demand is going to be affected by what you do in terms of encouraging consumers. You have the control over that, you have the control over pricing especially; pricing more than anything else and you have not done anything on that.

This Motion is not about pricing from the consumer end. This is about providing some resources in the hands of the suppliers, so you are still on the supplier end, but you are not on the demand end at all, and increasing the price of gasoline, as was done recently, might get people very angry but there is no research. There is nothing at all to suggest that it is going to result in any kind of conversion. It is not a guesswork business. If you increase the price of motor cars by 10 or 20 per cent—there is no research that you have in your possession that says that it is going to cause a reduction of 1 per cent, 2 per cent, 5 per cent or 10 per cent in the demand for motor cars.

In fact, the increase in prices of motor cars is quite notorious. There is this desire to have cars, the insensitivity if you like or the lack of response or inelasticity—

Sen. Browne: That is correct, inelasticity.

Sen. Dr. C. Charles: Well, I am just giving you different ways of saying it. That is an economic term which was also used in transportation—it is notorious in terms of people's response to price increase.

Sen. Browne: So what should we do?

Sen. Dr. C. Charles: No, I am not saying you should not do that. I am saying that it is notoriously inelastic, the response is very slow and therefore you must do some research. You must do some study and determine what the level of response

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is. But there are other things that people respond to other than the increase in price and in respect of—and I just give you that as an example to say that in the case of CNG as an alternative fuel it is likely that you will have that same sluggish response, that same lack of elasticity—if you like—to conversion from regular fuel which people know about, which they are accustomed to, to this new fuel and therefore you cannot just guess that if you provide more stations this will happen or that will happen.

You must do some kind of research, you must do some attitude surveys, you must do a proper study and you must do it from a quantitative point of view—not a guesswork point of view—to determine what you really have to do to get the demand to build up so that the supply side would be able to respond and you will then be able to make some sense of all of this and in the absence of all of that, you cannot blame us for seeing it from a more cynical point of view as just an attempt by Government to show that since they had to raise the price of gas and they are going to remove the subsidy, that, well all right, here is our alternative, here is CNG, so we are not just increasing price on you, we are actually giving you a viable option. People are going to be cynical about it because that is how it looks.

If you present it in the context of a comprehensive plan however and you show the incentives and it is really something that people think will happen, then perhaps they will be a bit less skeptical and might actually buy into it because you are working against a skeptical public who is not going to just go out there, spend money and convert just like that. People are going to be very reluctant to convert on the Government's say-so.

This talk about inflation protection, that is tempting, but maybe I would not respond to the inflation protection comments, that in a world of inflation you are protecting us from it. That is really tempting to talk about, this great protection that you are giving us from world inflation, and you are protecting us from world inflation by subsidizing gas prices. You may be protecting us from high prices but not from inflation. High prices is a different thing altogether, you are protecting us from high prices but not from world inflation. What world inflation you are talking about—15 per cent world inflation? So, I think a mistake was made in that actual comment that you are protecting us from world inflation. You are protecting us from high prices.

Sen. Enill: Based on petroleum.

Sen. Dr. C. Charles: Okay, I understand that. I just took it down to see what you would have said—not world inflation, high prices. All the dedicated stations

and so on, that is all fine but the persons who came up with that—how many dedicated stations and how many other stations, 10, 40 and so on—it really just sounds like a plan from one end, it has nothing to do with reality. I am not sure whose plan that is. Who had decided to put 10 stations here, 20 stations and 40 stations with no relationship between that and the people who want to use the stations; just a study based on geography and so on, to say where you should put it?

If you have to determine how many stations to put down, it must be against the background that you have done some study to determine what people consider acceptable in terms of how far you must be able to go before you see a station because that is how people respond.

It is not good enough as my senatorial colleague was saying, you are on a trip to Guayaguayare or somewhere—the perception is that your fuel is going to be exhausted before you get there or when you get there and until you get back. Just that perception you are up against and there is a point at which people feel that stations are close enough together and may have little to do with the actual distances involved but more to do with the perception that in fact stations are everywhere and that people believe you can always get to a station. Then they believe all right, yes, I am safe, if I have my CNG tank I will get to a station, so it is based on perception. So the people who came up with the numbers of 40 or 50, that sounds like just whistling in the dark there, that sounds like guesswork. It is not related to anything, it is not related to the people's perception or to what people need to have as a level of comfort and that is what you have to work with. What is the use of dedicated stations? What difference does it make if stations are dedicated or not? As far as the travelling public is concerned they simply want to be able to get the fuel somewhere. I do not care if I am using diesel, whether it is a dedicated diesel station or another station where I can just get diesel at. Who cares about that? So, the number of dedicated stations versus the other stations is not the issue at all.

I am just making these little suggestions in case someone actually intends to take this matter seriously, then I want to suggest to them that there are people in the field who are practitioners in the field—I am no longer one. [*Interruption*] No, I am no longer one. I used to be a practitioner in the field—Transportation Systems Analysis, but I no longer am, neither are several people who used to be practitioners in this particular field—well, of course, like the hon. Minister, but also who is not a practitioner in the field anymore.

Sen. Enill: But he does not lose the expertise.

Sen. Dr. C. Charles: No, he does not lose the expertise. You should share it with the current Minister of Works and Transport, he desperately needs it. [Laughter] But there are people who are practitioners [Interruption] and you need to really get to some of these people who are practitioners in the field of systems analysis, and if you cannot find them in systems analysis at least you can find them in the field of marketing, so that you can actually do this from a more scientific and professional standpoint and present something that is a more comprehensive plan, because this after all, is a very serious matter in which many millions of dollars are involved and the Government is about to transfer some millions of dollars from one place to the other because that is what they are doing here.

As you reduce your duty, what you are really doing is—the customer is still actually paying the same price. You are transferring money that you would have actually collected to NP, to dealers and so on, and if you are going to transfer all of these moneys somewhere in the hope that somebody would do something with the money, the least you could do is a proper professional plan that is credible, that is demand-driven and that can be marketed to the country, and people would not be just taking a cynical view that you present this just as a way of explaining why you had to raise the price of gas and why you are going to continue raising the price of gas in the future, and why nobody should get vex when you raise it next year, because, after all guys, “here is CNG on the other hand,” because that is certainly how it comes across.

Thank you very much, Mr. Vice-President.

Sen. Dr. Jennifer Kernahan: Thank you, Mr. Vice-President. I want to thank you for giving me the opportunity to say a few words on the Motion before us. This Motion actually is about decreasing the excise tax on compressed natural gas (CNG) which the Government hopes would promote the use of compressed natural gas in this country.

Compressed natural gas is a substitute for fuels such as gasoline, diesel or propane fuels and this particular fuel is important because of its high octane value—130—and its higher compression ratio which gives greater thermal efficiency and therefore reducing carbon dioxide emissions. It is important to remember though that this compressed natural gas does produce greenhouse gases although it is said to be more environmentally-friendly than the traditional fuels.

The value of compressed natural gas is that studies have shown that it emits 40 per cent less nitrous oxide into the atmosphere. This is a gas that creates smog.

It emits 90 per cent less hydrocarbons which are carcinogens and it emits 80 per cent less carbon monoxide and 25 per cent less carbon dioxide which is a major greenhouse gas.

Clearly, this is an important step forward in many of the countries that have made this policy to use an alternative form of fuel. CNG can be used and is being used as we speak in traditional internal combustion engines and that have been converted to bi-fuel vehicles which means that they can use both CNG and gasoline and it also has been used in many developed countries in pickup trucks, in medium delivery trucks, in transit on school buses, in trains and so on. So, Mr. Vice-President, this, as my colleague said is not a new technology by any means. In fact, in Australia CNG has been used as a fuel since 1937. The French used it in World War I. In Italy it has been used since 1945; in Canada, New Zealand and so on, since in the 1970s they have been using CNG extensively; in the Asian countries and the South American countries since the 1980s they have been using CNG extensively as an alternative fuel.

In fact, Mr. Vice-President, research has shown that there are over seven million transport units being used worldwide, 90,000 in use in the United States.

5.30 p.m.

Mr. Vice-President, there was mention by my colleague and others with respect to the safety of CNG and that is a major issue. I know people have the idea that you want to use CNG, but the whole idea of these huge cylinders, in cars that have to be converted, in the trunk there is some concern about the safety. But up to now, comparative research has shown that because of the thickness of the cylinders and the fact that CNG is a gas that rises and is not as flammable at lower temperatures as diesel and gasoline, it is fairly safe and is not a factor that should concern us.

In fact, one of the advantages of CNG is that there are less processing requirements to arrive at as opposed to LNG for example, and therefore, you have a lower cost of production. So the fact that Trinidad and Tobago has been characterized by this administration as a gas economy, it seems paradoxical that although this is such an old technology—I think we have celebrated 100 years of production of gas and oil in this country very recently—we are only now coming at this point in time to try to effect a second launch, as Sen. Ramkhelawan said of this whole issue of the use of CNG, given its clear benefits to the environment and the economic benefits in terms of cost.

Mr. Vice-President, the Minister in the Ministry of Finance in his presentation outlined the benefits and so on. He mentioned improved engine wear and tear,

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fewer oil changes, high octane rating, safety and the environmental benefits. But it struck me as being very hypocritical of this administration to come today in this Parliament to talk about environmental benefits of CNG when they are busy building a smelter plant that will release thousands of tonnes of nitrous oxide, carbon dioxide and carbon monoxide gases into the atmosphere in this country, products which are very serious greenhouse gases, in the context of global warming and the dangers of global warming that is the hot button topic all over the world today. So, I totally reject the environmental argument because clearly this administration has no qualms about polluting our environment. So they should not come here today to talk about the benefits of CNG, one of the benefits being the environmental benefits. They should leave that one out. Out of decorum and decency, you should leave that one out. You know you do not have any credibility.

Sen. Enill: [*Inaudible*]

Sen. Dr. J. Kernahan: Yes, you are busy building a climate change machine in La Brea and you come here to talk about environmental benefits of the CNG, so I am asking that you leave that benefit out of your debate.

Mr. Vice-President, given the fact that we are a gas-producing country and exporting 70 per cent of our LNG to the US, and given the fact that the Minister of Energy and Energy Industries got up here this afternoon to let us know that since 1990, the Government had taken this policy decision to develop the CNG industry, how long ago that was? Eighteen years ago. I believe that this administration should have some explanation as to why 18 years later, after having taken policy decisions with respect to CNG, we are at the point at which the Minister in the Ministry of Finance outlined it and he outlined a very sorry picture. He mentioned that there are only 3,500 cars in Trinidad and Tobago using CNG. He mentioned that there are problems with respect to refilling these tanks and that there are insufficient stations.

I think the Minister of Energy and Energy Industries mentioned that there are only 13 refuelling stations. So, you took 18 years to come and tell us, "Well, this is the story. Our policy decision to convert to CNG as the preferred fuel for cars in Trinidad and Tobago because of our environmental issues and the cost and so on has come to naught." Really the Minister should have come here and given us an explanation. So when they come to ask to make all these grandiose promises again with respect to CNG and the development of networks, stations and dedicated plants and so on, we have to take it with a grain of salt, because obviously this administration has not shown any commitment towards implementing their so-called policy that they have admitted here this afternoon that they have had in place since 1990.

Mr. Vice-President, what it seems though is that this whole second launch of the CNG initiative is a knee-jerk reaction with respect to this new policy formulation that they came up with, where they have decided to eliminate the gas subsidy at \$2.4 billion in the next couple of years. So, having had no track record with respect to any serious application of their policy to implement the CNG, it suggests that this is a knee-jerk reaction because they suddenly got up one morning and decided, you know what, we have to eliminate this \$2.4 billion subsidy, and therefore, we have to really concentrate now and go back to 1990 and take up where we left off and deal with the whole issue of CNG. This is how they operate. There is no structured implementation of any conversion to CNG because you would have seen—you cannot hide it—the structured approach as they would have been going along.

Mr. Vice-President, many countries have been exploring and doing research, R&D, on the whole issue of alternative fuel including ethanol from sugar cane which is highly developed in Brazil, where over 80 per cent of their transport units now run on gasohol and so on. From the 80s, car manufacturers have been developing vehicles which are dedicated users of CNG fuel, and therefore, we would have thought that a government that would have had a vision and some level of planning and purpose, would have seen maybe, encouragement of the use of these dedicated vehicles in the country, in government and statutory authorities where they use vehicles—over the 18 years you would have seen that Government is slowly converting its vehicles, fleets and so on to CNG. Therefore, you could come here this afternoon and tell us, “this is not a vaps, this is not a vaille que vaille approach, this is not a knee-jerk reaction, look at what we have been doing over the last 18 years”. That would allow us to know this is a planned approach to a change to CNG. I think Sen. Dr. Charles was making that point that there is no evidence at all of any planned approach.

Mr. Vice-President, the Minister in the Ministry of Finance got up here and spoke very glowingly of the number of countries that are using CNG, but what the Minister did without recognizing it, was actually highlight the retrograde nature of his administration. Because what the Minister did not tell us, is that some of the countries he called, they did not get up one morning in a vaps and decide to switch because they want to reduce a fuel subsidy and so on, they did it in a methodical planned manner.

In Canada—I think that is one of the countries that the Minister mentioned—they actually developed their CNG fuel trucks, buses and engines and research has pointed out that CNG refuelling stations are not difficult to find in major centres in

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Canada. So they have their network set up, structured and so on and they have actually developed the technology in terms of dedicated trucks, cars and buses and so on that could use CNG.

In the United States, the federal government tries to encourage citizens to switch and use CNG because of all the benefits; they offer federal tax credits when you buy a new CNG vehicle. This is what they are doing, offering federal tax credits, so you see a planned and structured approach with incentives. I think Sen. Dr. Charles was raising the point of incentives and what incentives do people have to switch? You cannot just say, cut the excise tax which has nothing to do with the bottom line, which is the price that ordinary people pay for CNG, and expect that you will have this massive happy switch to CNG.

In the United States which has a structured, planned approach because Congress has encouraged the conversion of cars to CNG with a tax credit up to 50 per cent of the auto conversion cost and the CNG home-filling station cost, my colleague mentioned the fact that in the United States they also have the facility of allowing you to have a home filling station that you can fill up. They are offering you 50 per cent tax credit for you to set up your home filling station and 50 per cent tax credit for you to convert your automobile to CNG. Beg pardon?

Sen. Enill: [*Inaudible*]

Sen. Dr. J. Kernahan: Mr. Vice-President, in Australia—the Minister mentioned these countries—they have a policy—Brisbane Transport, and transport in Australia has adopted a policy of only choosing and using CNG buses. Right here in South America, Argentina and Brazil are the two countries in Latin America that have the largest fleet of CNG vehicles, but it did not happen by chance. It did not happen by jumping up one morning and saying, cut some excise tax from CNG, and it is going to happen. You are going to have this mad rush of people looking to change. They said that this change, these large fleets of CNG vehicles in Brazil and Argentina were facilitated by three things:

1. That there was a substantial price differential with respect to the liquid fuels.

It is cheaper of course and that is a great motivator.

2. Locally produced conversion equipment.

That is what they did. They ensured that they went into that technology of producing locally produced conversion equipment, and obviously all the benefits

that would have accrued to them with respect to having these conversion kits produced by their own technicians and so on.

3. A growing CNG delivery infrastructure.

Mr. Vice-President, that is obvious and there is no indication that this administration has made any effort to expand a proper network and so on.

We hear about people going to Guayaguayare and having to go to Toco first to get CNG and so on. They have done absolutely nothing over the years in terms of showing us, showing the population that they have a policy in place, and that they are seriously committed to that policy. If so, you were going to go along in the 18 years since then, doing things that would show us that you are coming to the point where you want an optimal use of CNG in cars, buses and fleets and so on in this country. You have not done that, so we are forced to believe that it is a knee-jerk reaction to the fact that you want to remove the subsidy at this time.

5.45 p.m.

Mr. Vice-President, these are the issues that would facilitate conversion, not the cut in excise tax that has nothing to do with the bottom line and the price that the ordinary citizen pays for conversion. The excise tax will help, hopefully, as Sen. Dr. Charles said. You are transferring moneys to the one dealer, NP, distributors and so on, hoping that by doing that they would do the right thing and expand, but as Sen. Dr. Charles rightfully pointed out, it has to be demand driven.

Why would these funds you have transferred encourage them to invest if they are not demand driven; if there are not incentives; if there are not these tax cuts that other countries have found to be important and useful in encouraging people who want to shift? Why would they invest if there is not this tax cut which would allow a cheaper conversion of your car to CNG, as other developed countries have done to ensure that there is this demand?

All that would happen is that you would cut this excise tax; people would just pocket the difference and go along their merry way; nothing much would happen, and as Sen. Ramkhelawan said, you would have another failure to launch. Despite all your mumblings and murmurings on the other side, you would have a failure to launch, because you have not done the right thing, you have not committed to the project; you have not established the will to see this project through by taking the correct steps, as other countries have done. I have pointed out what has facilitated the change to CNG in other countries.

Mr. Vice-President, we have all these issues; the Minister pointed them out: the long waits, the fact that you still do not have these quick-fill stations in place

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after 18 years. What policy are you talking about, when after 18 years you still do not have any of these issues in place to facilitate the general population being motivated to convert?

The Minister mentioned Singapore; if he did not mention it, I would have.
[*Interruption*]

Sen. Dr. Saith: That came up on your screen?

Sen. Dr. J. Kernahan: No, he mentioned a number of countries; I cannot remember all that he mentioned. I will have him know that when he glowingly talks about those countries which have CNG, it did not happen by chance.

In Singapore they have a green vehicle rebate for users of CNG technology; it was introduced in January 2001. They give a 40 per cent discount on the open market value cost of a newly registered green passenger vehicle, as I suppose they call the CNG vehicles. So they do things to make sure the population is motivated to change to CNG.

You cannot just sit in this Parliament and say that you have decreased the excise tax, and then run out there and say, "Well, now we are going to take away the subsidy because everything is in place." This was the impression we got this afternoon; correct me if I am wrong. From the Minister's opening presentation, that was the whole tenor of the debate. The thrust was that since you have this cut in the excise tax, this was to facilitate the move and switch to CNG. Was that not so? We are saying that is not enough; you have not done enough in the last 18 years; you have done nothing to facilitate and introduce this change.
[*Interruption*] I am telling you what you have to do.

[MR. PRESIDENT *in the Chair*]

It came up on my screen and I am telling you what you have to do. Go and look on your screen and see if you could find out what you have to do. One of the things is a green vehicle rebate, which is given in Singapore.

The Minister mentioned Iran. They have 650,000 vehicles converted to CNG, but they also have—what we do not have here—specialized workshops set up in the country to make sure that conversion could take place easily, quickly and conveniently, so persons do not have to wait for months to get this conversion done at high cost. They also have over 400 refuelling stations all over the country that could facilitate the users.

In the US they have over 1,300 refuelling stations, and they have introduced the home compressor stations. They also give you a tax credit to set up your home

conversion station. This is what you have to do when you are serious and you are not mamaguying people; when you are not just coming up with things and taking things out of a hat, ever so often, just to pass the time here in Parliament. Sometimes that is the impression I get, that you come here to pass the time, but you are not really serious about anything. [*Interruption*]

Sen. Browne: That is exactly what I was going to say about you.

Sen. Dr. J. Kernahan: That is the impression we get when after 18 years you are still standing there and talking about, "Oh, Mr. President, we do not have fuelling stations; we do not have this, we do not have that; we are lacking this, we are lacking that." That is the impression I get, that you come here to pass the time; you have nothing to do on a Tuesday evening, so you come here and "lime". [*Interruption*]

Sen. Browne: I thought you would have gotten the point; I was thinking that about you.

Sen. Dr. J. Kernahan: Mr. President, the Minister's presentation also brought out the fact that there are drawbacks to the conversion of cars from gasoline or diesel to CNG, so you have to take that into consideration when you are asking people to change. There is the loss of trunk space. The huge tank now has to go in your trunk, so you lose a lot of your trunk space, and there is also the whole cost of conversion. Therefore, with the question of choice—the Minister of Energy and Energy Industries emphasized that this was about giving people a choice; there are other options. You can give them the choice of being able to access dedicated vehicles that you do not have to change over, that you do not have to go through that expense, you do not have to have this huge tank in your trunk.

There is also an option that you can encourage the importation and use of dedicated vehicles, which are built with that in mind, therefore the tanks are inserted under the body of the vehicle, leaving the trunk free. I think my young colleague, Sen. Spicer, referred to that. There are a number of motor vehicle manufacturers who have it. This is not new stuff; this is old technology; General Motors, Peugeot, Volkswagen, Opel and so on, all sell bi-fuel cars. In Peru and right here in Latin America, there are countries which use a lot of these cars: the Fiat Multipla, the new Fiat Panda, the Volkswagen Tourane, the Chevy Taxi, and so on. They are available; people use them right here in Latin America, because they are serious, because they know what they are about. They know what they want to accomplish; they know what they want to achieve. People in these countries demand results.

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Eighteen years have passed and we get another sad story in this Parliament, because there was no dedicated attention to this issue until we reached crisis proportions. You have a \$2.4 billion subsidy that you want to get rid of, so you just jumped up one morning, took that issue out of the hat and came back to Parliament.

Mr. President, this is one of the issues I believe would prevent us from believing that the Government is serious. I know that this Government has set up the University of Trinidad and Tobago (UTT) and that we are supposed to be producing all these technicians, all these young, bright persons who would be able to deal with this new globalized economy and the diversification of the economy. Yet I was waiting to hear that the Minister in the Ministry of Finance, the Minister of Energy and Energy Industries or somebody would get up and say, "We are looking long-term; we want to ensure that all the economic factors that we envisage, all the benefits that would accrue to this project would, in fact, materialize; in fact, we want to set up an industry here to manufacture the gas compression kits, so that as time goes by and maybe with higher prices and inflation in the global market, it would not affect us too much, because we have a B plan here with respect to the cost and manufacturing of these kits." I would have loved to hear that.

I was waiting to hear that, because we are into, according to this administration, a whole new era of technology; we have a technology park and the Tamana Infotech Park; all these things are being touted. I waited to hear that the Minister had some plan that would allow us to say that these kits are expensive, they are imported from abroad, maybe we could look at the whole question of local manufacturing, networking and the interlinking of different sectors of the economy. Obviously it may take them another 20 years to come with up with something like that, so I will not hold my breath.

There are other issues in terms of what your ultimate goal is; I think Sen. Dr. Charles asked that question. We did not get a sense of what the Government's optimal number was; what they would like to see converted to CNG. There must be some optimal number. I do not think the Government envisages dedicating the whole fleet of cars or buses on the road to CNG. You would have an optimal number based on your constraints, based on the number of centres you could set up, based on the trained mechanics you have who are able to service these CNG kits. Where are they being trained? Are they being trained? Are you looking at that? Do you have the capacity? Are you developing the capacity to deal with the expanded network and the number of young technicians who would be able to deal with these CNG kits?

Mr. President, these are the sort of issues that we would have liked to hear this afternoon, to give us a sense they are really committed, that they are serious, that they have these things in train, that things are happening.

Eighteen years ago when we thought that this was a nice step forward, that the whole world was going this way and it would bring so many benefits, nobody thought in 1990 that we would be coming back here in 2008 to debate this. I am hoping that I do not have to come back here in the next maybe 10 years, an old lady still trying to understand what is happening here, why they have not converted and why they have so few fuel distribution points. *[Interruption]*

Sen. Browne: We cannot take 10 years of this. *[Laughter]*

Sen. Dr. J. Kernahan: Mr. President, we want to know. We would have liked to hear from the Ministers this afternoon the kind of projection they have with respect to this. Sen. Dr. Charles made this point, that it could not be all airy-fairy. There are numbers and projections based on your constraints and based on the cost that we do not hear. That was the reason Senators were about to wind up the debate early this afternoon, because we got nothing from the Minister to give us any sense of where this was going.

It was only when the Minister of Energy and Energy Industries got up that we got a little more life in this debate, because he put a little meat on the bones of the presentation. *[Laughter]* *[Crosstalk]* This is the sort of presentation we really would like to get from a government that is in charge, that knows what they are about, that knows where they are going and that knows where they are taking this country. As far as we are concerned, 18 years have passed and we are still in the wilderness with respect to this very important issue of the switch to CNG.

There are risks involved in the system. The Minister of Trade and Industry made the point that we have these cross country pipelines and that they would be able to carry the gas to the relevant points. *[Crosstalk]*

Hon. Senator: Sen. Ali made that point. *[Interruption]*

Sen. Dr. J. Kernahan: Sen. Ali made that point? You did not make that point? I am giving you more credit than is due to you. *[Laughter]*

There are risks involved; there are studies which need to be done. Of course, this Government runs into everything willy-nilly, disrespecting all the experts, believing that they are the sole depository of knowledge, wisdom and so on.

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In fact, India has done studies that have indicated that although CNG is cleaner and more environmentally-friendly, actually what happens is that the CNG upon being burnt emits ultra fine particles which can settle in the lungs of persons, adversely affecting health. So when one looks at the whole question of CNG and getting more cars and vehicles on the road, this Government should do the baseline studies and the health studies which will let them know what the baseline is with respect to the population and, therefore, they will be able to trace as they go along what effects, if any, that the CNG has on the health of the population.

This is very important because India has this problem and they have set up structures to do the air quality impact assessment and baseline studies and so forth that would allow us to know the effect of CNG. Methane has been known to be a greenhouse gas, but because of the way it is burnt, the studies have shown that it emits less emissions but there are finer particles which could have its own risks and health hazards. So it is not just a question of the economics or the environment, it is one also of the health of our people, measuring the health as we go along and being conscious of that and not just running into things willy-nilly because you want to eliminate a subsidy.

It is looking at the risk of having a large section of your transport system run on one type of fuel. What happens if there are problems in the delivery of the gas, where you have a pipeline running through the country? Anything could happen, so you have to understand that if something happens and gas cannot be delivered as has happened in other countries—Are they dedicated cars? Are they bi-fuel? Will it have any impact? So all these are issues that need to be looked at and understood in terms of going forward.

Mr. President, we can only sit on this side and hope. We have spent the last 18 years in terms of the original proposal for this CNG, there was a launch which has failed, they are about to have a second one and we are not optimistic because of the fact that the steps that should have been taken were not, the alternatives that should have been given to the people were not forthcoming, there is no question of issues like dedicated cars being given that prominence and push, there is no question of rebates being given to people so that they can switch very easily and quickly. So we are not hopeful but we live in hope and for the sake of the people of this country, we hope that this Government is really committed this time around to this second launch.

Thank you.

The Minister in the Ministry of Finance (Sen. The Hon. Mariano Browne): Thank you Mr. President. I would like to at least thank Sen. Dr. Kernahan for saying that this debate ought to have finished earlier.

Sen. Dr. Kernahan: I did not say that.

Sen. The Hon. M. Browne: I thought you were very close to that, but it should have because there is nothing to argue here and in that regard I am reminded of the exhortation of Sen. Prof. Deosaran, who said perhaps we should score less points on a political basis and get on with the business of moving this Senate forward, for there is little to argue about.

With respect to the points made by Sen. Basharat Ali, and I always thank him for raising some fine points of details which test me. In fact, the CNG Order, 1999 was passed, but it was not published. That seems to have been an error. It was laid in the House on March 26 and in the Senate on April 06. It was debated on April 06 and 09, so therefore it was confirmed. So even though it was not listed, it was in fact passed. So it does need to be repealed in order to move the current motion forward.

With respect to the issue of the excise tax being a manufacturer's tax, at the end of the day all taxes essentially reach to the consumer who ends up paying for it. So it is less a question of the incidence of taxation, than the point of fact it is part of, if you want, the make-up of the pricing. There is a differential pricing system; the issue that had been made is how—

Sen. Ali: That only gives part of the answer, Minister. The other question I asked is if it is a tax, who is liable to pay? That was the second part of my question.

Sen. The Hon. M. Browne: I thought I had answered that by saying eventually that the consumer always pays the tax, the excise taxes are generally passed on, and it is done so by way of the final price.

With respect to the issue of policy, it could perhaps be best simply to refer to the budget speech where the statement was made by the Minister of Finance very clearly as follows:

“...the Government is in the process of expanding the distribution of Compressed Natural Gas (CNG) as we move to a cheaper, economically efficient and environmental friendly fuel system. As a consequence, we propose to remove the Customs Duty and Value Added Tax on the Conversion Kits for modifying from Gas to CNG Kits. Mr. Speaker, further to

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this measure the Government proposes to convert all public service vehicles to CNG usage. The Government will also put measures in place to increase the number of service stations and geographic distribution of these stations offering CNG. This will be achieved over the next two years and begin a progressive move to reduce the fuel subsidy which now amounts to \$2.4 billion.”

A statement of policy, Mr. President. It is quite clear that there needs to be not simply the issue of conversion kits and the conversion at the level of the individual, or the individual car, but at the level of those vehicles which actually do spend the most time on the roads; taxis, buses and public service vehicles and it is clear that additional work needs to be done in that regard.

I am grateful to Sen. Dr. Carson Charles for indicating the need for additional research and homework. He talked about the issue of a transportation model and we have to have some clear idea, taking off on the point made by Sen. Ramkhelawan, in terms of what do we project. The answer is when one is beginning—because in fact, we are beginning again—it is difficult to make those projections to start. It is clear we need to build it up overtime and this is just, as I said before, the first step in a long journey. So there would need to be compensating policy adjustments which would be articulated as we move along.

There are a number of points that lead to immediate reaction, no policy, we could have looked at ethanol and so forth. In fact, extensive research had been done on ethanol in the 70s and it was discounted as a fuel, largely because there was not sufficient land mass, and at the time, the price of sugar was very high, also the development of gas that we moved into as a fuel to determine our economic path.

It is clear on the basis of the projections, the numbers with regard to the number of vehicles on the road, and also the environmental consideration that a more discriminant pricing policy has to be put into position and this has been articulated, and certainly the movement towards that policy has been started.

What will also need to be considered, but which has not yet been considered is changing perhaps the structure of the importation, or the types of vehicles that we import. For example, a policy measure could include ensuring that all new vehicles being brought into the country could be dual or bi-fuel vehicles; a vehicle which would be set up to use either CNG or alternatively fuel. That would be a possible device moving forward, and certainly it is something that would need to be considered. This is not to say that it is being considered at this time or it is a measure that will be done.

I note also the comment in relation to the use of LNG for cars to cut pollution. It is interesting that one of the first notes that was passed to me by Sen. Rahman states—and I will do well to quote it. It is from china.org.cn—LNG cars to cut pollution. The first paragraph says:

“The Chinese government is expected to launch a program to research and promote the use of liquefied natural gas (LNG) as a vehicle fuel as it attempts to address the problems of a soaring number of cars...”

The other documents which were presented do indicate that there is some technology which allows for doing that, but clearly, it is not a technology that is in wide issue or use.

Interestingly, the last paragraph of the article which is also a quotation from the relevant Minister of China who is responsible for this particular effort ends the article by saying:

““In our opinion, CNG will be more important than other alternative fuels, so we are investing more in CNG than in other fuels,””

I take the point that there are alternatives but we must start off from where we are and where we are strongest. Looking at the economic landscape of Trinidad and Tobago, Trinidad’s industrial strength was built on oil to start, but certainly concreted on the issue of cheap energy and cheap energy policy in the use of natural gas.

The first decision which started us along that road was the one to use gas to generate electricity supplies, and that decision has formed the basis of our competitive and comparative advantage. The issue of using CNG is just simply one other methodology to move in that direction.

At least one comment had been made with regard to the efficiency and I thank Sen. Ali for talking about the litre equivalent and I think in response to Sen. Spicer, the economics suggest very clearly that it is far more efficient to use compressed natural gas. The issue of the distance or range that it facilitates has to do with the volumetric considerations and that is one of the reasons why most bi-fuel cars carry an alternative, so that in the event you do not have sufficient compressed natural gas, you flip the switch and use normal gasoline.

Those are technical issues that will be conquered in time because we do have at least one vehicle at the moment which is a pure CNG vehicle which I think is produced by Honda. It is very popular in California, which as a state has done the most in North America to use CNG.

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With respect to the use and how you fill up at different stations, the fill-up stations can be done at home actually, to the extent to which gas is used or is piped into the individual households. You can, in fact, set up your own fuel pumping station at home. You simply plug it in the same way as you do in a gas station and they do have fast-fill and slow-fill as well at home and that is also used in California. So there are several different opportunities. Those require substantial capital cost and no amount of feasibility studies are going to make it worthwhile in the short run. There will be need for State intervention and subsidies and that would come as we move along.

The point has been made by many commentators that the cost of the fuel subsidy has been expensive. This is not simply a subsidy because the price of the subsidy has been removed. In any event, much of the country has made comments on the need to be more efficient in terms of government expenditure. The fact that we have a large number of cars on the road using the fuel subsidy, it is in fact going up in smoke. So there are price signals that have to be sent and they have been sent and clearly, there are alternatives and again, it is left to the individual consumer to make some choices. We have not legislated what one must do; we have given the alternatives in what you can do.

6.15 p.m.

So I think that this matter has been ventilated sufficiently here today and therein consensus that we are in general agreement with the introduction of this measure and I so move.

Thank you, Mr. President. [*Desk thumping*]

Question put and agreed to.

Resolved:

That the Excise Duty (Compressed Natural Gas) Order, 2008, be confirmed.

ADJOURNMENT

The Minister of Energy and Energy Industries (Sen. The Hon. Conrad Enill): Mr. President, I beg to move that this Senate do now adjourn to Tuesday, November 18, 2008 at 1.30 p.m., where we would debate a Bill to prevent tobacco use by young people; enhance public awareness of the hazards of tobacco use and ensure that consumers are provided with information to make more fully informed decisions about using tobacco; protect individuals from exposure to tobacco smoke, et cetera, by the Minister of Health.

Question put and agreed to.

Senate adjourned accordingly.

Adjourned at 6.16 p.m.