Future of Energy in New Zealand

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Good morning.

Some of you may be wondering why the CEO of a company that left the NZ upstream some time ago and now seems to focus more on the quality of coffee and the price of milk is addressing you today

I have been asked for some personal views on the challenges facing the energy sector I would like to share these with you this morning.

BP is the largest of the oil companies active down stream in the country and of course it should be noted that BP is looking closely at New Zealand as a possible LNG play.

I have framed my remarks to hopefully be challenging and possibly contentious. If I offend anyone let me apologise in advance, I am speaking in the hope of encouraging debate.

"May you live in interesting times " it is an old curse I believe, which I think fits New Zealand and its energy industry very well at present

In an increasingly hostile world where threats of terrorism and global pandemics make daily news, our remote situation seems to confer some degree of security on us.

The very distance that makes us feel safe works against us when we seek to sell our products in an increasingly competitive international market.

It also works against us when we seek to import goods and manage our energy needs.

For some reason at the same time our range of global friends seems to be growing smaller than before. Relationships with traditional allies appear less robust, we seem to be less "well connected" internationally.

And even though our economy is experiencing something of a boom domestically our sense of local security has been rattled by dry winters, a growing debate around social equity, a sense that our weather has got worse (hundred year storm) and of course loosing a couple of sporting cups (precious silverware in the sporting arena hasn't helped).

Our natural competitive edge of adding value to primary production using low cost energy seems to be eroding

There is a growing public awareness of the fragility of our energy infrastructure as single point failures have shown its increasing lack of ability to cope and the prospect of the Maui decline looms over us all.

Its feels less friendly, less safe, less secure, harder to make a buck.

It is against this background we must have a conversation about the future of energy supply in New Zealand. While it is very tempting to focus immediately on the pressing issues of today I feel it is helpful to step back and attempt to view the question from a longer-term perspective.

The universal aspiration for economic well-being is increasingly being discussed within terms of sustainability.

Sustainability frames the conversation this way

- How do we sustain our rate of economic progress?
- How do we sustain and improve our social structures"
- How do we sustain our environment and reduce our impact upon it?

How do we do all these things so those of us living now enjoy it and those to come later who are our children and their children enjoy it as well?

It is becoming increasingly accepted that the world is at or approaching an inflection point in its development of national economies and concepts of sustainability are becoming more mainstream.

I think this is a useful frame in which to do business in the energy sector today, it is how BP looks at the world.

What this concept of sustainability does not suggest is that we must cease using finite resources but it does mean we must be aware of the impacts today and in the future surrounding their (utilisation) /consumption.

Crudely put we have to consider which natural resource do we use up next while trying to buy ourselves time to get to a totally renewable future without killing the planet.

If we consider a longer time frame, say 50 years, we would probably have general agreement in this room that by then that our sources of energy and technologies we will probably have changed a lot.

For that to have happened there will no doubt have been significant investment at some point in the future, but not today and not affecting me right now.

As time passed we would have seen elements of historic investment stranded, some of today's corporates will have faded away and new ones arisen to take their place. New commercial relationships will have been formed and traditional economic values will have been replaced by new ones.

I would suggest that in fact we are already some way along the sustainability journey and are making sustainability investments decisions today but we are doing it in something of a vacuum.

I believe we need to have a much more intense national discussion around energy on the longer wavelength. More effort needs to be put into considering just how NZ will fit into an increasingly carbon constrained world, where issues of energy security and energy supply will need to be balanced with environmental impact and energy cost. Where attaining high levels of business confidence to manage new risks will be important to encourage investment in new technologies.

Many groups are starting to grasp this issue; the conversation is starting within the business and academic communities the creation of a new Chair at Auckland University (Centre of Excellence in Energy) is but one example. I would call on government to engage more fully in this process, the absence of a well developed energy policy addressing the central elements of the total energy needs of the country is one of the elements that has contributed to our present dire situation.

It is difficult to make good decisions for the long term when short-term pressures are acute. What is not well articulated or widely understood is how the pressing issues of today fit into the longer time frame and what the consequences of today's decisions will have in the future.

I would like you to consider New Zealand energy future for a moment from the point of view of Sustainability. And I really want to principally focus on two of the elements of the sustainability definition I have used namely: Economic and environmental and I will leave aside societal elements for the moment.

For the first time in quite a long while New Zealand is stringing together a period of sustained economic growth. And I am sure we all want and need it to continue to do so. Underpinning this New Zealand's total energy demand is growing rapidly, very rapidly

Electricity consumption continues to climb, outpacing almost every forecaster's predictions.

Transport fuel consumption is increasing, demand for coal is growing and demand for gas is growing.

Improvements in energy efficiency don't appear to be making a noticeable impact on the rate of increase at a national level.

Energy intensity of every day life is increasing.

It is very clear for continued economic success New Zealand will need more energy to sustain its economy into the future.

In addition our national Infrastructure is challenged in many areas including energy – water, sewage, roading, oil refining, bulk oil storage, power transmission and generation capacity.

All are coming to the upper limits of their current capacity.

We should recognise our economic growth story is not currently sustainable as we don't have the infrastructure and energy sources developed to support further growth into the future.

What can we notice about the energy mix?

Currently over 70% of our total primary energy requirement comes from fossil fuels, (oil, gas & coal) much of this is already imported.

While globally hydrocarbons as both a liquids and a gas are in abundant supply, the locally produced energy content is declining and is due fall more rapidly.

This is a real issue there will be a fuel shortage for gas-fired power plants, which constitute 30% of our generation capacity in the coming decade.

New sources of fuel and additional capacity are required, where are these going to come from?

If we consider the second element of sustainability for the moment, the environment

New energy sources that have no environmental impact are clearly most desirable.

The percentage of renewables in our energy mix according to my calculations is about 22% (and I include burning wood and geothermal power production to get that number) today wind and solar make no impact.

We are still along way from having an economy solely based on renewable energy forms.

The growth rate of renewables is one of the more significant key performance indicators of our journey to sustainability and it is too low currently.

Those limited government initiatives to support renewable activities should be acknowledged but these are not enough to make a real difference in the short term.

It is my view that best opportunity for increasing the renewable content of our supply mix on a short time horizon lies with geothermal, one questions are we doing all we can in this area.

Even with dramatic improvements in geo thermal capacity and other renewable energy sources New Zealand will have to have access to more energy.

If we wish to continue to enjoy our current standard of living and see more and more New Zealanders having a growing quality of life then our principal source of primary energy will have to be fossil fuels for some considerable time to come. Our challenge then becomes how we use them responsibility.

We must use them as efficiently as we can with as low an environmental cost as we can manage.

Lets run through the fossil fuel options: oil, gas and coal.

Our demand for oil, principally as a transport fuel, can be expected to grow strongly. Changes in fuel specifications and engine technology will improve the performance and reduce the environmental impact of the national fleet, as vehicles are progressively renewed. And it is quite likely that in the 50 year time frame that NZ will still be relying on the internal combustion engine for most of its transport requirements. Oil is already too highly priced for use a fuel for base load power generation.

Gas is the next alternative. No gas for NZ is not really an option.

The environmental impact of gas use is lower than that of the other fossil options. It is capable of efficient conversion to electricity or transport by pipeline or ship.

Lack of exploration activity locally has seen cover ratios decline and now only a few years of know reserve remain. The search for more domestic gas must be pursued at pace.

Recent changes in government policy to stimulate exploration are encouraging but I ask myself "Do they go far enough?" I think policy settings must be flexible enough to cope with both the short and long term issues.

Firstly how do we build domestic gas reserves back to a respectable level over the longer term? Policy settings should allow for a more considered timeframe and cover all areas of prospectivity.

Secondly how do we deal with our immediate challenge for gas supplies?" It seems to me that an additional set of initiatives is needed that has more focus designed to drive activity into those areas which provide the most chance of early success.

I would further suggest that up front government investment in these areas may be the only way of getting sufficient activity underway in what can only be a very limited time frame before other energy options (such as LNG or coal) have to be implemented.

Even with a more beneficial set of government policy settings does the domestic gas community have what it takes to get the job done? Is there sufficient capital available, do the current set of players have sufficient capacity, attitude and drive? The departure of the last super major active in NZ does leave a gap. Future success is this regard in now in the hands of smaller companies.

Exploration activity levels, especially offshore have been low, success rates mostly onshore while improving from historical lows one must give one cause for concern.

On past performance one would question that.

The time window is short, a matter months. I would suggest lack of success in the next 30 months will mean other options will need to be implemented to ensure national energy security.

The outcome of exploration is uncertain. Is gas at a higher price is better than no gas at all?

I believe LNG is a real option for NZ. It is one that will provide certainty of energy outcomes. Certainty around reliability, availability and price. It would provide certainty to business around input costs.

An import terminal and regasification facility could be constructed, at a number of locations, in the North Island, alternative innovative floating options are also real possibilities. Early estimates indicate capital cost of these facilities would be of a similar order to the Pohukura development and would be less than Project Aqua.

Additionally an LNG solution in some circumstances could defer or reduce the need for additional investment in other parts of the national infrastructure namely the transmission system.

Current estimates indicate electricity prices in the range of 7 – 9 c/kw are possible. This may well be the range facing electricity users.

Increasing flexibility in LNG pricing formulas can be used to manage concerns around the price of the gas itself. Using LNG does not necessarily mean linking NZ electricity prices to the cost of oil far from it.

Let me make some comments around coal. Coal provides much of the worlds electricity yet here in NZ coal is perceived so negatively.

Recent efforts to rehabilitate coal as a clean fuel have been impressive.

NZ has massive coal reserves enough in pure energy terms to sustain our economic activity for centuries.

What we don't presently have is the technologies to efficiently and sustainably use it. We don't have carbon sequestration technology, the energy conversion rates are low, capital intensity is high, transport costs for local coal itself or the electricity derived from it will be high.

The negatives of using coal now are real issues.

If coal is the solution then a large power plant north of Auckland running on imported coal makes more economic sense in the short term than using domestic supplies.

If we have to import coal we might as well import gas.

Finally let me summarise my views.

Our current economic growth is not sustainable we are running short of energy.

NZ has no clear plan as to how it will manage energy supply for the next ten years or the next 50.

Renewables and efficiency are not a solution in this time frame.

Decisions need to be made to avoid a looming energy shortage.

The interplay of various energy options domestic exploration, coal, and import options will need to be determined soon.

It uncertain that domestic finds can fill the gap quick enough.

Our national journey to sustainability is underway but in is uncoordinated, for the medium term we are going to be reliant on fossil fuels.

The lack of a central energy policy and current hands off approach by government, may mean a rocky ride for the New Zealand economy

Market forces will always deliver a solution but as market signals of high price, increasing demand and limited supply drive future capital investment there may well be unpalatable experiences for the consumer and voter in the mean time.

Thank you.