

The LNG Option –Need for a deeper re-think urgently

With the euphoria of the recent election victory and the resultant sea change in many spheres of the government, the basic problems that Sri Lanka have been plagued with may have been relegated to the background. But these real and unresolved problems will haunt us forever, unless some rational and perhaps drastic remedial measures are taken. It is our fond hope that the newly elected president is well aware of these nagging problems and is conscious of the need for urgent action.

Of these many problems, the specter of power shortages and deteriorating balance of payments and the resultant depreciation of the Sri Lankan Rupee are upper most. The import bill for fuel imports is exceeding US \$ 4000 million annually and is bound to rise further. Under these circumstances the proposal for introducing Natural Gas (NG) as a further attractive energy option has been gaining ground over the past many years. Natural Gas, which at least is for the present has to be in the form of Liquefied Natural Gas (LNG) for Sri Lanka, is undoubtedly a cleaner fuel than coal and even diesel and petrol. With the undeniable reality of climate change and global warming, the reduced carbon emissions from NG at least at the point of usage is decidedly an added positive advantage. Also for the present the world market prices of NG are at historically low levels.

The Proposed Natural Gas Power Plant at Kerawalapitiya

But unfortunately as is our habit, Sri Lanka is putting the cart before the horse even in this occasion. While we have absolutely no clue as to from where and when the gas is coming from, tenders have been called for the construction of a 300 MW power plant to be operated using NG at Kerawalapitiya. It is reported that this tender stipulates that initially this plant is to be operated using diesel. A letter issued by the Secretary Ministry of Power in March 2017 instructs the CEB to inform the bidders that NG supplies will be available in three years. Well the three years have nearly elapsed. Further the tender was expected to be awarded based on the lowest feed in tariff offered by the tenderer when operating on NG. What is the feed in tariff to be paid during the initial period when operating on diesel? Who bears the undoubtedly added cost during the initial period? What happens if no NG is available at the end of the promised three year period? Will the plant continue to operate on diesel as the country would have become dependent on this source of electricity by then? There are many more fundamental questions that even a small boutique owner would have asked, let alone the engineers who formulated this project. Also the high powered evaluation committees do not seem to have posed these questions? If they did, no information has been divulged to the public who will anyway bear all the costs, while decisions have been made to award the tender, not surpassingly, not to the lowest bidder approved by the Cabinet of Ministers.

However, Sri Lanka is fortunate that this matter is under litigation and the erudite judiciary would hopefully view this project with the national interest uppermost. A further ray of hope has emerged as the newly appointed Minister for Power and Renewable Energy has called for a comprehensive report on this tender.

The degree of attempted manipulations at highest level of the government to push through this project, ostensibly to avoid a dire shortage of power in the year 2019, is hard to believe. More details of such

attempts have appeared in the popular press reported by eminent persons.

http://www.island.lk/index.php?page_cat=article-details&page=article-details&code_title=211114 , and <http://www.ft.lk/columns/50-day-Govt--in-7-days-attempts-to-award-biggest-value-contract-in-history/4-670408>

Why Natural Gas ?

This situation clearly underscores the fact that any flirtation with NG or LNG as an option, must first clearly establish the source and mode of supply of the required NG or LNG. Alternatively the tender for the construction of the power plant must include the responsibility of supply of the required fuel for the full life span of the power plant without being an undisclosed future burden on the Sri Lankan public. Any sharing of such facilities for any other use must also be clearly enunciated. These cannot be left to the discretion of a few officials or politicians who have hitherto attempted to claim that they only are competent to make such decisions. The history has demonstrated the fallacy of such claims by the marked lack of transparency and veracity of their claims of which the current issue is a glaring example.

Is Sri Lanka so desperate to have NG power plants now? With the lapse of many years since the idea was mooted and process commenced for the above mentioned tender, however flawed they are, the related circumstances have changed drastically. Many countries are now seriously contemplating the feasibility of by passing the NG option and moving directly from fossil fuels to renewable sources of energy. In spite of the “relative “advantages of NG over the other forms of fossil fuels, it is also a non-renewable fossil fuel and also under the watchful scrutiny (as a contributor to the global warming) with 23 times the potency of Carbon Dioxide as a GHG, particularly at the point of extraction and transport.

In this regard the decision of Alberta Province of Canada is worth of note.

Move from coal could skip natural gas straight to renewables | Calgary Herald

https://calgaryherald.com/opinion/columnists/opinion-transition-from-coal-could-skip-natural-gas-and-go-straight-to-renewables?fbclid=IwAR1f0s98J_bJ0VpD5qpnMgowqg-qWAmk_bC8ukvTlg5OG6elzvMWC-9PBg

Australia too has embarked on similar ventures already. It is important to note that both these countries possess large well developed domestic coal and Gas resources, whereas Sri Lanka has none.

Unfortunately Sri Lanka as usual wasted many years chasing after elusive “imported” solutions to meet its emerging energy demands. The energy experts and the relevant politicians and officials who either blindly followed the advice of the experts or had their own private agendas, ignored the rapidly developing renewable energy technologies particularly solar and wind. These are two resources Sri Lanka is abundantly endowed with and can meet all our energy needs. The usual excuse trotted out by the experts is that these two sources are intermittent and none firm. They chose to ignore the many technological advances made and already in commercial use, so that such excuses are no longer tenable and only displays their ignorance or incompetence. Also continual barriers were erected preventing the development of the dendro energy, which is certainly free from any of the so called deficiencies.

Accordingly, having painted ourselves to a corner, Sri Lanka may be compelled to depend on LNG for the present, to contribute the large chunks of generation capacity, that CEB insists are needed urgently, until it dawns upon them, that viable indigenous options are available as the Alberta authorities have discovered. But it must be stated most emphatically that such a choice must definitely be of a temporary nature, limited to the life time of the power plants selected to be operated using LNG.

A careful re-think is needed to clearly identify the essential and unavoidable power plants that should be targeted for use of LNG or NG and their lifetime. While a goal has been declared to achieve 100 % Renewable Energy target by year 2040 by the previous government, a more challenging but eminently achievable target of 80 % RE has been set by the current government. *"We also anticipate that hydro and renewable energy together would account for 80% of the overall energy mix by 2030".* (Vistas of Prosperity and Splendour - Page 58) Sri Lanka may opt to reclassify this goal as 100 % Indigenous Energy if we can successfully exploit the undoubted gas potential already proven in Mannar and the possibility of other locations as well. This would be an acceptable goal as other than the relatively cleaner natural gas, all our other indigenous energy resources are definitely renewable and none fossil fuel based. As very likely the market for such gas would be essentially the internal demand, there is the most important condition that, any intermediate imported supply contracts should in no way obstruct the use of this indigenous source when we are ready to do so. Thus any LNG fired power plants can have a life time limited by these targeted goals and thus none can be conceived to be implemented after year 2020. The two 300 MW LNG power plants at Kerawalapitiya are the obvious first choice, if the above concerns can adequately be addressed urgently, and if the impending power shortage, expressed by the CEB is to be believed.

Proposals to the Hon Minister

In this regard Hon Minister is humbly requested to ensure that the following aspects should be taken onto consideration before a final decision is made.

1. This plant must run on NG or LNG from the outset. The proposal to operate on diesel or oil for even 2 years will defeat the principle of least cost generation, insisted upon by the CEB in to be adhered to. Therefore can a viable means of supply of LNG be implemented in parallel while the plant is being installed? If not it is clearly not wise to proceed with the project. Having managed to provide uninterrupted electricity since 2016, when this project was initiated there are other means of survive until a viable supply source and logistics are developed to operate this plant preferably with our own Gas from Mannar.
2. The responsibility of supply of LNG to operate the power plant must be included as the responsibility of the successful bidder who should also accept the responsibility of establishing the necessary infra structure. All risks involved with a reliable and sustainable source of supply and price risks during the life time of the project should also remain with the bidder. The conversion to local gas supplies should also be an essential condition.
3. It is understood that the CEB will be calling for offers to install a further 300 MW LNG power plant also in Kerawalapitiya. Thus along with the existing 300 MW West Coast, a total of 900 MW of potential LNG power plants are available to be served in one locality . This would be an acceptable scale of market to ensure viability of an FSRU to be implemented close to Kerawalapitiya instead of the proposed unit in the Colombo harbor.

4. If any such gas supply logistics are to be expanded beyond the minimum required for the 900 MW of LNG plants, then the bidder must be given the freedom to negotiate with such other users. Naturally these could only be the oil and Naptha fired power plants in the Kelanitssa Complex. However the Sojitz power plant which commenced operations in 2005 is due to reach the end of its contract period in 2023 and the CEB owned power plants in the same premises also have a limited residual life. As such any plans for a firm gas transport logistics may not prove financially viable for a limited time operation. It must be reminded that Sri Lanka has a target to achieve 100 RE status by 2040. It has been suggested that these plants in the Kelanitissa complex may be operated on gas supplied by gas tankers as is practiced for the transport of LPG for which a well-established logistics are already in place.
5. Public comments have been called on an EIA for establishing a Floating Storage and Regasification Unit to be installed in the Colombo harbor. It is expected that a proper evaluation of such a proposal would take many years if all issues on public safety and viability of obtaining the way leaves etc, are properly addressed. Thus the timing by which this FSRU and the onshore infrastructure would be operational will very likely exceed the limited time available to be of use for the proposed 300 MW LNG power plant. As shown above the largest consumers of NG will be in Kerawalapitiya away from the highly populated Colombo. While a FSRU within the harbor may be less technically challenging, it is logical to plan for a FSRU or some other means of NG supply close to Kerawalapitiya. We have the experience of several decades of supply of LPG from an off shore buoy in Kerawalapitiya and any technical challenges cannot be insurmountable. The option of a land based terminal at Kerawalapitiya is certainly worth considering.
6. Also an interesting detail has been brought to the public attention that a proposal to set up a 1200 MW LNG power plant in stages of 300 MW in Hambantota has been proposed, in response to a public call for tender as far back as 2012. Apparently this project has received specific cabinet approval as far back as 2015 and the required lands too have been identified with all necessary approvals granted for the project. An attractive feed in tariff on US \$ 0.07 has been offered with the necessary gas unloading terminals and storage facilities included in the project. This is cheaper than the Rs 14/98 being considered for the Kerwalapitiya plant even at today's parity rates. For some unfathomable reason, as usually happens in Sri Lanka this project has been shoved under the carpet by the past government.

Such a plant in Hambantota has special merits which are not subject to the reservations expressed above as far as Sri Lanka's own power generation options are concerned. This is in consideration of the proposed industrial development zone proposed in association with the Hambantota harbor on one hand, and more importantly the international regulation due to come in to force by 2020, that all ships would need to be converted to operate on natural gas. Thus a gas terminal in Hambantota harbor would be a great economic opportunity which cannot be ignored

In my opinion the only NG projects that should be considered are the proposed two 300 MW plants at Kerawalapitiya with the conversion of the West Coast Power plant, also to be converted to gas, with a suitable LNG supply terminal associated with these three plants only at Kerawalapitiya. The long term viability of conversion of the Kelanitissa power plants needs careful consideration and may prove to be viable only based on truck transported gas from a terminal set up at Kerawalapitiya. The proposal for using an FSRU installed in the Colombo harbor requires deeper consideration which would further delay

the implementation of the proposed power plant at Kerawalapitiya. The grave problems and delays associated with not only the setting up of the FSRU but the laying of the gas pipe lines to Kerawalapitiya would definitely surpass the window of opportunity to set up a NG based power plants. Such plants may be of no use for Sri Lanka except to overcome the immediate shortage of power. In a very short time even Sri Lankan experts would agree that all our energy needs can be met from non-fossil based indigenous sources of energy. Thus the proposed FSRU and the related infra structure would end up being stranded assets. The Citizens of Sri Lanka should not be burdened with further problems in addition to the huge losses already imposed on them by the CEB.

On the other hand reviving the projects for Gas terminal and power plants in Hambantota definitely merits serious consideration due to its special benefits not limited to the internal requirements of Sri Lanka.

Conclusion

The circumstances which brought natural gas as NG or LNG to the lime light as an attractive source of energy has now changed. In general Sri Lanka has once more allowed an opportunity to pass. A limited opportunity still exists for introduction of LNG for power generation at Kerawalapitiya, if the current offers on the table are considered judiciously along with a dedicated source of supply and logistics. The proposal to set up an FSRU in the Colombo harbor is fraught with the possibility of ending up as a standard asset or being kept in contention by forcing sub-optimal energy options being imposed on the public, such as conversion of transport to use of LNG rather than the much more economical, efficient and environmentally friendly option of full electrification.

On the other hand the project already granted approval and held back for a gas terminal and power plant in Hambantota certainly deserves the attention of the current government for early implementation to prevent that opportunity also being lost to Sri Lanka.

This is an invitation for His Excellency the President and the Honorable Minister of Power and Energy to use their good sense in making the correct decisions for the benefit of Sri Lanka and not be deceived by the "Experts" both in Sri Lanka and from abroad. The world has demonstrated practically the way forward. Have we got the common sense to adopt what is beneficial for Sri Lanka which must obviously be the means to maximize the use of our own indigenous and renewable resources? May common sense prevail !

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