

Barbados Energy Transition in Disarray.

100%?, 70%?, 50%? Pick a Number.



The very idea of officials targeting 50%, or 70% renewable energy penetration for Barbados confirms the basic lack of understanding of what is involved in our national energy transformation aspirations.

For an isolated national electricity grid such as Barbados to operate at 50% fossil / 50%RE, would require that we essentially invest heavily in two completely different types of energy frameworks.

The whole reason for us moving to RE is to avoid the high cost of our current fossil network, and we know that the sustainable alternative approach will require very high initial capital investment. Energy transformation therefore is all about transitioning from fossil, and into alternative energy systems. Not setting targets which seek to retain both of them simultaneously in large measure.

It should be quite obvious then, that by having not one, but two expensive energy systems in place (to get 50 /50) we would be essentially doubling our currently too-high cost.

An excellent example of this folly is with the FTC currently approving the purchase battery storage capacity needed to support RE system stability, and simultaneously approving large sums for synchronous condensers that are needed to stabilize the old fossil fuel system (that is to be dumped). Customers of course will pay for all these costs, while a few key players profit handsomely, whatever the outcome.

How does this approach make national economic sense?

It has to be clear then that our key choice is between:

1. An efficient fossil based system that benefits from 12 - 20 % RE by exploiting the ability of fossil systems to tolerate some degree of intermittency
2. A fully RE system, with a maximum of 10% fossil systems designed for certain emergency backup purposes, or for those areas where RE is impractical or uneconomical.

Since 2019, as president of the Barbados Association of Professional Engineers (BAPE) and a member of the government's Electric Light & Power Advisory Committee (ELPAC) I have been involved in government's attempts to conceptualize and implement its ambitious Barbados National Energy Policy (BNEP 2019-2030).

The most shocking realization of this experience has been the level of misunderstanding of the complexities of this undertaking by our authorities, the lack of involvement of the relatively few local experts who actually do understand, and the arrogance with which we have proceeded despite the total lack of progress - and indeed, the chaos that has resulted.

The BNEP represents a brilliant national policy by our government - to go after 100% sustainability. It is also technically doable, and if achieved, would represent a breakthrough of global engineering significance.

However, this impressive national dream also represents the most complex, intricate and dangerous undertaking that we have conceived since independence, and it needs to be approached accordingly.

From the very outset of our involvement, BAPE has been calling for a professional National Energy Plan to be conceptualized, reviewed, and adopted, to guide this very complex transition. The Press is littered with such calls from myself and others. Perhaps the problem is that authorities do not even understand what having a Plan means.

A Plan is a detailed proposal, strategy, or set of actions designed to achieve a goal. The BNEP (policy) represents such complexity and intricacy, that each aspect of the four main types of plans used in business management (strategic, tactical, operational, and contingency plans) are critical to any hope of success.

To my knowledge, none of these exists, even seven years after the launch of the BNEP.

So we are essentially actively building a complex engineering undertaking, on an ad-hoc basis, with constantly changing decision making, coming from a wide variety of different and mostly conflicting interest groups, and characterized by trial and error approaches and ever-increasing costs to consumers.

This is why our rate hearings never end, why seemingly arbitrary increases are approved by the FTC, why BL&P says one thing, while the Minister says another, why the potential investors have yet another story to tell, and why consumers feel completely lost.

In such circumstances, there can only be one possible outcome for the hapless consumers, and that portends high costs and eventual energy chaos.

Minister Symmonds, in a previous stint at the Ministry of Energy, personally championed the expansion of the photo-voltaic sector by promoting attractive feed-in tariffs, accelerated installation of PV systems, and increased investments by the public in such systems. Government was warned that unless parallel energy storage systems were implemented, this approach would fail. But storage systems are expensive and complex, while PV is cheap and easy.

As president of BAPE, we even publicly labelled the PV approach as a PONZI scheme. One that was destined to collapse - as all such schemes do, and we published our concerns. The PV bubble bursted when the BL&P ended the connection of such intermittent energy supplies to the grid, having reached (indeed surpassed) the safe levels of variability that are naturally associated with fossil fuel systems.

This action (which was completely predictable) left investors and lending agencies with hundreds of millions of dollars in unproductive investment and impacted the credibility of the whole scheme.

It now appears that the knee jerk reaction (to provide a lifeline to the stranded PV investors) is yet another quick-fix 'solution' being pushed in the form of expensive, complex Battery Storage Systems (BSS). But how is this not just another PONZI plan? Only this time in the billions rather than millions of dollars. The question is, who will invest now to bail out the previous PV victims.

Battery technology is even more climate unfriendly than the old fossil fuels when it comes to the availability of the required rare earth resources such as cadmium, lithium etc.

Additionally, the global demand for such systems is now so high, that delivery times are often in years, and the quality of product is very difficult to manage.

Then the average life of even the best such BSS systems has been typically less than 12 years. Requiring a recurring reinvestment of \$billions billed to customers, along with the ongoing headache of disposing the scrapped batteries - a future major expense, rather than a valuable long-term asset like a pumped storage system.

Pumped storage systems for example, on the other hand have life spans of over 80 years, serve additional uses such as irrigation, water management, etc and utilize significant local inputs of labor and material during construction.

But such an approach requires additional planning, takes more time, and may not attract the levels of foreign exchange funding that seems to be so attractive to our government.

The established methodology of resolving such complex issues is now standard in the world of modern management.

1. A Strategic Plan that established a clear vision, mission, goals and specific objectives that are all SMART (Specific, Measurable, Achievable, Relevant, and Time-bound).
2. A Tactical Plan - similar to what an architect brings to a complex project to preemptively resolve conflicts, define boundaries, address public, private and political concerns, etc
3. An Operational Engineering Plan with specific details of how the transformation from fossil fuel structures to a Sustainable RE base will be executed, by whom, when, and how it will be done.
4. A Contingency plan - that examines and provides for backup options in the event of possible unforeseen circumstances, force majeure situations etc.

Additionally, even a casual attempt at such a planning approach would immediately highlight a number of critical fundamental issues that first need to be resolved in Barbados, if there is to be any chance of addressing our energy challenges along the lines outlined in the BNEP. Key issues such as ownership, regulation, customer requirements, and political interference would need to be transparently addressed as a very first step.

Of course we at CoopEnergy have also publicly highlighted many of these issues repeatedly. Both as intervenors with the FTC, and publicly. We have also proposed very viable solutions to these basic issues.

However, as a country, we appear to prefer the guidance of overseas consultants who are universally ignorant of the large portion of the local iceberg type obstacles that hide beneath the surface of the quagmire in which we are sailing, but who come with IDB funding, political strings, and recurring failures.

A prophet after all, is not without honor - except in his own country.

Trevor Browne