Island economies take first steps towards LNG

By Margaret Ryan

Posted 12 May 2014 10:27 GMT

Puerto Rico is importing containerised LNG from the US mainland. (Crowley)

Hawaii’s first containerised shipment of LNG has landed, and more than 9,000 km away Puerto Rico is set to get its first shipments in September. The islands will be a test of whether small-scale LNG can be supplied economically, with a utility leading in Hawaii and industry at the forefront in Puerto Rico.

High energy costs driven by small, isolated power grids and heavy dependence on petroleum fuels have been causing serious problems for island economies worldwide. Island governments and businesses have been seeking ways to lower costs, but large LNG tankers are usually too big for their needs.

The development of standardised cryogenic LNG containers allows LNG shipments to create ”a virtual pipeline,” said David Sweet, executive director of the World Alliance for Decentralized Energy (WADE).

Hawaii’s first LNG shipment – a cryogenic container holding nearly 27,000 litres – was bought by Hawaii Gas to supplement its normal supply of synthetic gas. For decades, syngas has been made from naphtha produced at a local oil refinery. Hawaii Gas began looking at alternatives in 2012 when the refinery was at risk of closing.
The LNG container, supplied by Clean Energy Fuels from its liquefaction plan in Boron, California, was offloaded at Hawaii Gas’s Oahu pier, where it was fed through a portable regasifier and into the utility’s Oahu distribution pipeline.

Hawaii Gas and Clean Energy Fuels have signed a multi-year supply contract for further LNG shipments. Alicia Moy, the utility’s president and chief executive, said in a statement the company is hoping to develop the capability to ship LNG in larger quantities.

Hawaiian Electric Co. (HECO), Oahu’s electric utility, is also considering LNG, for economic and environmental reasons. Hawaii depends on residual and diesel fuels to generate 75% of its electricity. The utility has issued a request for proposals for up to 0.8 mtpa of containerised LNG over 15 years. Bids are due this month. The utility said its forecast needs at its seven generating stations amount to about 7,000 cubic metres of LNG per day, but could be as much as double that amount.

HECO has expressed a preference for proposals that solve Hawaii’s logistical problems, including shipping LNG to harbours on each of the five islands and trucking containers between harbours and generating plants. Based on the proposals, the utility will decide whether switching any of its capacity to LNG will be economic.

**Expensive borrowing**

PREPA, Puerto Rico’s electric utility, gets 70% of its power from petroleum fuels and is facing a similar situation. It has converted a major generating plant to gas, using LNG shipped to the island’s only LNG terminal, which was built to serve an adjoining non-PREPA generator. PREPA has been seeking ways to get gas to three other large generating stations in the island’s industrial north.

However, Puerto Rico’s shrinking economy recently led to a downgrade of PREPA’s bonds to junk status by Moody’s Investors Service, making borrowing for capital investment more expensive.

Industries on the island, which have been hit hard by energy costs, have begun seeking their own alternatives. Carib Energy has signed a multi-year contract to supply containerised LNG directly to two Coca-Cola bottling plants, in Cayey and Cidra. Carib Energy President Greg Buffington told Interfax shipments will begin in September, and further industrial contracts are in negotiation.

Carib Energy, a subsidiary of Crowley Maritime Corp., is obtaining LNG from utility peak-shaving liquefaction plants in the southeastern United States, trucking the containers to the port of Jacksonville in Florida, and transporting the containers on Crowley’s vessels
to Puerto Rico. There, the containers will be trucked to the customer’s premises and the LNG fed through a portable regasifier.

Markets for smaller-scale LNG are being boosted by restrictions on shipping emission under the International Convention for the Prevention of Pollution from Ships, which is being phased in by the US. Standards are already in place for Oahu and ports on the mainland, and are being introduced for ports in Puerto Rico and the US Virgin Islands.

A recent study from the American Bureau of Shipping said many LNG and marine fuel providers are either building facilities or repurposing existing ones, such as peak-shavers, to service the increasing number of both inland and ocean-going vessels being converted.

Sweet said converting to LNG is proving the cheapest option for many vessel owners in the Caribbean, and the subject is drawing considerable interest at WADE’s conference on Caribbean energy in Puerto Rico this week.