



COMMITTEE ON ENERGY AND ENVIRONMENT

Senator Mike Gabbard, Chair
Senator Josh Green, Vice Chair

Tuesday, February 17, 2015 at 2:45 p.m.
Conference Room 225
State Capitol, 415 South Beretania Street



**Senate Bill 1323 Relating to Renewable Energy
Testimony in Opposition**

Chair Gabbard, Vice Chair Green and Members of the Committee, my name is Joseph Boivin, Jr. and I am testifying on behalf of Hawaii Gas.

SB1323 seeks to (1) Require the public utilities commission to direct public utilities that supply gas to the public to acquire biogas generated from non-fossil fuel sources; and (2) Establish renewable gas portfolio standards for public utilities that sell biogas in the State as follows:

- 1) 15 percent of its net gas sales by December 31, 2015;
- 2) 25 percent of its net gas sales by December 31, 2020;
- 3) 50 percent of its net gas sales by December 31, 2025; and
- 4) 100 percent of its net gas sales by December 31, 2030.

Hawaii Gas cannot in good faith, support SB1323 as written because there is no factual basis upon which to achieve such widespread use of RNG – the resource simply doesn't exist. Hawaii Gas strongly supports the development of renewable natural gas (RNG) standards, however in Hawaii, the suggested standards are premature and Hawaii Gas believes in order to do so, research in creating a new industry in Hawaii needs to be done, including providing appropriate state incentives to farmers, landowners, and others, equal in value to current renewable **electricity** generation subsidies.

Elsewhere, RNG costs 2.5 to 3.5 times more than the natural gas alternative. SoCalGas (Semptra) sells RNG from biogas produced at a waste water treatment plant while Fortis in Vancouver, Canada sells RNG from both landfills and waste water treatment plants. In both cases, RNG costs 2.5 to 3.5 times more than natural gas. This is not to say RNG will cost more than the fossil fuel alternatives in Hawaii, but it does underscore the importance of first determining the cost of producing RNG in Hawaii before charging ahead with renewable gas standards.

Hawaii Gas therefore opposes this bill for the following reasons:

- 1) The only known biogas resources present in Hawaii today are found at municipal waste water treatment plants and landfills. The majority of this biogas resides on Oahu and is controlled by the City and County of Honolulu. For approximately three years, Hawaii Gas has met with representatives from the City and County of Honolulu to explain how the biogas could be purchased by the gas utility in a fully regulated and transparent



model to generate a revenue stream that could be used to fund other projects for the County. We have not yet been successful. If Hawaii Gas could enter into a fuel supply contract with the City and County of Honolulu at a cost approved by the Hawaii Public Utilities Commission for all of its biogas it would result in approximately 10-15% renewable penetration on Oahu.

- 2) Developing additional sources of renewable gas beyond what is available today requires a prudent and reasonable approach to assess feedstock, energy yields, technologies, costs, resources required, risks and reliability.
- 3) No technology exists to create renewable propane at scale, which is the gas product required on all islands except Oahu.
- 4) In 2011-2014 Hawaii Gas completed a renewable natural gas pilot project at considerable as yet unrecoverable expense (\$3.5 Million) to discover that
 - a. Energy conversion efficiency was less extremely low (less than 10% converted to gas);
 - b. The excessive wastewater produced needed to be treated and disposed of; and
 - c. Cost and environmental issues proved inefficient, infeasible and impractical to continue.
- 5) It is important to recognize that the production of renewable natural gas is different than the production of renewable electricity. These differences are summarized below:

Differences	Renewable Electricity	Renewable gas
Energy source	<ul style="list-style-type: none"> • Solar • Wind • Geothermal 	<ul style="list-style-type: none"> • Biogas from municipal facilities • Organic waste • Energy crops
Additional Resources	<ul style="list-style-type: none"> • None required after installation except periodic maintenance 	<ul style="list-style-type: none"> • Land for energy crops • Labor for farming and collection and transport of organic waste • Water for energy crops
Technology	<ul style="list-style-type: none"> • Photovoltaic panels, windmills and steam turbines are readily available • Cost are well known and technology is proven 	<ul style="list-style-type: none"> • Technology must be designed for specific applications such as wastewater treatment plants, landfills and energy crops. • Each source of biogas can differ greatly in gas composition, which requires different purification



Differences	Renewable Electricity	Renewable gas
		technologies, and in daily gas production quantity.
Uses	<ul style="list-style-type: none"> Electricity production for onsite use, export to grid or utility scale production fed into grid. 	<ul style="list-style-type: none"> Requires economic assessment to determine best use of each type of biogas: Direct injection in utility distribution system; onsite electricity and waste heat; or compressed for ground transportation.
Incentives	<ul style="list-style-type: none"> State and federal incentives available 	<ul style="list-style-type: none"> None exist
Quantity Available	<ul style="list-style-type: none"> Energy production metrics well understood: that is to say, we know how much electricity a solar panel or windmill will produce. 	<ul style="list-style-type: none"> The yield per acre of energy crops must be assessed. The amount of organic waste available must be determined.
Cost	<ul style="list-style-type: none"> The installation of subsidized solar, wind and geothermal projects are well understood and they are competitive with fossil generated power. 	<ul style="list-style-type: none"> The costs associated with developing an entirely new source of gaseous energy in Hawaii are not fully understood at this time and may be substantially higher than the clean fossil fuels that are now used in Hawaii.
Competition	<ul style="list-style-type: none"> There many companies pursuing renewable solar, wind and geothermal projects in Hawaii. 	<ul style="list-style-type: none"> There are only two companies known to be pursuing renewable natural gas in Hawaii.
Homogeneity of Energy	<ul style="list-style-type: none"> Electricity is all the same whether it is produced by fossil fuels or renewable sources and can therefore be fed into the same electricity grid. 	<ul style="list-style-type: none"> Hawaii Gas utilizes two types of gas in its utility systems: synthetic natural gas and propane. While production and cleanup technologies for renewable natural gas are known but still require specialized engineering, the same is not true for renewable propane because there are no known commercial scale proven pathways for developing



Differences	Renewable Electricity	Renewable gas
		<p>cost-effective renewable propane.</p> <ul style="list-style-type: none"> Note also that renewable natural gas cannot be blended with propane because they are different gases.
<p>Burden of Technology Development</p>	<ul style="list-style-type: none"> Due to large number of competitors, proven technology and subsidies, there is no risk in the electric utility being burden with unrecoverable investments to achieve renewable portfolio standards. 	<ul style="list-style-type: none"> However, due to the lack of competition, lack of proven technologies and absence of incentives, Hawaii Gas has already spent more than \$3.5 million pursuing renewable gas energy and has not yet been able to successfully identify a scaleable renewable natural gas solution nor recover any of these costs.

Thank you for this opportunity to testify.