

## Freeing up natural gas by leveraging Government energy demand by transitioning to bioenergy

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Bioenergy Association has proposed to Government that it use leverage from its demand for energy to free up natural gas by converting from fossil fuels to bioenergy.

Government owned facilities include hospitals, schools, public amenities such as swimming pools and community buildings, administration buildings, prisons and higher education campuses. Currently the fuels used may be from renewable energy resources or from fossil fuels such as coal and natural gas.

Government owned facilities, including those of local government already use 680,968 GJ per annum of energy in the form of heat from biomass which is purchased under a wide range of types of contracts. Some contracts such as for natural gas is already purchased under a bulk purchasing arrangement. Most wood fuel is however purchased under individual contracts all separately negotiated. By combining the wood fuel demand from existing government owned facilities, with the quantities of fuel that would be required by new heat plant conversions, would provide economies of scale for bulk purchasing of wood fuel. This would not only provide local employment, utilise biomass slash, which is often a problem, and contribute to regional wellbeing, but would reduce total government facility energy costs.

The recent EECA (Energy efficiency and Conservation Authority) Regional Energy Transition Accelerator (RETA) investigations have provided a database of the opportunities for transitioning fossil fuelled heat plant to using renewable fuels.

( [www.eeca.govt.nz/co-funding-and-support/products/about-reta/](http://www.eeca.govt.nz/co-funding-and-support/products/about-reta/) )<sup>1</sup>

Analysis of the RETA database to identify government owned heat plant which could be transitioned from fossil to biomass fuels shows that 2 PJ/ annum of natural gas could be freed up for higher value market applications. Wood fuel could also replace 0.3 PJ/ annum of other fossil fuels used in government owned heat plant facilities.

In addition to freeing up natural gas and reducing emissions from other fossil fuels there are a number of facilities using electricity who would like to transition to cheaper wood fuel.

Over the last 15 years there has been a steady stream of government owned facilities which have already successfully transitioned from fossil fuels to bioenergy. These include schools, swimming pools and hospitals and universities. Bioenergy Association is proposing that Government should complete the transition of the facilities that are still using fossil fuels for heating. This would expand the use of wood fuel by 3.9 times.

Table 1 shows the number of government owned heat plant using natural gas or wood fuel. Some of these are known to be already committed to transitioning to electricity or wood fuel

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<sup>1</sup> Data collected as part of the RETA studies may be underestimating the number of government gas-fuelled heating facilities because it was difficult to identify many small applications.

but these assessments were generally undertaken before the current fuel cost and availability concerns became apparent. The proposed project will review any prior decisions to confirm if those decisions still apply. It is expected that by assessing opportunities under the collaborative approach of this project that some decisions on future fuel may change. Bulk fuel purchase opportunities may also change previous decisions.

**Table 1: Heat energy consumed by government owned facilities using natural gas and wood fuel**

	# using natural gas	# using wood fuel	Natural gas GJ pa	Wood energy GJ pa
Hospitals	24	4	980,681	451,189
Prisons	8		187,504	
Education	50	113	219,469	211,066
Military	2	2	68,746	17,643
Administration buildings	7		54,070	
Swimming pools	31	1	226,839	469
WWTP	5		88,579	
Event centres	17		131,184	
<b>TOTAL</b>			<b>1,957,071</b>	<b>680,968</b>

Assessment of the regional availability of wood fuel to meet demand shows that while there is considered to be adequate volumes of biomass potentially available in each region it is noted that in some regions there is a need for the existing wood fuel supply market to be augmented by strengthening of the wood fuel suppliers active in those regions. The project proposed to Government would use an aggregated government bulk purchasing approach to assist provide economies of scale and foster a collaboration of biomass suppliers to establish more active communication of demand for biomass from heat plant users to potential biomass suppliers. This will have an extensive flow-on positive effect to private sector buying and selling of wood fuel.

The size of the opportunity is confirmed by the current government bulk contract for gas supply to government facilities which covers about 700 connections and consumes about 1.8 petajoules (PJ) of gas yearly. Replacing this gas with wood fuel indicates a potential to create demand for over 200,000T of biomass fuel per year.

In the light of the impending possibility that natural gas may have to be imported as LNG this transition to wood energy provides an opportunity for Government to lead by example a “buy NZ-made” policy. This would have a favourable impact on the Balance of Payments etc. but more significantly would provide a demonstration of Government leadership to the private sector for domestic employment creation.

Table 1 shows that there are 141 sites on gas. But 45 sites use 1,609,000GJ, being 82% of the 1.95PJ, and the top 23 sites use 1,202,000GJ, being 62% of the total. The project will focus on these large gas using sites. The project will establish an investigations team to investigate these sites as corner stone conversions in each region.