Climate Tasmania response to the Tasmanian Draft Bioenergy Vision Paper

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Summary of Recommendations.

1. Introduction.

Climate Tasmania welcomes this opportunity to comment on the Tasmanian Government's draft bioenergy vision statement. The context for considering an expanded role for bioenergy in Tasmania must be the climate crisis: we agree that bioenergy may be able to play an important role in responding to the climate crisis, but it could also contribute to worsening the crisis. Our submission explores this theme in some detail. In particular we propose the key issues that need detailed examination before embarking on new bioenergy ventures.

In any consideration of the expansion of an industry it is important to have a good understanding of the existing industry as the starting point for the expansion. The discussion paper did not do that. Our largest current bioenergy source, firewood, received little discussion, and the use of wood pellets, a growing use of bioenergy in Tasmania, also received very little discussion. The Bioenergy Vision for Tasmania should acknowledge that the State's largest bioenergy source is responsible for significant adverse health impacts. Solutions to this serious problem are available but simply passing over the issues of firewood use and firewood supply in this Vision for the future seems irresponsible.

R1. The Bioenergy Vision should include existing bioenergy sources such as firewood and wood pellets and include them in Tasmania's overall framework for bioenergy.

2. Climate imperatives.

2.1 Urgency.

In 2018 the IPCC advised that in model pathways with no or limited overshoot of 1.5°C, global net anthropogenic CO_2 emissions decline by about 45% from 2010 levels by 2030 (40–60% interquartile range), reaching net zero around 2050 (2045–2055 interquartile range)….Limiting warming to 1.5°C implies reaching net zero CO_2 emissions globally around 2050 and concurrent deep reductions in emissions of non-CO_2 forcers, particularly methane (high confidence).….Such mitigation pathways are characterised by energy demand reductions, decarbonisation of electricity and other fuels, electrification of energy end use, deep reductions in agricultural emissions, and some form of carbon dioxide removal with carbon storage on land or sequestration in geological reservoirs. Low energy demand and low demand for land and GHG-intensive consumption goods facilitate limiting warming to as close as possible to 1.5°C.

The above summary of the IPCC's 2018 Special Report on 1.5 degrees C has two key messages:

- Rapid emissions reduction by 2030 are required if we are to stay below 1.5 degrees of warming; and
- Even with those rapid reductions we will still need to develop and deploy at scale technologies to remove carbon dioxide from the atmosphere.

The second point - the requirement to deploy technology that does not yet exist - reinforces the first point, which is that emissions reduction are extremely urgent.

2.2 Fossil fuels.

The climate crisis is with us because of our use of fossil fuels - coal, oil, and gas - since the beginning of the industrial revolution. Resolving the crisis and stabilising the climate requires us to phase out the use of fossil fuels. The discussion paper clearly accepts that reality, and we welcome that acceptance. A key measure of the value of any bioenergy project will be to what extent it contributes to the reduced use of fossil fuels.

2.3 Methane

The International Energy Agency's World Energy Outlook for 2021 said: "*Methane has contributed around 30% of the global rise in temperature today and the IPCC 6th Assessment Report highlights that rapid and sustained reductions in methane emissions are key to limit near-term warming and improve air quality.*" Methane is very relevant to bioenergy because of the potential for many natural biological processes to generate methane.

2.4 Importance of timescales.

Today, energy policy and regulation cannot be developed without reference to climate change. Governments are setting challenging targets for reducing fossil fuel use over the next 10 and 30 years (to 2030 and 2050). These relatively short timeframes have particular relevance to bioenergy. When bioenergy is burnt it releases carbon dioxide into the atmosphere in quantities roughly equivalent to burning coal for the same amount of heat. Depending on the source of the biomass it might take one hundred or more years for this carbon dioxide to be reabsorbed. We do not have this much time. For this reason, preferred bioenergy sources are wastes (or by-products) of forestry or agricultural operations that must be disposed of in some way. Some solid or liquid wastes may produce methane if released into the environment or buried, in which case an alternative bioenergy option for those wastes can be easy to justify if it is cost effective.

The global warming potential of methane is strongly time dependent. Molecule for molecule it is a far 'stronger' warming gas than carbon dioxide, but it breaks down faster than carbon dioxide in the atmosphere. One molecule of methane released now will cause about 85 times more warming than one molecule of CO_2 over the next 20 years, but if averaged over 100 years this drops to about 32 times more warming. Given the urgency of climate change the use of a global warming multiplier for methane of 85 is more appropriate.

R2. Evaluations of the potential emissions from a bioenergy project, including the change in emissions the project will bring, should use the GWP_{20} value for methane.

2.5 An ideal bioenergy project.

One of the key themes of this submission is that bioenergy projects will need to be evaluated on a case by case basis: they are not automatically "good" or "bad". As an example, an ideal bioenergy project would be one which:

- Draws its raw material inputs from existing fast rotation (less than approx 20 years) biomass crops;
- Is secondary to a primary use for that biomass which meets a key societal need while sequestering carbon (that is, the bioenergy project is based on a waste stream, such as agricultural or forestry waste);
- Produces a fuel or provides an energy service which replaces the use of a fossil fuel;
- Requires zero fossil fuel inputs; and
- Does not adversely impact biodiversity.

Such a project might be the production and use of wood pellets from the sawdust waste of a pine cross-laminated timber (CLT) plant, where the pine comes from redirected existing plantations, and where the pellets are transported in electric trucks to bulk pellet users who would otherwise burn natural gas. The CLT is used in housing, thus improving the quality of new houses while sequestering carbon in the buildings and reducing the amount of steel and concrete used in their construction.

3. Firewood

Tasmania (lutruwita) has an important history of firewood use stretching back many thousands of years. It has served the inhabitants well for cooking, heating and fuelling many industries. But now, as we enter a period of huge change in energy supply and use, we need to think carefully about the future roles of firewood. Does firewood have a role in slowing climate change? Can its adverse impacts on urban air quality and health be solved? Are there affordable heating alternatives? What can replace the localised employment of firewood cutters? This can become an emotional discussion because some people cannot imagine a comfortable winter without their wood heater while others suffer terribly from the high levels of fine particles in winter smoke. More efficient, very low emission wood heaters are commercially available, firewood can be grown quickly and efficiently in short-rotation managed forests with good climate change outcomes; what is needed is much better government regulation and enforcement to drive firewood into the new sustainable energy supply paradigm.

3.1 Environment and health issues.

Firewood is an ancient fuel but it is only in recent decades that we have been able to measure the impact of woodsmoke on health. This is because of significant advances in epidemiological studies of the health impact of exposure to fine particle pollution (PM2.5). Simultaneously our ability to accurately measure and record concentrations of fine particles in ambient air has advanced enormously. We now know that residential firewood use is causing significant adverse health impacts (the smoke was previously thought to merely be a nuisance).

Adverse health impacts may be observed when the 24-hour average fine particle concentration exceeds 25 micrograms per cubic metre (25µg/m^3). This limit is often exceeded in winter months in Tasmania's urban areas, especially in rural towns. By analysing the number of people in Tasmania exposed to elevated PM2.5 concentrations and comparing this to Australian and international studies of health risks it is estimated that about 65 people die prematurely each year in Tasmania

due to winter woodsmoke exposure (Borchers-Arriagada, 2020). This seems unacceptable because there is technology available to reduce this pollution to just one-tenth of current levels.

R3. Because of the wood smoke problem, bioenergy in Tasmania currently has adverse health impacts. The minimisation of these impacts must be addressed by the Tasmanian Government's bioenergy strategy.

3.2 Current Tasmanian use

Roughly 25% of households use firewood as their main fuel for winter heating and another 10% use it occasionally. This requires about 350,000 tonnes of air-dry firewood per year. When this is burnt in wood heaters or open fires it releases 630,000 tonnes of carbon dioxide (equivalent). The reason we talk of carbon dioxide equivalent is because firewood burnt in wood heaters results in some emissions of methane which must also be taken into account (1t of methane is equivalent to about 85t of CO_2). To put this number in perspective, in 2019 Tasmania's per capita emission of CO_{2e} was 15.5t per person (before subtracting land use absorption of CO_2) which does not include the 1.7t/capita of CO_{2e} released by firewood burning (which would add about 11% if included). The reason firewood use has not been included is because it is assumed to be a renewable energy supply. This assumption is hard to justify given the nature of firewood supply in Tasmania.

3.3 Firewood supply

Very little reliable information is available about the sources of firewood in Tasmania. We know some is collected illegally from reserves and national parks (not renewable), some is from small-scale land clearing (not renewable), some is sourced from bush blocks 'managed' for firewood supply and some is sourced from forestry operations. As discussed above, if we are talking about our emissions of carbon dioxide and methane in 2030 or 2050 it is illogical to consider emissions as zero if it takes 100 years to reabsorb them from the atmosphere. More research is needed to establish where Tasmanian firewood comes from and whether it is sustainable on a relevant timescale.

3.4 Social benefits and costs

The main social benefit associated with firewood is the heating it provides (firewood is the preferred heating fuel for many Tasmanians). Most wood heaters have maximum heat outputs of 15 to 20kW which allows heating of more than one room and also provides a pleasant mix of radiant and convective heat. Some low-income households collect their own firewood or have it supplied by relatives and friends, which provides very low-cost heating. In rural areas firewood may be purchased quite cheaply; however, in larger cities prices for delivered firewood are around $300/t which provides heating at roughly half the cost of a portable electric heater but 2½ times more expensive than a heat pump operating on the heating tariff.

The social cost, apart from the inconvenience, is the community health impact. Borchers-Arriagada et al. (2020) estimate health costs of $293 million per year attributed to residential firewood use in Tasmania (that is about $5,000 per wood heater per year).

Firewood supply also provides useful employment, especially for men without formal qualifications but with good bush skills. Based on surveys done several decades ago (Todd 1986) firewood cutters often work in two-man teams and can cut, split and deliver about 8 tonnes per day or around 2,000t per year. The same source suggests about one-third of households collect their own firewood. If 200,000t of firewood is purchased per year this suggests about 200 full-time jobs. The work is

seasonal and involves use of casual workers, so probably many more than this get some income from firewood cutting.

R4. Policy development with respect to firewood is hampered by the absence of current data on wood supply and its environmental impact. This needs to be improved.

4. Wood pellets.

4.1 Current Tasmanian market.

Tasmania's market for wood pellets as fuel is almost all for stand alone domestic pellet heaters, of which there are roughly 4,000 installed in Tasmania. A small number of these heaters heat water for hydronic heating systems, the remainder heat air for room heating. Virtually all of them are fuelled from pellets purchased in 15 kg plastic bags. There are three pellet heater retailers in Tasmania.

The largest wood pellet manufacturer (in terms of capacity) in Tasmania is located in Bell Bay and makes pellets under the EcoPellets Tasmania brand; the next largest manufacturer is Neville Smith Forest Products, who, in addition to their Mowbray pellet plant have a plant co-located with Oak Industries in Hobart. These two manufacturers are understood to use waste materials from on site or nearby wood processing operations as their feedstock. In addition to the Bell Bay, Mowbray and Hobart mills, Wood Pellets Tasmania have a mill located near Scottsdale. These mills have the potential capacity to supply a pellet fuel market several times the size of the current pellet fuel market in Tasmania.

4.2 Why wood pellets.

Wood pellets have the following advantages:

- They are small enough to be transported by auger into a burner at a controlled rate;
- Their heat output is predictable;
- They can be burned very cleanly in excess air - pellet heaters and boilers should not emit any visible smoke during normal operation; and
- Pellet heaters can be turned up and down (by regulating the pellet feed rate) and by simply switching off, and restarting when the heat is needed. Pellet heaters have ignition systems in which electrically heated air is used to start combustion.

Smoke from wood heaters mostly occurs when the heater is turned down - when there is wood burning in the firebox, but the full heat output from that wood is not required, so the supply of air is restricted to slow down combustion. Pellet heaters do not have this turn down problem: either the rate of supply of pellets is regulated to match the heat output required, or the fire is cycled off and on as needed. It is common for wood heater owners to try to "hold in" the fire overnight so the heater does not need to be relit in the morning; a pellet heater can simply be programmed to turn itself back on at a set time in the morning.

A campaign to promote pellet heaters instead of wood heaters would improve winter air quality and assist with ensuring the domestic heating fuel supply is from sustainable sources.

4.3 The bulk pellets opportunity.

While pellet heaters can help with winter air pollution problems, their role in replacing fossil fuels is currently very limited. There is an opportunity to replace gas - pipeline methane or bottled LPG. This is mostly a water heating opportunity or perhaps a small scale steam raising opportunity. Pellet "boilers" which heat water close to 100 °C are available in a range of capacities from 15kW to 200kW. Apart from the very smallest, these are intended to burn bulk pellets: pellets which are stored in bulk in a local fuel store adjacent to the boiler. The fuel store is replenished from a truck which pneumatically delivers pellets into the store. The arrangement is analogous to the use of LPG in which the customer's LPG "bullet" is refilled from a truck. This opportunity is particularly relevant to accommodation venues and food processing operations (such as dairies) where high temperature hot water is used for cleaning. Small pellet boilers which raise steam may also have a role in microbreweries, spirits distilleries and essential oils distilleries.

The use of bulk pellets in this way is unfortunately not available in Tasmania, because truck delivery of bulk pellets is not available. It seems that none of the existing pellet mills will invest in facilities to load trucks with bulk pellets until there is a market for such a service, but in the absence of such a service a market is hardly likely to develop. There is a clear role for the Tasmanian Government to take here to bridge this gap and ensure a bulk pellet market is developed in Tasmania. For example, the government could use bulk pellets to heat its buildings and write contracts for the purchase of bulk pellets that require the pellets to be delivered in electric trucks. New Zealand has a bulk pellet market, and wood pellets are used to heat schools and other government buildings in New Zealand.

R5. The Tasmanian government should develop the bulk wood pellets market by using bulk pellets to replace natural gas to heat government buildings and other facilities.

4.4 Issues needing to be addressed.

Pellet fuel quality issues have been a concern in Tasmania. There is a Tasmanian Pellet Heater Owners group on FaceBook with 605 members, and a review of posts over the last few months shows that fuel quality was a frequent topic of discussion. The main problem last year was to do with the length of the pellets: pellets that were too long were blocking feed augers, and pellets that were too short were providing more heat than normal. There are no Australian Standards specifying pellet fuel quality in such detail. However, a European standard, EN 14961-2 specifies pellet fuel standards in detail, and most of the heaters and boilers sold in Australia were designed to burn Class A1 pellets as specified in that standard. None of the Tasmanian pellet manufacturers are certified to EN 14961-2, but a major pellet manufacturer in New Zealand is certified to that standard.

R6. The Tasmanian Government should work with Standards Australia and the New Zealand Government to adopt EN 14961-2 as an Australian/New Zealand pellet fuel quality standard.

5. Other bioenergy opportunities.

5.1 Winners and losers in the energy transition.

As the energy transition has progressed, it is clear that there are already some winners and losers amongst the technologies vying to replace fossil fuels. The overall strategy of:

- generating electricity from renewables; and

- electrifying almost everything,

is gaining pace. In particular, the learning curve cost reductions for solar PV and wind mean that those technologies appear to have won. Thus, projects to generate electricity from burning solid biomass are unlikely to prove to be economically viable, unless the biomass is waste with very high disposal costs. Batteries appear to be heading in the same reducing cost direction, and it is thought that hydrogen electrolysers may also enjoy the same learning by doing experience. Liquid biofuels such as ethanol appear to have lost the technology race, at least as far as mass adoption as a fossil fuel substitute is concerned.

It is this perspective that has led to our focus on wood pellets, because renewable heat – particularly at temperatures above 70 °C – is an application with few other contenders, and even there the criteria discussed in section 6 below need to be applied. While hydrogen might be able to compete with wood pellets on cost grounds one day, that cannot be guaranteed. Biogas is another contender, but the methane issues must be properly managed. Climate Tasmania's submission to the Future Gas Strategy discusses this at some length, and focus on the methane leakage issues discussed in Grubert 2020.

5.2 Extend lives of otherwise stranded assets.

Climate Tasmania's Fact Sheet on stranded assets has some background on this subject (Climate Tasmania, 2021). It is the demand side assets (those that currently use fossil fuels) that are relevant here. Of particular concern are the large heavy vehicles and equipment that use diesel fuel. Heavy trucks, excavators, tractors, earth moving equipment and some boats and small ships can all use diesel and may be expected to stay in use for several decades. As the transition from fossil fuels progresses, these can all become stranded assets. In this situation, a diesel substitute liquid biofuel can be used as a stopgap designed to extend the useful life of the equipment in a low carbon manner. Fortunately, one is available, but not yet in Tasmania: renewable diesel, made by hydrogenating vegetable oils.

The disadvantage of renewable diesel is that, unless it is made only from waste vegetable oil, it competes with arable land for growing food. This is a further example of the "it depends" nature of almost all bioenergy: if the amount of land that would need to be dedicated to growing vegetable oils for renewable diesel is not disruptive, and if the renewable diesel is not used for new heavy equipment, but just for completing the expected life of existing equipment, then it could be an acceptable way to speed the phasing out of diesel, particularly if green hydrogen is used to hydrogenate the vegetable oils. In the longer term this class of equipment is likely to be battery electric or hydrogen fuel cell electric.

6. Criteria for bioenergy projects.

Climate Tasmania's position is that each proposed bioenergy project should be assessed on its merits. Our suggested criteria are:

1. The proposed project must reduce emissions compared with the situation that existed before the project was operational. Avoidance of methane emissions will often be a key part of that calculus, and the 20 year Global Warming Potential for methane is the appropriate value to use. The analysis needs to include supply chain changes brought about by the bioenergy project.
2. The proposed project should preferably rely on waste biomass from other operations. If purpose grown biomass is proposed for a bioenergy project, then the considerations

should include the shortness of the rotation period, the impact of the new crop on other agricultural activities, the extent of the inputs required to grow the crop (both fossil fuel and other inputs) and the biodiversity implications of growing the crop. In such cases, particular attention should be given to the certainty of the emissions reductions.

3. Projects should preferably be of a scale appropriate to regional deployment. Multiple smaller projects should thus be preferred to a single large scale central project.
4. The proposed project must be genuinely sustainable: not rely on continued non-renewable inputs, and must protect biodiversity and threatened species. A bioenergy add-on to use the waste of a non-sustainable, biodiversity and species threatening project does not make the starting project acceptable.

An example of a bioenergy project that might be acceptable under the second criterion is the growing of canola for renewable diesel. Such a project would add to the existing area of canola grown in a district, with the crop being locally crushed for oil and locally hydrogenated (using green hydrogen) to renewable diesel. As discussed in section 5(b), the renewable diesel would replace fossil diesel for tractors, heavy vehicles and heavy equipment that would otherwise become stranded assets. Approval of the project might be dependent on arrangements being in place to ensure the renewable diesel is used as intended, and that an eventual transition to electric or hydrogen fuel cell equipment is not impeded by the availability of the renewable diesel.

R7. The Tasmanian Government should adopt a set of criteria for the assessment of bioenergy project proposals.

7. Regulatory and governance.

7.1 Overview - need for industry regulation.

Climate Tasmania's view is that bioenergy needs to be regulated, and that regulation must include the existing firewood and wood pellets industries. Good regulation can assist with community acceptance - the "social licence", control safety and environmental risks, provide consumer protection, and improve the employment offered by the industry being regulated.

7.1.1 Maximise public acceptance.

Climate Tasmania believes that new bioenergy projects are likely to struggle to gain a social licence in Tasmania. Too many Tasmanians believe they were lied to about the development of the wood chip industry during its early development, and are fearful that bioenergy could be "the next wood chip industry". We do not claim that Tasmanians were lied to - the facts are irrelevant, as the issue is that many believe they were, and that belief is a substantial barrier to the acceptance of new bioenergy projects. The absence of proper regulation of firewood and wood heaters is another barrier: while many greatly appreciate their wood heaters, others are impacted by wood smoke about which very little is done. Tasmanians living in rural areas are also used to seeing utes loaded with split firewood driving away from areas of plantation forestry that are not, on the face of it, apparently intended to be firewood plantations.

All of these issues can be addressed by the proper regulation of all forms of bioenergy. Indeed, a regulatory approach which starts with firewood, wood heaters, wood pellets and pellet heaters would help with community acceptance of other forms of bioenergy, if the regulation is done properly.

7.1.2 Minimise harm

As discussed in section 3 of this submission, the use of bioenergy is already harming the health of Tasmanians, because of the woodsmoke problem. Eliminating wood heaters and doing nothing else is likely to exchange the wood smoke health risk with the health risk of living in cold and damp homes. Regulation is needed to minimise harms and maximise benefits. Because pellet fuel quality is currently unregulated, those pellet heater owners whose heaters failed to work because the wood pellets they purchased were too long and jammed up the pellet feed mechanism are likely to have been several hundred dollars out of pocket because of the cost of the service call needed to enable them to enjoy a warm house.

7.1.3 Minimise carbon emissions to atmosphere.

Bioenergy can assist with reducing emissions as part of our response to the climate emergency, but just because a project involves "bioenergy" there is no guarantee that emissions will be reduced. A system of regulation can properly scrutinise bioenergy project proposals to block those that will not reduce emissions compared with the counterfactual. Once a bioenergy project is allowed to go ahead, the regulatory process can ensure that the promises made by the project's proponents are kept, so the project really does reduce emissions.

7.1.4 Promote industry and employment

The greatest part of Tasmania's current bioenergy industry is the firewood industry - an unregulated industry with businesses that try to operate ethically and sustainably, and some that appear to not. There are no training courses for wood or pellet heater technicians, for example, and thus no formal recognition of the skills individuals acquire. It is hard for an industry like this to attract the best and brightest of young people.

R8. The Tasmanian Government should prepare and implement a regulatory plan for bioenergy to assist the industry to obtain and maintain a social licence, and to ensure that emissions reduction, biodiversity, and other environmental objectives are achieved.

7.2 What needs to be regulated?

7.2.1 Residential Wood Heating.

Tasmania regulates the performance of wood heaters sold in the State through the *Environmental Management and Pollution Control (Distributed Atmospheric Emissions) Regulations 2007* under the *Environmental Management and Pollution Control Act 1994*. The Regulations call up Australian and New Zealand Standards: AS/NZS 4012:2014 Domestic solid fuel burning appliances—Method for determination of power output and efficiency and AS/NZS 4013:2014 *Domestic solid fuel burning appliances—Method for determination of flue gas emission.*

In theory these regulations and Standards should provide clean burning wood heaters and a clean and healthy air quality for all residents. They should also provide a mechanism for local health inspectors to deal with some very bad localised air pollution problems. In practice none of these goals are achieved. The Standards, which were intended to push manufacturers to developing cleaner heater models instead set a poor minimum performance level that manufacturers could hide behind. In addition, the Standards are not enforced. The only audit carried out (way back in 2003) showed that more than half of 47 popular models of wood heater did not comply. We do not know whether current models perform any better. Further, 12 models went through full retesting and 7

out of 12 did not comply, on average emitting 4 times as much smoke as when originally tested. One model emitted almost 10 times as much smoke. The reason was the retail heater model was different to the prototype that was tested for certification purposes. It is very surprising that no follow up audits have been carried out in almost 20 years, more so because the health impacts and costs of poor winter air quality have consistently been shown to be very high. It is also surprising that the Standard methods used to test the heaters have not been improved to better represent real world heater operation.

In Christchurch NZ, which also had a severe wood smoke problem, new regulations were developed to drive the industry to ultra-low emission wood burners. This has proved very successful and is a useful model for how Tasmania might achieve real improvements in winter air quality and improved health outcomes, while still having firewood in the energy mix (Environment Canterbury 2022). In contrast to Christchurch, here in Tasmania we still have many households having to put up with smoke from neighbouring properties contributing to poor health and severe nuisance.

R9. Tasmania needs new, effective regulations for the control of wood smoke. They should not rely on the existing Standards. The new regulations must be enforced and the measured air quality must be shown to improve.

7.2.2 Enforcement of forest and reserve regulations.

Wood-hooking (illegal firewood removal from private and public land) needs to be eliminated through enforcement of existing regulations. It appears the practice is quite widespread (The Leader 8 May 2020) affecting National Parks, Reserves, private forests and public forests.

R10. There is needs to be a system for assuring that the sources of firewood are known.

7.3 Some possible models.

7.3.1 Biomass supply.

Regulations could define a sustainable biomass supply standard which could be applied to all biomass inputs to bioenergy. Solid biomass - firewood and wood pellets - should be the first category. This could be done initially as a voluntary standard. The government could define a "Sustainably Sourced" standard and a suitable trademarked certification mark. Firewood merchants and wood pellet manufacturers could apply for the certification; if successful they could use the trademark on packaging, in advertising and in signage. The regulatory body would have an inspection, monitoring and auditing regime to give on-going assurance of compliance, and the government could advertise the peace of mind accompanying purchasing certified firewood and pellets. The government should require certified firewood and pellets when the government purchases those fuels. Once the system is up and running and an initial number of suppliers hold the certification, the government should announce a date - perhaps in 5 years time - after which it would be illegal to sell non-certified firewood and wood pellets.

While the criteria would be different, this system of regulation could be applied to liquid and gaseous biofuels - and perhaps extended to green hydrogen.

7.3.2 Biofuel quality.

The scheme proposed for sustainably supplied biomass for biofuels could have a fuel quality arm added to it. Having a second, certified quality standard trademark would enable existing suppliers to

build up their compliance efforts one step at a time. The Tasmanian government should press for a new Australian/New Zealand standard for pellet fuels that simply adopts EN 14961-2. It is quite possible that the New Zealand government would be supportive of working with the Tasmanian government on some of these issues. Again, this regulatory scheme could start with firewood and wood pellets, and could be initially a voluntary system.

7.3.3 Bioenergy project assessment and approval.

As discussed in sections 2, 6 and 7.1, Climate Tasmania believes that bioenergy project proposals should be assessed prior to approval against the criteria discussed in section 6. Once approved and operational, there needs to be follow up to ensure that the project proponents have done what they promised to do. Where possible, it should be a condition of a project's approval that its operator joins the biomass supply and biofuel quality schemes from the outset. Climate Tasmania has elsewhere recommended the formation of an independent statutory authority in the context of the Climate Change (State Action) Act. This body could be the organisation charged with doing the project assessments and project follow up work.

8. The bioenergy vision statement.

The one sentence vision statement on page 3 of the Discussion Paper conveys little or no ambition for the quality of the bioenergy industry the government seeks to encourage. It does not suggest the presence of criteria for the approval of projects, mechanisms to ensure promised outcomes are delivered, and that potential environmental harms have indeed been avoided. It does not offer any guarantees that emissions will be reduced or that biodiversity will be protected. The statement falls short of Tasmania's aspiration to have a "clean, green" image and to be a climate leader.

R11. The Bioenergy Vision Statement needs to make it clear that not just any bioenergy industry is being encouraged: the bioenergy industry that Tasmania wants reduces emissions, protects biodiversity and meets a full range of social and environmental objectives in addition to its economic and energy security objectives.

9. Answers to the questions in the Discussion paper.

a. What changes, if any, would you suggest to the draft Bioenergy Vision?

Firewood, Tasmania's largest bioenergy supply, requires a more detailed discussion. The air pollution and health issues are serious. Better Regulations could see ultra-low emission wood heaters replace existing models - the Canterbury, NZ region success in reducing wood-smoke provides a good example for Tasmania.

Short rotation firewood plantations and elimination of illegal firewood collection would enhance sustainable firewood use in Tasmania.

b. *What are the key roles for the Tasmanian government to support bioenergy?*

Good regulation, annual reporting, capacity to enforce regulations. The Tasmanian Government should kickstart a bulk wood pellet industry by installing pellet boilers to heat government buildings and tendering out the bulk pellet supply for the heating systems. The tenders should specify compliance with EN 14961-2 (the warranties on the pellet boilers will almost certainly require this anyway) and should require the pellet supply chain to use electric trucks.

c. What are the key roles for households, industry, and other levels of government to support bioenergy?
Households are already supporting bioenergy through wood heater use, but more use of pellets should be encouraged to reduce air pollution. Agriculture, small rural industry is well placed to increase bioenergy use. Government might assist with organisation of information/workshop sessions. Generally speaking, many in rural areas are well informed on bioenergy opportunities.

d. What do you think could be done to appropriately accelerate the uptake of bioenergy in Tasmania?
This is only desirable if new projects meet a well designed set of criteria covering ecological impact, climate change impact, and are economic.

e. *What are the key opportunities for bioenergy in Tasmania? What can be done to realise these opportunities?*
Development of a bioenergy-from-waste inventory and connecting this to potential adopters. Two opportunities discussed elsewhere in this submission are the use of bulk wood pellets (section 4.3) and renewable diesel (section 5.2).

f. What are the key challenges for bioenergy in Tasmania? What solutions do you see for these challenges?
There is a justified fear that bioenergy might drive greater clear felling of old growth forests. Air quality issues both from residential firewood use and industrial use (memories of the old McCashney and teepee woodwaste burners smoking out country towns are still fresh in older country people). Even with good regulation and enforcement it might take some time to sway the general population.

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