



22 July 2009

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### **SUBMISSION TO RENEWABLE ENERGY (ELECTRICITY) AMENDMENT BILL 2009 AND A RELATED BILL**

Australian Forest Growers (AFG) is the national association representing around 1200 private forest growers from 22 regional branches across Australia's forest growing regions. AFG's members include farm plantation growers, private native forest managers and private commercial plantation companies. Since 1969, AFG has been advocating responsible establishment and management of forests on private land, which provide the multiple outcomes that the community increasingly demands. The growing of commercial plantations and active management of private native forests by our members has been delivering improved landscape health outcomes for decades, as well as complementing existing productive agricultural land use practises.

Australian Forest Growers recognises the Australian Government's commitment to addressing climate change through promotion of renewable energy based industry and through the establishment of the Carbon Pollution Reduction Scheme (CPRS) to facilitate trading in emission permits. These developments present challenges as well as unique opportunities for private forest growers in Australia.

AFG supports the Rudd Government's announcement of a Mandatory Renewable Energy Target of 20%. Implementation of this policy will present a tremendous opportunity to better utilise Australia's forest production potential towards renewable energy goals. Forest industries have a key role in Australia's future if renewable energy is to underpin our needs. Using wood fibre for energy production would have the added benefit of replacing the use of fossil fuels domestically, reducing Australia's exposure to world oil prices and dependence on imported oil. The forest growing sector has the potential to make a significant contribution towards the expansion of renewable energy production in Australia as it represents feedstock suppliers for biomass-to-electricity (bioenergy) and biomass-to-liquid fuel (biofuel) production systems.

In order for the sector to fully engage with the vision for renewable energy, some key issues need to be addressed:

- Expansion of the RET to include heat generation and liquid fuel production
- Acceptance of all forest biomass from legally managed forests as eligible bioenergy and biofuel feedstock

- Significant investment in bioenergy production systems and coordinated policies for promoting use of biofuels and expansion of the biofuel industry.
- Adjustment of the excise on biofuels to ensure it is always less than the excise on fossil fuels.

The rapid development of biomass-based energy and fuel production systems should be a key focus of renewable energy policy in Australia as our response to climate change gains momentum. The use of wood for power generation is already widely used in Australia and in some countries forms a major component of electricity supply. The last 20 years of technology development has seen dramatic improvements in energy harnessing and efficiency, whilst delivering significant reductions in emissions.

At present there is a substantial, but largely untapped, resource of biomass residue that accumulates from forest and processor operations and could be utilised for the production of biomass based electricity (bioenergy) and liquid fuel (biofuel). Forest industry residue capture for biomass energy production alone could be significantly increased to supplement the use of fossil biomass. Processor surpluses such as sawdust and wood scraps are considered to be a clean, easily available resource for future biomass production. Forest operation surpluses also include underutilised logging residue, non-commercial thinning and silvicultural residues.

Seeking commercial deep-rooted crops for marginal lands is of critical importance for a range of environmental reasons, as well as for farm income diversification. The biofuel production industry is a potential new industry that could utilise the resource grown from woody perennial crops and the mandatory renewable energy target should be broadened to include biofuels. The range of deep-rooted crops suitable for biofuel production is enormous and could include many native tree and shrub species. Farmers in medium to low rainfall zones are in desperate need of commercial forestry solutions. The placement of biomass to liquids processors, supplied by crop resource in several agricultural areas, could reinvigorate rural economies and deliver broad environment benefits (such as salinity abatement), whilst also supplying liquid transport fuel to the market and participating growers. If markets became more established, primary producers in the future may also have enough incentive to establish commercial crops exclusively for bio-energy production, or in multiple use application, such as proposed for the integrated product industry in both Western Australia and New South Wales.

### **FUEL AND ELECTRICITY EQUALLY IMPORTANT**

AFG notes that the RET is presently restricted to promoting use of renewable energy by electricity users and excludes other significant users of fossil fuel, such as the transport sector. AFG considers that promoting renewable energy use across all sectors of industry is equally important in abating climate change. AFG urges that the RET scheme should be broadened to include liquid fuels and heat generation. The present exclusion of heat generation (for both industrial and domestic use) from the RET scheme has prevented recognition of the significant use of waste wood both in mills and processing plants. This affects forest growers, who currently have limited access to markets for waste wood that is a by-product of necessary forest tending.

## **ALL FOREST SOURCES SHOULD BE ELIGIBLE: THE ‘HIGH-VALUE’ PROCESS**

If biofuel and bioenergy are to form a more significant part of Australia’s electricity and fuel supply, reliable feedstocks are essential. At present there is a substantial, but largely untapped resource of biomass residue that accumulates from forest and processor operations. This wood currently goes to waste. Forest industry residue capture for biomass energy production alone could be significantly increased to supplement the use of fossil biomass. Processor surpluses such as sawdust and wood scraps are considered to be a clean, easily available resource for future biomass production. Forest operation surpluses also include underutilised logging residue, non-commercial thinning and silvicultural residues.

All forest biomass that is legally sourced from managed forests should be eligible as a renewable energy source under RET. This should include forests under Regional Forest Agreements between Commonwealth and State governments, forests managed according to state based Codes of Practice for forestry; or forests managed in accordance with vegetation management legislation. The ‘high-value’ test for native forests, where the total financial value of the high-value processes must be higher than the financial value of the other (lower value) products of harvesting, means that lower quality native forests are excluded from the MRET. Degraded native forests or woodlands seem an ideal source of timber for biofuel and bioenergy, as there is now scientifically proven data that an actively managed forest is healthier than one locked up and left.

Tree crops grown predominantly for harvest as bioenergy feedstock offer a vast potential resource. The primary reason is that such tree crops are likely to be grown well outside the high rainfall range of conventional commercial timber plantations. It is the much larger lower rainfall regions, where agriculture is or has become marginal, that land repair with very large-scale revegetation has been identified as imperative, but almost impossibly expensive for public and private investment alike. Management of this planted and regenerated woody vegetation as a biofuel feedstock would provide a commercial return to at least partially fund the revegetation projects. The range of possible native species for this purpose is substantial. Slow-growing, ‘poor form’ natural forests and woodlands in low rainfall zones could also become commercially viable (and more biologically vibrant) forests if managed long-term for a biomass-to-energy market. AFG discussions with rangeland pastoralists suggest bioenergy solutions to the tragic ‘woody weeds’ invasion of once productive pastoral country. Regional biofuel production based on these forests and tree crops could reinvigorate rural economies as well as deliver the diverse intended environmental benefits.

The high-value test seems inconsistent with the Government’s desire to increase energy sourced from renewable sources. The high-value test means that very few native forests, despite being managed sustainably, could not qualify to partake in the RET because they don’t pass the high-value test. If the Government was serious about energy from renewable sources, the only test that a forest should have to pass in order to partake in the RET is to be sustainably managed.

## **RAPID EXPANSION NECESSARY**

The rapid development of biomass-based industries should be a key focus of renewable energy policy in Australia. Funding in research, development and extension is currently skewed towards developing 'clean coal' technologies.

Research into bioenergy and biofuels is well advanced, and has established the potential for new industries. However, large scale commercial biomass-to-energy production (either for electricity or liquid fuel) is nonexistent in Australia. Continued research, development and extension as well as industry 'kick-start' funds in these areas should be a greater priority for the Government.

There are already some electricity generators in Australia that utilise wood waste for the production of electricity and heating within internal production systems. Macquarie Energy purchases wood waste from plantation sawmills for co-generation in existing coal-fired power plants in the Hunter Valley. Delta Electricity is also working on biomass production using sugar mill in northern NSW. There are also Australian examples where wood waste is currently used for firing boilers and the like.

Densified biomass fuel (DBF) pellets, or wood pellets, are produced from non-commercial and harvest residues which are sourced from sustainably managed timber plantations. These pellets are then used as a source of renewable energy. This source of fuel, which is in high demand in Europe, America, and Japan could be a source of sustainable fuel in Australia. Plantation Energy Australia, an exporter of DBF pellets has signed a three-year 70million dollar deal with a Belgium-based power company. The technology behind DBF pellets is consistent with the Australian Governments objectives of the Renewable Energy Bill; wood pellets use a renewable, sustainably produced waste product for energy, and yet the promotion and adoption of the industry by the Government is absent. DBF pellets can be utilised either in a specialised pellet power plant or alongside other fossil fuels to co-fire power plants. As such, DBF pellets could act as an ideal transition material; instead of exporting this technology, Australia could utilise it to reduce its emissions and reliance on fossil fuels.

Woody biomass can produce at least three renewable liquid transport fuels – synthetic diesel, methanol and ethanol. Ethanol-from-lignocellulosics (EXL) technology is the least well known technology, but holds great promise because the feedstock (woody biomass) is widely abundant and mostly surplus, being inevitably yielded in the growth and/or manufacture of the primary target food or fibre product.

Development and commercialisation of efficient and viable biomass-based fuel production – especially 'second generation' ethanol (EXL) – has, in the past three years, become the focus of very large-scale and high-profile public and private research and development funding on all other continents. Australian governments have only recently begun to consider offering serious support for EXL R&D and commercialisation, despite the leadership of Australian research organisations in this field.

In January 2008, an Australian-designed pilot plant commenced its first trials of a world-leading suite of innovative EXL technologies at the Harwood sugar mill in

northern NSW. That pilot plant is being run by Ethanol Technologies Ltd, a company jointly owned by forestry and sugar cane interests.

### **REPLACEMENT OF STATE SCHEMES**

It is important that the significant regulatory burden already experienced by forest growers is not added to by duplicate state and national RET schemes. An expanded national RET scheme should replace state based schemes to ensure that the RET is nationally consistent.

A coordinated national strategy to increase biomass-based renewable energy production needs to be developed, to ensure that policy instruments such as the RET scheme and the CPRS are complementary. AFG supports the National Partnership Agreement on Energy Efficiency, and its goal to 'deliver a nationally-consistent and cooperative approach to energy efficiency'. However, AFG seeks that the National Partnership Agreement on Energy Efficiency should be broadened to include the adoption and promotion of biomass-based renewable energy. Accelerating energy efficiency is one tool in combating climate change, and biomass-based renewable energy is another. To couple the promotion of energy efficiency with the promotion of biomass-based renewable energy would certainly strengthen Australia's ability to reduce its greenhouse gas emissions.

### **CONCLUSION**

The additional market for wood that vibrant bioenergy and biofuel production industries would create may provide a crucial financial incentive to make small scale growers more financially viable. Many of AFG's members are farm foresters and small scale forest managers who struggle to make their production systems financial, as tree plantings in the farm setting are often established with multiple benefits in mind.

Thank you for the opportunity to make a submission. Please do not hesitate to contact the undersigned on 6162 9000 should you wish to discuss any of the issues raised.

Yours sincerely,



Warwick Ragg  
**Chief Executive**

**ATTACHMENT A - AFG Policy Statement No. 12  
Energy**

**ATTACHMENT B - AFG Policy Statement No. 13  
Fossil Fuel Replacement**

# ATTACHMENT A – AFG POLICY STATEMENT No. 12

## ENERGY

### *Australian Forest Growers:*

- *seeks the commitment of all Australian governments to facilitate and accelerate the responsible use of forest biomass to produce solid, liquid and gaseous fuels; and*
- *advocates that the Australian Government's fuel excise reform initiative, announced in the 2004 Energy White Paper, be accelerated such that the full excise credit for all business use of fuel off-road is introduced immediately rather than 1 July 2012 as currently proposed.*

### **Background**

The rapid development of biomass-based energy and fuel production systems should be a key focus of renewable energy policy in Australia as our response to climate change policy in Australia as our response to climate change gains momentum. The use of wood for power generation is already widely used in Australia and in some countries forms a major component of electricity supply. The last 20 years of technology development has seen dramatic improvements in energy harnessing and efficiency, whilst delivering significant reductions in emissions. Modern wood and charcoal-fired power plants emit almost pure carbon dioxide throughout operation, whilst coal-fired power plants emit a combination of carbon dioxide, carbon monoxide, sulphur dioxide and nitrogen oxides. Wood and charcoal as biofuels also have an important connection with relative greenhouse gas accumulation in the atmosphere. For example, when wood and charcoal is burned while carbon dioxide is released into the atmosphere, the next forest growing cycle absorbs carbon dioxide. As wood and charcoal-fired power generation can replace or coexist with coal-fired generation, the net effect is a reduction in greenhouse gas emissions.

At present there is a substantial, but largely untapped resource of biomass residue that accumulates from forest and processor operations and could be utilised for the production of biomass based electricity (bioenergy) and liquid fuel (biofuel). Forest industry residue capture for biomass energy production alone could be significantly increased to supplement the use of fossil biomass. Processor surpluses such as sawdust and wood scraps are considered to be a clean, easily available resource for future biomass production. Forest operation surpluses also include underutilised logging residue, non-commercial thinnings and silvicultural residues.

Seeking commercial deep-rooted crops for marginal lands is of critical importance for a range of environmental reasons, as well as for farm income diversification. The biofuel production industry is a potential new industry that could utilise the resource grown from woody perennial crops. The range of deep-rooted crops suitable for biofuel production is enormous and could include many native tree and shrub species. Farmers in medium to low rainfall zones are in desperate need of commercial forestry solutions. The placement of biomass to liquids processors, supplied by crop resource in several agricultural areas, could reinvigorate rural economies and deliver broad environment benefits (such as salinity abatement), whilst also supplying liquid transport fuel to the market and participating growers. If markets became more established, primary producers in the future may also have enough incentive to

establish commercial crops exclusively for bio-energy production, or in multiple use application, such as proposed for the integrated product industry in both Western Australia and New South Wales.

### **Discussion**

Increases in wood utilisation in forest operations, as a result of commercially viable biomass-to-energy market options, will result in enhanced economic return to forest owners and managers. This in turn would lead to a greater investment into the natural integrity of the forest estate or the environmental needs of the property as a whole. Real government commitment into biofuel development in Australia will not only deliver economic returns to forest growers, but will also contribute to stabilising rural communities, whilst delivering a broad range of environmental benefits.

AFG acknowledges the Australian Government's intention for the Carbon Pollution Reduction Scheme (CPRS) to provide an incentive for renewable energy production, as signalled in the *CPRS Green Paper*, released in July 2008. The benefit for biomass based electricity (bioenergy) and liquid fuels (biofuel) from the CPRS is that other forms of energy will need to bear the burden of their carbon cost. As a result the price of non-renewable electricity, in general, will rise, increasing the viability of bioenergy projects.

The Government's earlier Energy White Paper, released in 2004, discusses reform to the fuel excise system, which may yield economic benefits for components of the forestry and forest products industries. This reform is to be phased in between July 2006 and July 2015, and includes excise exemptions to alternative biofuels used in road transport, as well as detailing a road 'user pays' system for heavy vehicles. An opportunity exists here for forest growers to participate in biomass fuel production. Fuel excise reforms also include full exemptions to the business use of fuel in off-road applications, such as energy production in wood processing mills, to be introduced from July 2012. AFG supports these fuel excise reforms and urges the government to accelerate the full excise credit of all business use of fuel for off-road purposes.

For a long time now, the Australian Government has supported the development of a pilot ethanol-from-lignocellulosics plant, to test the commercial viability of ethanol production from underutilised resources such as silvicultural surplus, processing residues, crop residues and purpose grown crops. Disappointingly, the development of this pilot plant has been stalled for some years.

AFG considers the pilot ethanol plant to be of critical importance for farmers, foresters and the economy, and urges the Government to recommence developments in this pilot transport fuel production system.

Other transport fuel production systems also deserve serious government investigation and support, one example being the potential of biomass gasification and catalytic production of synthetic diesel fuel. Large scale commercial biomass-to-liquid fuel production systems are currently non-existent in Australia. Continued R&D as well as industry 'kick-start' funds in these areas should be a greater priority for the Government. Carbon stored in wood products should be included in the CPRS from Scheme commencement in 2010.

**Preferred Outcomes**

- The Carbon Pollution Reduction Scheme attributes zero emissions to bioenergy and biofuel production as outlined in the Australian Government's *CPRS Green Paper*.
- The Renewable Energy Target recognises all legally sourced wood products as eligible sources to supply biomass-based electricity generators and is expanded to include fuel.
- Government support for the development of regionally based biofuel production plants to utilise resource from forest and wood processor residues and crop residues, as well as from short rotation biomass crops.
- Federal Government commitment to the development of a pilot biomass to liquids plant in Australia.
- Full excise credit for all business use of fuel off-road, immediately rather than from 1 July 2012, as currently proposed.
- The Climate Change Action Fund is used to finance support for developing bioenergy and biofuel production systems on a larger scale in Australia, and for supporting the reforestation efforts of small scale forest growers.



## ATTACHMENT B – AFG POLICY STATEMENT No. 13

### FOSSIL FUEL REPLACEMENT

*Australian Forest Growers seeks that any emissions trading system recognises the value of fossil fuel replacement by use of tree crops for woody biomass production, harvested wood, forest and sawmill residues and silvicultural surpluses from both plantations and native forests.*

#### Background

Wood is a direct substitute for many emissions intensive products. In the construction of buildings, competitors to structural wood products such as steel, aluminium and concrete all have a significant emissions profile whereas the production of wood is carbon-neutral (Table 1). In addition, the carbon stored in wood products is retained while the product is in use, and for many years after being delivered to landfill.

Building material	Greenhouse gas emissions per tonne material (tCO <sub>2</sub> e/tonne)
Aluminium	22.4
Steel (blast furnace production)	2.6
Steel (scrap-based electric arc furnace production)	1.1
Cement	0.8
Hardwood (rough sawn kiln dried)	0.2
Softwood (rough sawn kiln dried)	0.2
MDF (Medium Density Fibreboard)	0.7
Particle board	1.0

Table 1. Greenhouse gas emissions – profile of wood and key competitors.  
Source: George (2008), p.3.

In electricity generation and the production of transport fuels, woody biomass presents a carbon-neutral alternative to technologies dependent on fossil fuels. AFG anticipates that wood products will play a key role in the development of an emissions-reduced Australian economy.

#### Discussion

The Australian emissions trading scheme is now being developed and is known as the Carbon Pollution Reduction Scheme (CPRS). The CPRS could play an important role in promoting the use of woody to replace energy intensive alternatives, through the inclusion of carbon stored in wood products from the commencement of the Scheme. In addition to sending the right message to consumers about the emissions profile of wood products, this would create an incentive for the strengthening and expansion of sustainable forest industries.

The method of electricity generation in Australia needs to change dramatically if we are to address the inevitable rise in power consumption, and rise in greenhouse gas emissions from fossil fuel-based electricity generation as the economy continues to grow. The CPRS is anticipated to take the first necessary step in addressing this, by attributing a cost to the carbon emitted by power generators.

Energy rating schemes currently operating in Australia do not sufficiently take into account the different emissions profiles of products used in building construction. These schemes focus on the ability of a building to conserve energy once built, for example through heating and cooling, but largely ignore the energy required during production of construction materials. This has meant that wood is competitively disadvantaged – even though the emissions profile of wood is superior to all alternatives currently in use. Schemes for promoting environmental design, such as the Green Building Council of Australia's *Green Star* certification program, need to acknowledge the positive emissions profile of wood and wood products.

### **Preferred Outcomes**

- Inclusion in the CPRS of carbon stored in harvested wood products from scheme commencement.
- Removal of regulatory impediments to growth in existing biomass-based electricity production industries, and incentives available to all levels of industry – from the forest grower to the production plant operator.
- Research and development funds made available for wood-to-liquid-fuels technology as a priority.
- Energy rating schemes in Australia acknowledge the emissions profile of all construction materials – including energy required in manufacturing the materials.

### **Sources**

George A. (2008) *Impact of Carbon Trading on Wood Products*. Forest and Wood Products Australia, Melbourne.

Ximenes, F. (2006) *Carbon storage in wood products in Australia – a review of the current state of knowledge*. Forests and Wood Products Research and Development Corporation, Melbourne.