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Report Highlights:

The Australian government has established a 350 ML target for bio-fuels production by 2010. Proposed bio-fuel production capacity indicates the target could easily be met, however of concern is sourcing an adequate supply of feedstock to sustain an ethanol industry. The cyclical nature of Australia grain production, which includes prolonged drought periods, and quarantine requirements that severely limit the amount of grain that Australia imports will affect the outlook for Australian ethanol production.

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BIO-FUELS POLICY

1. Domestic Policy Environment

Energy Overview: Australia's energy production far exceeds its energy consumption. In total, the energy equivalent of Australia's production of energy commodities in 2004/05 is estimated to have been 17,026 petajoules. (Note: petajoule is a measure of energy equivalent to a thousand trillion joules or roughly 30 million kilowatt-hours.) In contained energy terms, Australia consumes less than one third of the energy it produces, making Australia a significant net energy exporter. Trade in energy is dominated by exports of coal and uranium.

Australian Energy Production (Source: ABARE)						
	1973-74	1980-81	1990-91	2002-03	2003-04	2004-05
Black Coal	1464	2325	4396	7504	7615	8074
Brown Coal	263	312	484	687	684	691
Crude Oil/Condensate	858	854	1182	1233	1099	1039
Naturally Occurring LPG	54	79	94	123	123	123
Natural Gas	172	416	840	1373	1492	1634
Uranium	0.0	1066	2063	4399	4544	5207
Renewables	198	207	239	274	267	258
Total	3009	5259	9298	15593	15924	17026

Despite the energy surplus, Australia is a net importer of liquid hydrocarbons (including crude oil, liquid petroleum gas (LPG) and other refined and semi-refined petroleum products). In 2004/5 Australia exported about 778 petajoules of liquid fuels and imported about 1,451 petajoules. Exports of liquid fuels fell in 2004/5, while imports rose.

Production of bio-fuels in Australia has received much attention over the past year. High oil prices, along with high energy prices more generally, have seen renewed interest in alternative fuel sources such as nuclear power and bio-fuel. More specifically, bio-fuel production has generated a high level of interest within agriculture as farmers look to lower input prices for key items such as fuel, and also look to capitalize on high energy prices.

Despite the attention placed on bio-fuel production, the industry remains in its infancy. Many questions remain about the long-term viability of such an industry and its role in the energy sector in the longer term. Of particular concern is the ability of Australian farmers to produce adequate feedstock to sustain an ethanol industry.

ABARE now believes there may be a significant domestic grain shortage over the next decade. The cyclical nature of Australian grain production, which includes prolonged drought periods, together with increased domestic demand for grain, has caused much concern regarding the development of an ethanol industry. Not all agricultural sectors believe that there will be enough domestic grain to satisfy the emerging ethanol industry.

Despite the bio-fuels industry remaining in its early stages of development, Australian government policy in this area is well developed with the tax regime, production target and industry assistance packages already firmly in place.

(Source: ABARE Energy Update, June 2006)

a. Policies Supporting the Production and/or Use of Bio-fuels

The Government of Australia has a broad range of policy instruments that affect the production of bio-fuels. These instruments include a production target, fuel taxes (excise), fuel quality standards, production subsidies, grants, production targets and labeling.

The Federal government has committed to a production target of 350 ML by 2010. The government is currently working with major oil companies and is actively supporting the establishment of a viable bio-fuels industry in Australia.

Both ethanol and bio-diesel are currently free of excise taxes. However, the Government of Australia originally intended to bring all untaxed fuels into the excise system as of July 1, 2008. Excise was to be levied on ethanol at the rate of 5.22 cents per liter and on bio-diesel at the rate of 7.629 cents per liter, the same rate as petrol and diesel respectively. Excise was also to be applied to liquid petroleum gas (LPG), liquefied natural gas (LNG) and compressed natural gas (CNG), from July 1, 2008 wherever they are used in combustion engines. However, the excise-free period was more recently extended to 2011, via a rebate scheme.

Excise transition paths for fuels entering the excise net (Aust. cents/liter)						
Fuel Type	2003- 10	2011	2012	2013	2014	2015
Biodiesel (high E)	0.0	3.8	7.6	11.4	15.3	19.1
LPG, LNG, Ethanol	0.0	2.5	5.0	7.5	10.0	12.5
Methanol	0.0	1.7	3.4	5.1	6.8	8.5
CNG	0.0	3.8	7.6	11.4	15.2	19.0
Excise rates for existing/conventional fuels						
Petrol and Diesel	38.143	38.143	38.143	38.143	38.143	38.143
LPG and LNG	25	25	25	25	25	25

Source: ABARE

A capital subsidy program of up to \$A10 million per project was provided to subsidize capital expenditure in new or expanded bio-fuels production capacity producing a minimum of 5 million liters of bio-fuel. This program concluded in 2004.

Recent changes to fuel quality standards have been aimed at improving air quality and lowering pollution. The first suite of national standards (Fuel Standard Determination) came into effect on January 1, 2002 and specifies allowable limits on the composition of petrol and automotive diesel fuels and included limitations on sulfur content for both fuels. These standards become progressively tighter towards 2006. The standards also govern the inclusion of other fuels such as ethanol, which is limited to 10 percent of the total fuel volume.

The Australian automotive industry has committed to National Average Fuel Consumption (NAFC) targets – which stand at 6.8 liters per 100 kilometers for 2010. This target will require improvements in both vehicle and fuel quality.

The Australian government has recently introduced a mandatory ethanol labeling standard. This requires ethanol-blended fuel to be clearly labeled for consumers. A recent government report saw this as a constraint to ethanol sales as it appeared more like a “warning label” than a description of the fuel.

b. Size of Total Motor Vehicles Petroleum Based Energy Market

According to ABARE, total demand for petroleum based transport fuels in 2003/04 is estimated at about 42,500 ML (730,000 barrels per day). Demand is forecast to increase at between one and two percent per annum and by 2010 is projected to reach around 50,000 ML per year.

According to a recent government report, the demand for diesel has been growing at about three percent, faster than automotive gasoline, which has been growing at a rate of about 1.2 percent. Despite the growth in diesel fuel consumption, Australia continues to lag behind Europe where 71 percent of new vehicles sold are diesel powered and where diesel accounts for 43 percent of total passenger transport fuel.

Product Components of demand for petroleum based transport fuels (2003/04)	
Automotive Gasoline	47%, or 19,962 ML
Automotive Diesel	34%, or 14,462 ML
Jet Fuel	10%, or 4,329 ML
Liquefied Petroleum Gas (LPG)	6%, or 2,547 ML
Others including lubricants	3% or 1,200 ML

c. Bio-fuels Production Capacities, Current/Planned

According to a recent government report, ethanol production is estimated at 75.2 ML for 2005/06 and is forecast to rise sharply to 605.2 ML in 2006/07. Currently, there are three plants producing ethanol in Australia with the vast majority being produced by one plant. However, another five plants are expected to come on line in 2006/07 and another four ethanol plants are expected to come on line in 2010.

Bio-diesel production in 2005/06 is estimated at 104.7 ML. This production is also derived from only three plants although production is more evenly divided between those plants. Bio-diesel production is forecast to increase dramatically to 524.1 ML in 2006/07 with a total of seven new plants coming on line. However, unlike ethanol, bio-diesel production is projected to remain unchanged in 2010.

It is important to note that a recent bio-fuels taskforce report to the Prime Minister (Report of the Bio-fuels Taskforce to the Prime Minister August, 2005) stated "there are currently no mechanisms in place for comprehensively measuring and reporting trends in production, sales, stocks, imports and exports of bio-fuels." The information pertaining to production in this section has been sourced from this report, which has estimated the capacities of known plants.

Industry sources believe the potential future consumption of fuel ethanol to be determined by the success of the E10 fuel (10% ethanol). Should E10 become the "industry standard" in the eastern states, either through mandate or market demand, around 1.6 billion liters of ethanol would be required to blend around 16 billion liters of automotive gasoline (at 10 percent). Post sees this as the upper limit of ethanol demand potential.

Current and Proposed ethanol production capacity, 2004/05 to 2009/10 (Million Liters – ML)						
Ethanol Capacity	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Manildra	70	70	100	100	100	100
CSR	4	4	32	32	32	32
Rocky Point	1.2	1.2	16.2	16.2	16.2	16.2
Lemon Tree	0	0	67	67	67	67
Primary Energy	0	0	120	120	120	120
Aust Ethanol (Swan Hill)	0	0	90	90	90	90
Aust Ethanol (Colleamb.)	0	0	0	0	0	100
Aust Ethanol (Lake Grace)	0	0	0	0	0	100
Dalby Bio refinery	0	0	80	80	80	80
Austcane Ayr QLD	0	0	100	100	100	100
SymGrain Quirindi	0	0	0	0	0	100
SymGrain West Victoria	0	0	0	0	0	100
Total Ethanol	75.2	75.2	605.2	605.2	605.2	1005.2
Biodiesel Capacity	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Biodiesel Ind Rutherford	0.5	20	20	20	20	20
Aust Biodiesel Grp	15	40	45	45	45	45
Biodiesel producers	0	0	60.2	60.2	60.2	60.2
Aust Renew. Fuels SA	0	44.7	44.7	44.7	44.7	44.7
Riverina Biofuels	0	0	44.7	44.7	44.7	44.7
Aust Renew Fuels WA	0	0	44.5	44.5	44.5	44.5
AJ Bush	0	0	60	60	60	60
Aust Bio dies Group QLD	0	0	40	40	40	40

Natural Fuels	0	0	150	150	150	150
Sth Aust. Farmers Fuel	0	0	15	15	15	15
Total Biodiesel	15.5	104.7	524.1	524.1	524.1	524.1
<i>Source: Report of the bio-fuels taskforce to the Prime Minister</i>						
Total Biofuels	90.7	179.9	1129	1129	1129	1129

d. Feedstock Supply

Feedstock supply remains one of the bio-fuel industry's largest concerns. Increased domestic consumption of feed grains in recent times has seen ABARE forecast shortfalls in domestic grain supply. Increases in intensive feeding in the cattle, dairy, pork and poultry industries have placed increased pressure on feed grain supply. Calculations below show the level of grain required to produce various quantities of ethanol, assuming grain as the only feedstock.

Grain Required to produce ethanol at various levels of output			
Year-production level	2005/06-75.2ML	2006/07-605.2ML	2007/08-1005.2ML
Grain Required	188 TMT	1,625 TMT	2,513 TMT

Currently, the upper limit of domestic ethanol demand is estimated at 1.6 billion liters per year, assuming that E10 eventually replaces standard automotive gasoline. This level of ethanol production would require the purchase of 3.5 million MT of grain. This represents almost ten percent of total grain production in an average season. The cyclical nature of Australia grain production, which includes prolonged drought periods, will exacerbate this problem.

Post considers intensive livestock feeders, combined with exporters, will likely provide strong competition for ethanol plants wishing to procure grain for ethanol production, even when considering the use of ethanol by-product as stock feed. At this stage, given the current reluctance of Australia to import grain, it seems unlikely that ethanol production levels over 1005.2 can be sustained by the Australian grain industry. Bio-diesel producers will likely face similar competition with other domestic users.

Wheat: Production and utilization of feedstock (TMT, ML)

	Product.	Imports	Total	Export	Feed	Bio-fuel*	Total
2001	22108	0	22108	16570	2000	0	18570
2002	24299	0	24299	16464	2100	0	18564
2003	10132	299	10431	10845	2700	0	13545
2004	26132	0	25700	15073	2185	0	17258
2005	22605	0	22605	15779	2338	70	18187
2006	25090	0	25090	15714	2571	70	18355
2007	22784	0	22784	17334	2600(e)	250	20184
2008	23980	0	23980	17661	2700(e)	250	20611

Source: ABARE (year ending June)

(e): post estimate

(*): Derived from Bio-fuel Taskforce

Note: Table does not include stocks or other domestic use

Sorghum: Production and utilization of feedstock (TMT, ML)

	Product.	Imports	Total	Export	Feed	Bio-fuel*	Total
2001	1935	0	1935	501	1429	0	1930
2002	2021	0	2021	586	1643	0	2206
2003	1465	0	1465	70	1397	0	1467
2004	2009	0	2009	289	1382	0	1671
2005	2184	0	2184	513	1433	0	
2006	2019	0	2019	276	1587	0	
2007	2263	0	2263	285		415	
2008		0				415	

Source: ABARE (year ending June)

(e): post estimate

(*): Derived from Bio-fuel Taskforce

Note: Table does not include stocks or other domestic use

Post anticipates the widespread use of existing by-products such as tallow, waste starch, and molasses to supplement grain and oilseed as feedstock for bio-fuel production. The importation of grain, currently constrained by rigid quarantine regulations, could also supplement feedstock supply for ethanol production.

Post estimates that Australia currently produces about 73 million liters of ethanol from sugar cane in two plants. The vast majority of this production is hydrous ethanol, which contains about 10 percent water and is unsuitable for use in vehicles. Changes are currently underway to significantly increase the proportion of ethanol made from cane suitable for use in vehicles.

Current sugar industry ethanol manufacturing processes are not displacing crystal sugar production. Local sugar mills currently manufacture three grades of molasses, with only the poorest grade used to make ethanol. This grade is unable to be used for crystal sugar production and therefore its use displaces stock feed products only.

2. Import Regimes for Bio-fuels

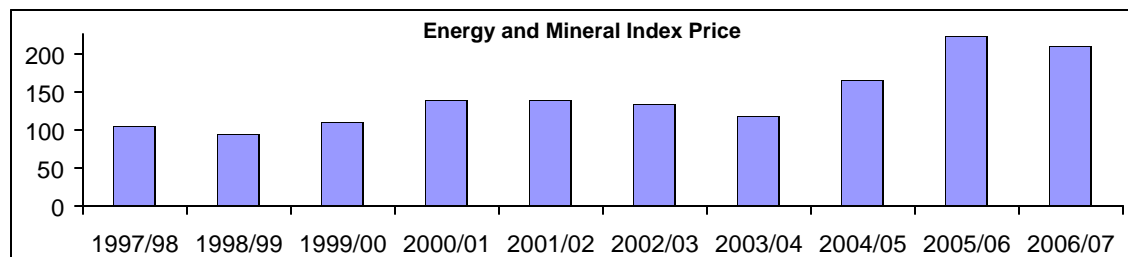
Australia recently placed tariffs on imported ethanol, which can be imported below the cost of local production. The tariff rate, \$A 0.38143 cents per liter, is expected to reduce the competitiveness of imported fuel ethanol, particularly from Brazil. The production cost of Brazilian ethanol has been suggested to be well below the cost of production for Australian ethanol.

Current tariff protection is scheduled for removal by July 1, 2011. The importation of fuel ethanol is a priority for some domestic industry groups such as the Victorian Farmers Federation who recently released a statement suggesting the tariff on imported ethanol is "the most counterproductive obstacle to genuine market place competition".

3. Australian Energy Situation and Outlook

a. Liquid Energy Outlook

Australia produces high levels of liquid energy on a per capita basis. Production and exports of all liquid energy are projected to increase in 2006/07 from historically high levels estimated in 2005/06. In 2005/06, ABARE estimates that Australia exported 62 percent of crude oil production, 29 percent of natural gas production (LNG), 64 percent of liquid petroleum gas (LPG) production and five percent of liquid petroleum production. Production and export volumes of liquid energy are forecast to increase through 2008 before declining from 2008 to 2011.

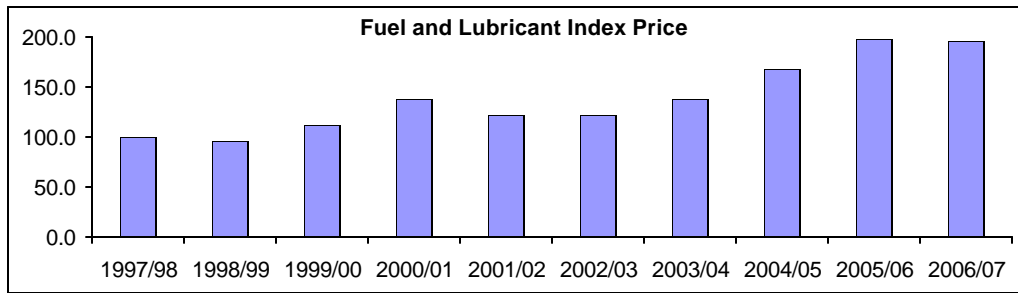


Source: ABARE

ABARE reports that in response to recent high prices, investment in the energy sector is set to increase markedly. This is likely to lead to higher production and lower prices eventually, although energy prices are likely to remain high for the foreseeable future.

b. Fuel Prices

The retail price of petroleum fuel has risen to record levels in recent years. ABARE recently forecast petroleum prices to ease in 2006/07 although remaining at historically high levels. Sources within the ethanol industry suggest the viability of ethanol production relies upon high relative oil prices and any easing in price would likely reduce returns in the bio-fuels industry.



Source: ABARE