

**Discuss the economic concerns that the Australian Government takes into account when formulating policies to manage the environment. Evaluate the effectiveness of these policies on the level of Australia's ecologically sustainable development.**

The policies formulated by the government take into account the relationship between economic growth and the opportunity cost of ecologically sustainable development (ESD). ESD is the development that meets the needs of the present without compromising the needs of future generations, promoting intergenerational equity. In the short term, greater ESD will compromise economic growth in the form of restricting aggregate demand however in the long run, ESD will lead to higher levels of productivity and aggregate supply, leading to long term economic growth.

Australia's economic growth fluctuations can be attributed to its export industry. However, the industry relies heavily on the exploitation of finite resources such as coal and natural gas. Australia is the largest exporter of coal and recently has become the largest exporter of liquefied natural gas (LNG), overtaking Qatar as of 2020. The extraction of these two resources, amongst others such as timber and fish, causes environmental damage and possible destruction of biodiversity and ecosystems in pursuit of greater short term economic growth. At the rate of Australia's exploitation of coal and factoring in growing populations and an advancing society, coal is expected to last as the main source of energy for another 125 years. Further, Australian exports of coal are increasing each year, in 2020, Australia exported 78Mt of coal whereas in 2019, Australia exported 77.8Mt. In an attempt to diversify Australia's export base as well as eventually phase out the need to export coal, the Australian government introduced the National Hydrogen Strategy which aims to position Australia as a major global player by 2030 for clean hydrogen production. The government plans to create programs with Australia's major universities and educational institutions to invest into research and development in order to increase productivity and technical efficiency of the industry and increase its international competitiveness, allowing it to replace coal as Australia's main export industry and thus source of economic growth.

Another concern for the government is the degradation of Australian land which is a loss in productivity for the economy. Land degradation can come in many forms, for example, irrigation of land for agriculture or deforestation to build cities and roads. Deforestation has many consequences including the destruction of biodiversity but it also increases the salinity of the soil which deteriorates the quality of water downstream or downslope. Approximately 7% of the Western Australia agricultural area is suffering from this poor quality of water which the CSIRO estimates to be a \$1 billion loss annually in agricultural revenue as the soil has limited capacity to recover. More than 30% of Australia's agricultural land is degraded which is a loss of \$3.5 billion in agricultural productivity and these costs are expected to rise each year. The Decade of Landcare Plan 1995 aims to promote actions against land degradation, including the regulation and licensing of land degradation. Individual practices on farmland must be proven to the government that it had benefits or were essential, this meant that unsustainable strategies employed on the farmland were now phased out. The government would subsidise education of

sustainable practices while taxing and fining the unsustainable practices if they were being used, increasing the level of ESD in the economy.

Moreover, the government needs to take into account the level of air and water pollution as it carries environmental and economic consequences. Economic activity causes greater pollution as it relies on the transport of goods and services which are carried by ships, aircrafts and motor vehicles which heavily contributes to the level of pollution in the country. The largest source of pollution in Australia is industrial factories, these producers will have waste products in the form of chemicals which will pollute the air or physical products which if handled improperly may end up in waterways. As an attempt to dissuade the improper management of waste, the government introduced a waste export ban which inhibited firms to export waste products to other, usually developing countries to poorly process it and thus pollute their economy. To deal with air pollution the government put forth the National Environment Protection Measures 1994 which are regulations on the quantity of chemicals released into the air.

The National Environment Protection Measures (NEPMs) are a set of 4 measures that specifically target different aspects of the environment in terms of air quality. Their objective is to improve the quality of air to reduce its societal and economic consequences. The first consequence of poor air quality is the increased health costs that workers and individuals face. Almost 5000 Australians die to air exposure each year while thousands suffer from strokes, heart diseases and asthma, which contribute to the cost of \$2.4 billion for Australian people in terms of health-related costs. The NEPMs allow for the creation of other policies to assist in targeting that specific aspect and in terms of health, removing toxins in the air is a main goal. The Air Quality Management Framework alongside NEPMs target the emissions of motor vehicles and through increased taxation for producing these cars will cause a shift away from high emission vehicles and allow for the air quality to improve.

Another form of pollution is water pollution. Water pollution can also impact the amount of rubbish on beaches and shores as the tides may wash pieces of plastic from the water onto the shore or vice versa. This inhibits various recreational activities that individuals may desire, thus presents itself as an economic issue. It is estimated that each square kilometer of Australia's sea surface water is contaminated with 4,000 pieces of plastic. This can range from microplastics to large structures however this amount will still prevent and discourage beach and water use. The government had introduced the 'Don't be a tosser' campaign which intended to prevent waste on beaches from a social standpoint however they also increased the size of fines, hoping to economically discourage this behaviour. Overall, it had a positive impact on the level of pollution on waterways and beaches however it still remains a significant issue.

In an economy with high levels of pollution, the productivity of their workers will decrease significantly as they face multitude of issues, ranging from health problems to the loss of recreational activities which may lead them to leave the country altogether. Although the level of pollution in Australia is not quite enough to deter workers away and cause low productivity, improving their citizen's standard of living and circumstances in regard to political, social, environmental and economic is a major objective. Australia is the 95th most polluted country in

the world however countries such as China face issues of brain drain as a result of their significant air pollution amongst other political and social issues. The formulation of Australian environmental policies are intended to improve their level of aggregate supply through increasing efficiencies and productivity. Their policies must account for the profitability of businesses thus cannot remove pollution altogether but, compared to global standards, Australia is far behind in cutting emissions and undertaking ESD.

The largest environmental concern and greatest market failure known to mankind is climate change. By raising the global temperature by just a few degrees, there will be catastrophic impacts on the global and an increase in abnormal weather phenomena. Burning of fossil fuels contributes to global warming as the carbon dioxide gas (CO<sub>2</sub>) released into the atmosphere will remove some of the ozone layer, allowing for the heat radiation from the sun to increase. This will lead to permanent damage to the Great Barrier reef, increased incidence of skin cancer and malaria, increased frequency of drought and a possible 4.8% reduction in Australia's 2008 GDP by 2100 according to The Garnaut Report. 94% of Australia's energy comes from burning fossil fuels while its exports represent 3.6% of global CO<sub>2</sub> emissions, placing it as a significant offender to global warming. Australian industrial emissions have increased by 60% since 2005 and the European Union (EU) predicts that it will increase by 110% by 2030. By comparison, the EU policies have decreased emissions by 36% over the same time period, humiliating the Australian government's environmental policies. This will impact the EU and Australia's trade relationship so it must turn its attention to the environmental damage in order to maintain this level of economic growth.

Australia did meet its Kyoto Protocol commitments in 1997 however its progress towards the targets of its Paris Agreements are becoming dim. Australia would have to double its emissions target by 2030 in order to uphold the Paris Agreement goals. The policies put by the Australian government in order to achieve its Paris Agreement goals have been ineffective. This incompetence will lead to major trading partners such as the EU and Britain to place carbon tariffs on Australian exports. The reasoning for the ineffectiveness of Australian policies is that it attempts to solve the problem of energy efficiencies and methodology of producing through investing in research and development for the private sector instead of forcing the private sector to do it themselves. A more effective approach would be a emissions trading scheme or an emissions tax which implements a higher cost of production for the producer which forces them to find an alternative through their own research and development which tend to be more efficient as they are motivated by profits.

In summary, the Australian government takes into account 3 major environmental concerns of preservation of the natural environment, pollution and climate change when formulating their economic policies which are historically ineffective.

