She'll be right mate:

Australia's approach to sustainable development

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Abstract

This thesis examines policymaking for sustainable development in Australia. It specifically focuses on climate change policy at the federal and state levels by examining how the coal mining industry has managed to continue operations despite pressure from the international community to phase down unabated use of coal power. The analysis focuses on government and stakeholder policies on sustainable development, climate change and coal mining. Interviews with civil society in Tasmania were used to gain a local perspective on coal mining and climate change policies. The findings were analysed through a Policy Coherence for Sustainable Development (PCSD) lens to answer the main question of: *How and to what extent is there policy coherence for achieving sustainable development in Australia?*

The findings show that due to Tasmania's vast forest reserves that offset carbon emissions and the abundance of hydro and wind power, coal mining does not affect the state's overall emissions profile. Consequently, there is a lack of political commitment and leadership to scale back coal mining and provide incentives to transition away from fossil fuels. At the federal level, mining lobby groups exert greater influence, which in turn results in political inaction to formulate and implement bold policies that address climate change. Sustainable development policies risk being incoherent due to the country's federal system of government which provides for power sharing between levels of governments and departments. The study finds that without a coordinated and whole-of-government approach for sustainable development, numerous trade-offs are highly likely.

Keywords: sustainable development, climate change, SDGs, coal mining, policy coherence, Australia, Tasmania.

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Acronyms and abbreviations

ACFID – Australian Council for International Development

BoM – Bureau of Meteorology

CAT – Climate Action Tracker

CCS – Carbon capture and storage

CCUS – Carbon capture usage and storage

CEFC - Clean Energy Finance Corporation

CSIRO - Commonwealth Scientific Industrial Research Organisation

COP – Conference of the Parties

DFAT – Department of Foreign Affairs and Trade

DISER – Department of Industry, Science,

EPA – Environmental Protection Authority

EPBC – Environmental Protection and Biodiversity Conservation Act

EDGI – Exploration Drilling Grant Initiative

IPCC – International Panel on Climate Change

MCA – Minerals Council of Australia

MRT – Mineral Resources Tasmania

NGO – Non-governmental organisation

NRE Tas – Department of Natural Resources and Environment Tasmania

OECD – Organisation for Economic Cooperation and Development

PCD – Policy coherence for development

PCSD – Policy coherence for sustainable development

SDGs – Sustainable development goals

TMEC – Tasmanian Mineral Manufacturing and Energy Council

UN – United Nations

UNFCCC – United Nations Framework Convention on Climate Change

UNECSO – United Nations Educational, Scientific and Cultural Organisation

VNR – Voluntary National Review

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Chapter 1: Introduction

At the 26th annual Climate Change Conference (COP26) in Glasgow in November 2021, the international community agreed to phase down unabated use of coal (UN, 2021). This agreement derived from a growing urgency over the past thirty years of climate change and increasing evidence that fossil fuels are the primary driver of climate change (UN, 2021). While the focus on coal at COP26 was considered a significant step forward in international climate change action, proposals to phase out (instead of phase down) the use of coal were resisted by countries that rely on fossil fuels (Harvey et al., 2021). Coal is an important source of energy and export commodity for many countries, notwithstanding the global consequences of climate change, such as bushfires, droughts, floods, sea-level rise, the destruction of the ozone layer, extinction of species, and displacement of populations (Jakob et al., 2020).

Addressing climate change is an essential part of sustainable development. The world's climate is threatened by unsustainable energy and land use, and consumption and production patterns (IPCC, 2022c). Climate change amplifies existing threats causing difficulties for the economy, environment and society (Lee, 2019). For example, extreme weather events can lead to loss of life, homes, and livelihoods, and communities that surround coal mining areas are at risk from asthma, affecting people's health (Lee, 2019). International agreements such as the 2030 Agenda for Sustainable Development aim to provide a blueprint for tackling humankind's biggest issues, including climate change. Climate change is represented in the 2030 Agenda through the Sustainable Development Goals (SDGs): SDG 13 Climate Action (UN, 2015b).

Australia can be a leader in climate change action by transitioning to renewable energy; the county is wealthy and has considerable sun and wind resources; however, it is considered a climate change laggard (Griffith, 2022; Morton et al., 2021). At COP26, Australia rejected a pledge to end coal power by the 2030s and declared that coal mining would continue as long as there is a market demand (Morton et al., 2021). The reluctance of the Australian Government to move away from coal mining is criticised by environmental and sustainable development organisations, national governments, and the public, who have urged developed countries (with the capacity to transition away from coal) to take the lead (Climate Council, 2021). Australia has also borne the brunt of more

frequent and extreme weather events and higher temperatures over the past two decades (Climate Council, 2021). With this dichotomy in mind, why is the country so vehemently opposed to ending coal use?

Australia and the state of Tasmania are the empirical focus of this thesis. By examining Australia's adoption and implementation of the Sustainable Development Goals, my goal is to understand the dichotomous situation of continuing to promote coal mining while experiencing the devastating consequences of climate change. I identify the main stakeholders and their position on climate change at the state and federal levels of government. Focusing on the state of Tasmania enables me to obtain a localised perspective on the continuation of coal mining during the climate crisis. The thesis will answer the following main research question: *How and to what extent is there policy coherence for achieving sustainable development in Australia?*

This chapter provides a background of the key themes of my study, including, extractive industries, coal mining, climate change, and the various international agreements that address global sustainable development issues. I introduce Australia and provide a background on the effects of climate change in the country, the role of the fossil fuel industry and mining lobby groups. I also outline Australia's position as a climate change policy laggard. I then provide a background on Tasmania where I explore the state's clean and green image, an overview of coal mining in the state, and the role of the government and lobby groups in the mining industry. I then present my problem statement and identify specific research questions. Finally, I provide an outline of the thesis.

1.1 Background

There is overwhelming scientific consensus suggesting that climate change action must include the reduction of fossil fuels as a source of energy. However, there is a reluctance to move away from fossil fuels and transition to more sustainable energy sources (Stutzer et al., 2021). Australia is a unique case concerning fossil fuel mining and the climate crisis. The country continues to politically commit to fossil fuel mining while simultaneously experiencing frequent climate-related disasters (Griffith, 2022). This

section explores fossil fuel mining, the climate crisis, international agreements, and background on the case of Australia and Tasmania.

1.1.1 Fossil fuels and the establishment of international sustainable development agreements

Extractive industries are those which take raw materials such as oil, coal, gold and iron from the earth through activities such as drilling, quarrying, mining, or pumping (The World Bank, 2021). Extractive industries are historically linked with economic growth; since the 1940s countries that have a large reserve of resources have become more economically privileged than those that do not (Addison & Roe, 2018). Dependence on the extractive industries for export earnings has risen in low and middle-income countries; by 2014, 72 countries had 30% or more of export earnings from extractive industries (Addison & Roe, 2018). Extracting fossil fuels has had adverse environmental impacts. Fossil fuels include coal, oil and gas; they are found in the earth's crust and contain carbon and hydrogen, which are burned to produce energy (Höök & Tang, 2013). They have powered the industrial revolution, assisted in bringing millions of people out of poverty through opportunities for employment, businesses development and increased financial revenues (Ritchie & Roser, 2020). However, their availability is finite and burning fossil fuels generates greenhouse gas emissions, increasing the earth's temperature, which has led to climate change (Foster 1999).

Due to the growing concerns about climate change, several international agreements since the 1970s have referred to the need to promote more sustainable energy sources. In 1988 the Intergovernmental Panel on Climate Change (IPCC) was established, and to this date, their assessments act as the scientific basis of international negotiations. They provide insights into managing the effects of climate change (IPCC, 2022b). In 1992 the United Nations adopted the United Nations Framework Convention on Climate Change (UNFCCC). It is an international treaty designed to combat climate change and by 1994 196 parties had signed the treaty, giving it near-universal membership (IPCC, 2022a). The UNFCCC includes a yearly Climate Conference of the Parties (COP) as the leading global forum for climate change negotiations (Sands, 1992). In 1997, at the third COP, participating parties adopted the Kyoto Protocol, which was a historical milestone as the world's first greenhouse gas emissions reduction treaty (UN, 2015a). At the 21st COP in

Paris 2015, the Paris Agreement was developed, which built on the Kyoto Protocol; it demonstrated multilateral climate cooperation and resulted in a legally binding treaty on climate change (UN, 2015a). The goal of the Paris Agreement is to limit global warming to below 2° Celsius (C) compared to pre-industrial levels, preferably to 1.5°C (UN, 2015a). Additionally, in 2015 the 2030 Agenda for Sustainable Development was established, which sets out the Sustainable Development Goals (SDGs) (UN, 2015b). There are 17 SDGs, SDG 13 represents climate action and it embodies the Paris Agreement's 1.5-2°C global warming limit (UN DESA, 2022c). It has five targets and eight indicators which centre on strength, resilience and adaptation to natural disasters, education, assistance for developing countries, and integration of climate change measures into national policy and planning (UN, 2022b).

Since 2015 and the establishment of the Paris Agreement and the 2030 Agenda, minimal progress has been made to address climate change (IPCC, 2022d). The past seven years were the hottest on record, and atmospheric greenhouse gas concentrations have gradually risen since 2015 (WMO, 2021). COP26 in Glasgow 2021 reiterated the urgency of the climate crisis and urged countries to move away from fossil fuels, resulting in countries agreeing to phase down unabated coal (UN, 2021, p. 26). Unabated coal is the use of coal power that is not mitigated with technologies to reduce carbon dioxide, such as carbon capture and storage (CCS) (UN, 2021). Further, the latest IPCC report in April 2022 stated, "any further delay in concerted and participatory global action on adaptation and mitigation will miss a briefly and rapidly closing window of opportunity to secure liveable and sustainable future for all" (IPCC, 2022 p.35). Despite urgent calls to action on the international level to address climate change, countries such as Australia can be considered a climate change laggard.

1.1.2 Australia's rapidly changing climate

Climate change has had severe impacts in Australia; since 1910, Australia has warmed 1°C, most of which occurred since 1950, and eight out of ten of Australia's hottest years on record have been since 2005 (CSIRO, 2021). The Commonwealth Scientific and Industrial Research Organisation (CSIRO) found that recent droughts in many parts of the country are linked to or exacerbated by global warming (CSIRO, 2021). These temperature changes have contributed to the bushfire season being more severe and more

prolonged since the 1950s, and rising sea level has contributed to coastal flooding and shoreline retreat (Steffen et al., 2021). From mid-2019 to early 2020, Queensland and New South Wales experienced severe bushfires after hot temperatures and low rainfall destroyed animal habitats, housing, life, and livelihoods (Yu et al., 2020). It is estimated that days with high-to-extreme fire risk will increase by 15–70% by 2050 and by more than 100% by 2100 (Yu et al., 2020).

The effects of climate change on low lying Pacific islands affect Australia. Australia is a neighbour to the Asia-Pacific region; it is its largest aid donor, trading partner, source of tourism, and one of the largest recipient countries of Pacific migrants (McAdam & Pryke, 2020). This region is at risk of displaced people due to natural disasters and sea-level rise. From 2008 to 2018, Asia-Pacific accounted for 80% of disaster displacement worldwide (Ponserre & Ginnetti, 2019). Islands such as Tuvalu are already experiencing displacement due to sea-level rise, which has risen approximately 0.5 centimetres yearly since 1993 (McAdam & Pryke, 2020). In 2021, Simon Kofe, Tuvalu's foreign minister, addressed COP26 while standing knee-deep in seawater, where there used to be dry land. Mr Kofe urged countries to take more action on climate change, as many low-lying Pacific islands will face flooding, causing displacement of people and loss of livelihoods (ABC, 2021). As a neighbour, Australia is ethically obligated to help reduce global greenhouse gas emissions to protect the lives of people in these areas (McAdam & Pryke, 2020).

1.1.3 Australia's renewable energy capacity

Renewable energy is an alternative to fossil fuels; it is acquired from non-depletable sources, which create low levels of greenhouse gas emissions, such as solar, wind and hydro (Li et al., 2020). Hydroelectricity is electrical energy generated when falling water is channelled through water turbines (Geoscience Australia, 2021a). Solar power generation is energy from the sun, which is converted into electricity and is often accomplished through solar panels on rooftops (Geoscience Australia, 2021a). Wind energy is generated by converting wind currents into other forms of energy using wind turbines (Geoscience Australia, 2021b). Australia has considerable amounts of solar and wind resources. The country has the highest solar radiation per square metre of any continent, which means it has some of the best solar energy resources in the world

(Geoscience Australia, 2021). There is low population density, meaning houses commonly have big roofs, so there is substantial potential for expanding renewable energy through rooftop solar panels (Griffith, 2022). Wind resources are plentiful in the country's south, along the 60,000km coastline, and offshore (Briggs et al., 2021). In 2020, 24% of Australia's domestic electricity generation came from renewable energy (Taylor, 2021a). However, wind and solar power can play a more significant part in the renewable energy transition. Renewable resources are abundant; they merely require funding, research, and commitment (Griffith, 2022; Li et al., 2020). It is apparent that Australia faces many consequences of climate change, from refugees to droughts and floods, and has the capacity to pursue renewable energy. However, Australia remains a climate change laggard at both the national and international levels.

1.1.4 Australia: A climate change laggard

Australia is a climate change laggard due to the inaction on climate change and its lack of commitment to international agreements. In 1992, Australia signed and ratified the UNFCCC; by doing so, they accepted the principles of the Convention: to stabilise greenhouse gas concentrations to protect against threats of climate change (Kelly, 1992). However, at COP3 in 1997 in Kyoto, Australia began displaying reluctance to enforce climate change policy and adopt intentional treaties because it would negatively affect Australian jobs and industries (Talberg et al., 2016; UN, 2022d). Due to Australia's reluctance to support the Kyoto Protocol, the Australia clause was developed. Australia was granted a concession that included land-use change and forestry as part of their net emissions; and allowed the country to increase emissions by 8% (Stevenson, 2008). Australia's involvement in international climate change agreements between this time and 2007 was marginal, securing Australia's reputation as a climate change laggard (Stevenson, 2008).

In 2007 there was a change of government to Labor until 2011, and from 2011 to 2013, a Labor-Greens Government, both governments introduced climate change policy and became more active in climate matters on the international level (Talberg et al., 2016). In 2007, after one month in power, the Labor Government ratified the Kyoto Protocol at COP13 (Talberg et al., 2016). Several climate change initiatives were undertaken, including funding and research into climate change, climate mitigation and resilience

solutions and a carbon tax (Talberg et al., 2016). Despite the progress toward climate change policy by the Labor and Labor-Greens Governments, in 2013, the Liberal-National Coalition came back to power and dismantled climate change programs developed under the previous government (Crowley, 2021).

The next milestone in international climate agreements was COP21 in Paris in 2015, where the Paris Agreement was produced through which countries are to submit nationally determined commitments (NDC) for emissions reduction (Crowley, 2021). Australia's first NDC in 2015 outlined reducing emissions by 26 to 28% below 2005 levels by 2030 (DISER, 2022b). In 2020 Australia reaffirmed this target and outlined a technology-led approach to emissions reduction (DISER, 2022b). In 2021, Australia further updated their NDC in line with the release of the Emissions Reduction Plan at COP26. This included a commitment to net zero emissions by 2050 and reaffirmed the 2030 target and the focus on technology to reduce emissions (DISER, 2022b).

The Climate Action Tracker (CAT) is an independent scientific analysis that tracks and measures government climate action against the Paris Agreement from critically insufficient, highly insufficient, insufficient, almost sufficient, to 1.5°C Paris Agreement compatible (CAT, 2021). CAT (2021) rated Australia's climate targets, policies, and finance, including their NDC, as highly insufficient. Current targets and policies are incompatible with reaching the Paris Agreement, and emissions will continue to rise under current policies and result in more than 3°C of warming (CAT, 2021). A country's NDC should aim to reduce emissions in line with keeping the global temperature increase well below 2°C and aiming for 1.5°C. Hewson et al. (2021) demonstrate that Australia's 2030 and 2050 emissions reduction targets are not in line with the Paris Agreement. Australia's 26-28% emissions reduction by 2030 and net-zero by 2050 exceeds the country's carbon budget; Australia requires a 2030 target of 58% reduction of 2005 levels to reach net-zero by 2050 (Hewson et al., 2021).

1.1.5 Commitment to the fossil fuel industry

Fossil fuels are an important source of energy and export commodity for Australia. The most recent mining boom started in the early 2000s. It focused on expanding iron ore, coal, and gas, driven by demand for resources from emerging economies such as

Indonesia and India (Battellino, 2010). In 2019 Australia had over 100 operating coal mines, was the world's third-largest fossil fuel exporter, and coal and gas accounted for 79% of Australia's electricity generation (Daley et al., 2021; DISER, 2022a; Senior et al., 2021). In 2019-20, mining represented Australia's largest industry sector with a 10.4% share of the economy and totalled $202 billion (ABS, 2021). Further, the extractives industry has, since 2005, accounted for more than one million employees, and wages in the resource sector are the highest of all Australian industries (DISER, 2019). At COP26, the Industry, Energy and Emissions Reduction (DISER) Minister Angus Taylor expressed that Australia will continue to mine coal while there is a market demand (Taylor, 2021b). Taylor conveyed that stopping the production of coal and transitioning to renewable energy will cost the economy and jobs, and so it is not in the national interest phase out or phase down coal mining (Sales, 2021).

The role of mining lobby groups in Australian politics is essential to consider when reviewing Australia's commitment to coal mining. Pearse (2007) coined the term 'greenhouse mafia' to describe the country's biggest polluters. His mafia comprises of the coal, oil, cement, aluminium, mining, and electricity industries. These groups have determined climate policy through their close relationships with politicians and access to internal government processes (Hamilton, 2006; Pearse, 2007). Similarly to the Liberal-National Coalition Government, industry lobby groups dismiss the need for climate change policy because it will harm business, jobs, and economic growth (Tranter, 2013). In addition to lobby group influence, Australia's political framework that means inconsistencies between climate change policies are present at different levels of government. Australia is a federation in which legislative powers are separated between the federal, state, and local levels of government (Althaus et al., 2020). For example, legislation relating to onshore fossil fuel mining is a state responsibility. At the same time, climate change, including renewable energy and emissions reduction policy, can be addressed at all levels of government (*Constitution Act 1977* pt V s 51). Therefore, as demonstrated, Australia at the federal level is a climate change laggard. In contrast, the state of Tasmania can be considered an emissions reduction leader (Cox, 2021b).

1.1.6 Tasmania: clean and green

The island state of Tasmania is often depicted by the Tasmanian Government as being clean and green (Tourism Tasmania, 2022). Approximately one-third of the state is recognised by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) as a world heritage area and is one of the last stretches of temperate rainforest in the world (see map 1.1) (UNESCO, 2013). The expansive native forests absorb carbon, acting as a carbon sink for emissions released in Tasmania (Tasmanian Climate Change Office, 2021). Native forests and renewable energy in Tasmania have enabled the state to maintain net-zero emissions since 2015, and in May 2022, Tasmania became carbon-negative (Rosengreen, 2022). Carbon negative means that Tasmania is removing more carbon dioxide from the atmosphere than it is emitting and it is one of the first places in the world to do this (Uibu, 2022). Tasmania has therefore become a climate change leader in Australia.

Map 1.1: UNESCO World Heritage Area (Tasmania Park and Wildlife Service, 2022).

Hydropower has been used in Tasmania since the early 1900s, and Hydro Tasmania is Australia's largest producer of renewable energy. The hydropower industry developed in Tasmania to attract heavy industry to the state by offering cheap hydroelectricity. It successfully attracted Nyrstar, a zinc smelting company, and their Tasmanian site is one of the biggest zinc smelting sites in the world (Nyrstar, 2020). Hydro Tasmania currently have 30 hydropower stations and two wind farms across ten locations in Tasmania (see map 1.2) (Hydro Tasmania, 2022b, 2022a). Hydro Tasmania produces enough power

every year to power 900,000 Australian homes and small businesses (Hydro Tasmania, 2022a). In 2019-2020 just under 90% of Tasmania's electricity was electricity was generated from hydropower, and approximately 10% was generated from wind power (Tasmanian Economic Regulator, 2020).
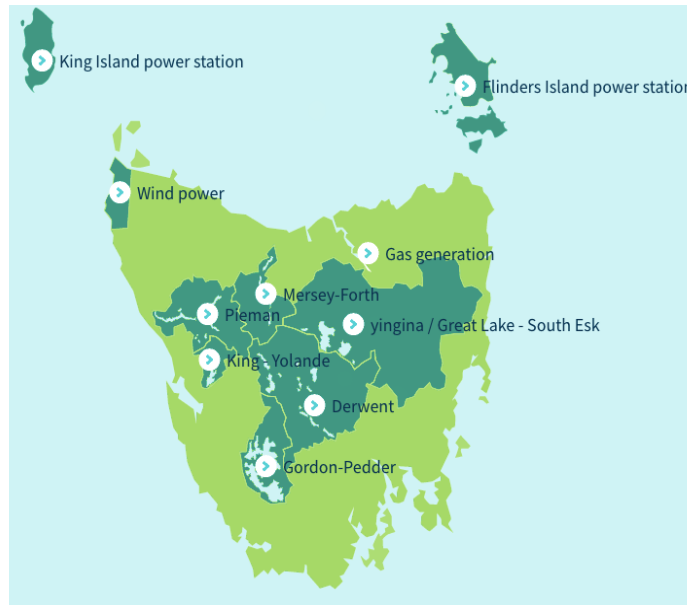
Map 1.2: Hydro Tasmania's power stations (Hydro Tasmania, 2022b).

While there are large amounts of renewable energy in Tasmania, manufacturing companies often require more powerful energy sources such as coal to meet their production needs (Schumacher & Juniper, 2013). Cornwall Coal began coal mining in the Fingal Valley in 1886; currently, they operate out of three mines and are a subsidiary company of Cement Australia (Mining Link, 2022). The coal mined by Cornwall Coal is sent to Cement Australia in Railton Tasmania to make cement and to Norske Skog, a Norwegian paper company located in Boyer Tasmania (Mining Link, 2022). Both companies have addressed the sustainability of the manufacturing industry, recognising that the industry is one of the biggest emitters of greenhouse gas emissions (Cement Australia, 2022; Norske Skog, 2022). Cement Australia reduces emissions through their subsidiary company Geocycle which makes industrial waste into energy and is used to assist the manufacturing process and reduce the amount of coal used (Cement Australia, 2022). Similarly, Norske Skog produces biogas from organic material waste from paper production and is used as a green fuel in various types of vehicles to reduce emissions in the transport sector of their operations (Norske Skog, 2022). Nevertheless,

manufacturing products such as paper and cement require high temperatures that are more easily achievable by coal power (Schumacher & Juniper, 2013; Vass et al., 2021).

1.1.7 The Tasmanian mining industry

The Tasmanian Government does not play a significant role in coal mining; however, they do grant coal exploration licences and subsidies for companies to explore new mining opportunities in the state. In 2019 the government gave two exploration subsidies to coal companies, one for $23,000 and one for $50,000 (Minshull et al., 2019). These subsidies were met with considerable backlash from the community, who believed the government should not be supporting any new coal mining projects (Coulter, 2019). The State Government granting licences and subsidies is noteworthy as it is happening at a time when the international community is pushing for a reduction of fossil fuel use, when climate related disasters are more frequent and more severe, and when renewable energy is abundant (Minshull et al., 2019). The map below (map 1.3) shows Cornwall Coal's active mines in the red box in the northeast of the state. The coal mining leases are shown in the pink section through the midlands and northeast of the state.
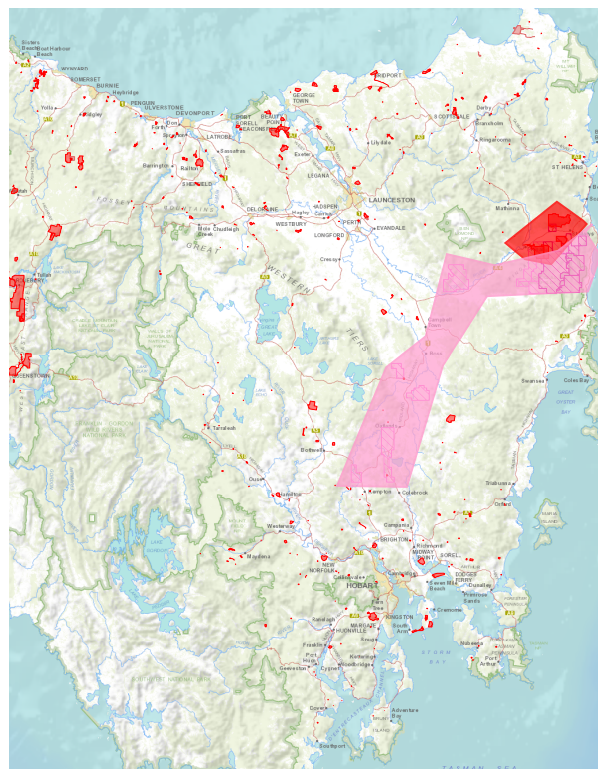
Map 1.3: Tasmania's coal mines and leases (LISTmap, 2022).

(modified by author)

Regarding industry lobby groups on the state level, the Tasmanian Minerals Manufacturing and Energy Council (TMEC) is the leading industry lobby group. TMEC represent businesses, companies and individuals involved in the state's exploration, mining and mineral processing, manufacturing, and energy sectors (TMEC, 2022). TMEC provide leadership, management and cooperative action on behalf of its members to promote the development of sustainable exploration, mining, industrial processing and manufacturing sectors (TMEC, 2022). TMEC started as the Tasmanian Chamber of Mines in 1985 and has since evolved to include the manufacturing sector; there are currently more than 100 members (TMEC, 2022). Tasmania's strong focus on renewable energy has influenced TMEC to incorporate renewable energy onto their agenda. While the state government and TMEC work together on mining policy, there is not the same degree of influence on climate change policy as at the federal level.

Considering the severe impacts of climate change that Australia is experiencing and will continue to experience, achieving sustainable development goals such as climate change is important to ensure a liveable planet for future generations. Australia's approach to climate change policy varies between the state and federal levels of government, causing Australia to be a climate change laggard while Tasmania is a climate change leader. Examining Tasmania in relation to Australia will allow for an assessment of policy approaches at different levels of government and the extent to which policy coherence is present at the federal and state levels of government.

1.2 Problem statement

This thesis examines Australia's sustainable development policy by focusing on climate change and coal mining, which are explored through a policy coherence lens to answer the main research question and sub-questions:

How and to what extent is there policy coherence for achieving sustainable development in Australia?

- How has the federal government addressed policy for the SDGs, and to what extent do mining lobby groups influence climate change policy?

- Why does Tasmania continue to mine coal and to what extent is there political commitment and leadership in Tasmania to reduce carbon emissions?

Examining sustainable development in Australia by focusing on climate change is important considering the negative effects climate change can have on other areas of development. Incorporating coal mining into this study is appropriate as reducing coal mining is essential to limiting the effects of climate change. Australia is noteworthy because the country is at high risk of increased climate related disasters, and it has a complex political system that does not always allow for policy coherence between levels of government and departments. Therefore, looking into Australia's policy coherence for sustainable development will provide insight into how possible it is to achieve policy coherence in Australia's political framework. The role that the coal mining industry plays in Australia's position as a climate change laggard will provide insight into the major stakeholders and their position in creating coherent climate change policy. To answer my research questions, I analyse policy documents from the state and federal levels of government. I also analyse interviews I conducted during fieldwork in Tasmania. This is done through a policy coherence for sustainable development lens which will allow me to examine the level of coherence present at different levels of government and between levels of government.

1.3 Thesis outline

Chapter one of this thesis introduces climate change and coal mining before focusing on Australia and Tasmania. It outlines the research aims and questions and provides an outline of this thesis. Chapter two presents the theoretical framework used in this research and associated challenges. The theories include sustainable development, governance, and policy coherence for sustainable development. I outline why these theories are relevant to my thesis. Chapter three examines the methods used for my thesis: a qualitative case study with document analysis and interviews. It describes data analysis and coding methods used and justifies the case of Australia and Tasmania. Chapter four displays my findings and discussion. I begin with how the federal government approaches sustainable development and climate change policy and the influence of mining lobby groups. I then discuss this in relation to policy coherence for sustainable development. Chapter four then presents findings for the Tasmania section of my

research. It focuses on why Tasmania continues to mine coal and the extent to which there is political commitment and leadership for sustainable development and climate change policy. This is discussed through a policy coherence for sustainable development lens. This is followed by my final chapter, where I conclude my findings and discussion and outline the way forward for Australia.

Chapter 2: Theoretical framework

This chapter provides an overview of the theories used in my thesis. I explore sustainable development, its origins, and why it has become an important part of international agreements leading to the 2030 Agenda and the Sustainable Development Goals (SDGs). I explore the importance of governance for sustainable development and the different governance approaches, including approaches to policymaking. I then focus on policy coherence and the Organisation for Economic Co-operation and Development's (OECD) Policy Coherence for Sustainable Development (PCSD) framework. Finally, I operationalise the theory and explain how it is used in the Australian context and why it is relevant for this thesis.

2.1 Sustainable development

Sustainable development was popularised in 1987 in the World Commission on Environment and Development (WCED) report, *Our Common Future*, as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, p. 51). This conceptualisation separated development into three pillars, society, economy and environment (WCED, 1987). At the time of the report, there was an increasing understanding of the consequences of human activity on the earth. For example, overuse of non-renewable resources, natural disasters, environmental degradation, population growth, and rising poverty and unemployment (WCED, 1987). While the *Our Common Future* definition of sustainable development has been commonly accepted, several alternative interpretations exist.

2.1.1 Approaches to sustainable development

Williams and Millington (2004) refined the concept by distinguishing between stronger and weaker sustainable development. Weaker sustainable development is where humans believe they are separate from nature, have the right to dominate nature, and technology is relied upon to solve environmental concerns (Williams & Millington, 2004). By comparison, the relationship between humans and the environment is considered equal in stronger sustainable development. The earth's resources are viewed as finite, and it is believed that human attitudes towards consumption and economic development should focus on environmental concerns (Williams & Millington, 2004). The *Our Common*

Future definition has been criticised as weaker sustainable development because it promotes economic growth to solve development concerns such as poverty (Castro 2004). This is considered the main shortcoming of the mainstream conceptualisation of sustainable development (Castro, 2004; Sachs, 2015a). For example, the World Bank focus on technological investment to manage economic and environmental trade-offs within sustainable development (World Bank, 1992). This approach identifies economic growth as a necessary part of development and relies on technology to provide solutions to environmental concerns (Castro 2004). Prioritisation of economic growth has often hindered environmental sustainability. Economic growth through industrialisation and the use of fossil fuels has succeeded in bringing people out of poverty. However, it's contribution to climate change has threatened the wellbeing of future generations (Wadanambi et al., 2020). This makes the three-pillar approach to sustainable development critical, as it signifies the need to find a balance between societal, environmental, and economic development.

Others have placed greater emphasis on the environmental pillar in their approach to sustainable development. For example, Rees (1990) believes that the introduction of sustainable development into the political mainstream has resulted in the concept being less concerned with ecological stability. By prioritising the environment within sustainable development projects, it aims to support human life without natural resources being extracted faster than they can be replenished (Brodhag & Taliere, 2006; Redclift, 1992). Further, Cerin (2006) and Lobo et al. (2015) emphasise meeting the needs of future generations by ensuring that current consumption levels and interactions with the environment do not compromise future generations' needs. In comparison, the societal pillar of the WECD definition is focused on maintaining social values such as culture, equity and social justice (Koning, 2002). This pillar can be thought of as a system of social organisation that relieves poverty within the existing environment and economic limitations, ensuring it does not lead to environmental destruction or economic instability (Littig & Griessler, 2005). This approach to societal development encourages each pillar to support one another. For example, economic development can help bring people out of poverty and improve living standards (Koning, 2002). Environmental sustainability ensures that the planet is liveable and aims to limit the risks of natural disasters, thereby enhancing quality of life for society in the present and future (Koning, 2002).

2.1.2 Sustainable development: challenges

While sustainable development can be viewed through an environmental, societal, or economic lens or a balance of all three, when one pillar is prioritised over another, it can result in the progress of one at the expense of another. This is demonstrated by industrialisation, where economic growth was achieved by burning fossil fuels, which led to climate change (Wadanambi et al., 2020). Considering the alternative approaches to sustainable development, it can be considered a vague concept (Brodhag & Taliere, 2006). Governments and stakeholders can interpret the concept according to their interests and focus on one aspect over another. The concept being open to interpretation may also encourage disengagement from achieving sustainable development, with governments and stakeholders not meeting responsibilities and commitments (Brodhag & Taliere, 2006).

Other critics, such as Meadows (1972, 2012), believe it is too late for sustainable development and that efforts should be directed towards resilience. This is done by developing societal systems to absorb the consequences of sustainable development, such as poverty and environmental degradation (Meadows, 2012). Sustainable development has been criticised because of its ambiguity and multidimensionality, which enhances the chance of conflict between the three pillars. However, the *Our Common Future* conceptualisation continues to remain the most used and forms the basis of international agreements on sustainable development, such as the 2030 Agenda for Sustainable Development (UNSSC, 2022). While this conceptualisation is criticised for being open to interpretation; the vagueness and broad nature of the concept allows its adaptation to various political and economic contexts. If the concept were prescriptive and less open to interpretation, it would be difficult to apply to various contexts. The flexibility of the *Our Common Future* conceptualisation ensures that it can apply to all governments and stakeholders around the world. This thesis focuses on sustainable development from the perspective of the 2030 Agenda; it is therefore important to recognise the *Our Common Future* conceptualisation as it underpins the agenda.

2.2 The 2030 Agenda and the Sustainable Development Goals

The 2030 Agenda for Sustainable Development is an accumulation of more than four decades of multilateral dialogue and negotiation of international conventions. Namely, the 1992 Earth Summit, 2000 Millennium Development Goals, 2002 World Summit on Sustainable Development, 2012 The United Nations Conference on Sustainable Development (Rio+20), 2015 Sendai Framework for Disaster Risk Reduction and 2015 Addis Ababa Action Agenda on Financing for Development, 2015 Paris Agreement (UN DESA, 2022c). The 2030 Agenda's 17 Sustainable Development Goals (SDGs) complement international conventions by providing a globally shared normative framework that fosters collaboration across countries, the private sector and civil society (UN, 2015b). The 17 SDGs have a corresponding 169 targets that address global challenges, including poverty, inequality, climate change, environmental degradation, peace and justice (UN DESA, 2022c).

> The SDGs are an urgent call for action by all countries - developed and developing - in a global partnership. They recognise that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests (UN DESA, 2022c).

Figure 2.1: The 17 Sustainable Development Goals (OECD, 2018)

2.2.1 Principles of the SDGs

A global set of goals, such as the SDGs, agreed on by governments, civil society, and international organisations aim to provide consistency in addressing global issues such as disease, poverty and climate change (Sachs, 2015b). There are five principles of the 2030 Agenda: universality, leaving no one behind, interconnectedness and indivisibility, inclusiveness, and multi-stakeholder partnerships (UNSSC, 2022).

Universality aims to ensure a comprehensive effort to sustainable development in a globalised world (UNSSC, 2022). It is applicable to all countries and commits all countries to the SDGs irrespective of their development status. This is important considering how actions in one country can affect another due to the impacts of a globalised world created by the rapid flow of capital, people, goods, and ideologies across national boundaries (Khan, 2017).

To leave no one behind, the 2030 Agenda aims to reach out the most vulnerable communities wherever they are. It addresses the specific needs and challenges of these communities (UNSSC, 2022). A major cause of people being left behind is discrimination which leaves individuals, families and communities marginalized, and excluded (UNSDG, 2022). To achieve this principle at the national level it will require identifying who is left behind and why and identifying effective measures to address the root causes of marginalisation (UNSSC, 2022).

Interconnectedness and indivisibility relate to the interconnected nature of the SDGs. The goals are interconnected, meaning they should be treated in their entirety rather than individually (UNSSC, 2022). They are not designed so governments can pick one and ignore another, they need to be treated in their entirety to ensure minimal trade-offs and encourage synergies across goals.

The 2030 Agenda encourages inclusive participation from all areas of society irrespective of race, gender, and ethnicity (UNSSC, 2022). To ensure no one is left behind, it necessitates inclusive action, with participation from all areas of society. Providing an inclusive environment for achieving the SDGs will help to address inequalities on a national and global level (HLPF, 2019).

2030 Agenda demands an enabling environment for participation by all. As the goals are interconnected, they require different sectors and actors working together. Multi-stakeholder partnerships are essential for sharing knowledge, expertise, technology, and financial resources to support the SDGs in all countries (UNSSC, 2022). The goals cover a broad range of sustainable development areas and require support from all aspects of society and multi-stakeholder partnerships (UN DESA, 2022b).

The 2030 Agenda goes beyond the traditional three pillars of sustainable development (economy, environment, and society) to incorporate the five P's: people, prosperity, planet, partnership, and peace (UNSSC, 2022). Including peace and partnership aims to make sustainable development more far-reaching (UNSSC, 2022). Peace is important to create just and inclusive societies free from fear and violence. Partnerships enhances a global solidarity and inclusiveness for achieving sustainable development (UNSSC, 2022). The 2030 Agenda sees sustainability as sitting at the core of these five dimensions and that they should inform policy decisions. For development to be sustainable it should take into account the five P's (UNSSC, 2022).

2.2.2 Fostering synergies and managing trade-offs

While the 2030 Agenda and the SDGs are considered a breakthrough in international negotiations, being the most extensive outline to date for eliminating extreme poverty, reducing inequality, and protecting the planet, there are many criticisms of the SDGs (UNSSC, 2022). The goals are non-binding, which allows them to be ambitious, however, this can result in a lack of accountability (Bali Swain, 2018). The source of financial resources and investments required for the SDGs are also ambiguous. For example, the SDGs require significant changes to energy systems to cut emissions which will be financially unviable, costing approximately $2-3 trillion a year of public and private money over the next 15 years (Bali Swain, 2018). Further, the universality and broad language of the SDGs have been criticised by Kenny (2015). He illustrated that many of the targets would benefit from revisions that make the language more specific and explicit. For example, rather than 'significantly reducing all forms of violence by 2030' (target 16.1), he suggests 'by 2030 reduce all forms of violence' (Kenny, 2015). Lastly, the SDGs encompass a broad range of topics with inherent inconsistencies, such as the environment and the economy (Pearce & Atkinson, 1993). The broad nature of the

SDGs has attracted criticism from Horton (2014), who described the SDGs as ''fairy tales, dressed in the bureaucratese of intergovernmental narcissism, adorned with the robes of multilateral paralysis, and poisoned by the acid of nation-state failure.'' These criticisms illustrate that the goals may be considered unrealistic as they are ambitious, vague, and expensive. However, for the goals to apply to all countries and stakeholders, they need to be adaptable and apply to a wide variety of political and economic contexts.

There are several challenges associated with implementing the SDGs, understanding these challenges is vital to ensure optimisation of the goals. For example, the management of trade-offs is essential to the success of the SDGs (OECD, 2016). Trade-offs occur when one aspect of a goal is advanced at the expense of another, this is likely to happen if goals are pursued separately (Bowen et al., 2017). In contrast, synergies occur when relationships between the goals are fostered to create mutually reinforcing policies across the goals (Bowen et al., 2017). Several studies explore the connections between the SDGs to measure the synergies and trade-offs (Barry et al., 2010; Iacobuţă et al., 2021; Kroll et al., 2019; Nilsson et al., 2018). For example, Kroll et al. (2019) analyse how trade-offs and synergies have developed over time and provide projections of potential trade-offs and synergies until 2030. The authors found notable synergies for SDG 1 (no poverty), 3 (good health and wellbeing), 7 (affordable energy), 8 (inclusive growth), and 9 (resilient infrastructure). They found that many SDGs can be achieved when there is a focus on poverty alleviation and strengthening the economy through innovation and modern infrastructure, which leads to inclusive growth, improved health, and affordable energy (Kroll et al., 2019). In comparison, trade-offs are most evident in the goals which focus on the environment and climate change (Barry et al., 2010). Kroll et al. (2019) identify SDG 11 (sustainable cities and communities), 13 (climate action), 14 (life below water), 15 (life on land), and 17 (partnerships) as having the most trade-offs with other goals and project that this will continue beyond 2030.

2.2.3 SDG 13: Climate action, synergies and trade-offs

Climate change affects many other areas of sustainable development, and a lack of action on climate change makes achieving all SDGs less likely (UN DESA, 2022a, p. 13). For example, Goal 13 has five targets and eight indicators which focus on strength, resilience and adaptation to natural disasters, education, assistance for developing countries, and

integration of climate change measures into national policy and planning. The indictors address carbon dioxide emissions, number of deaths due to climate-related events, implementation from all levels of government on resilience and adaption, countries with long term strategies and national plans, education policies at all levels of government, funds mobilised by the most developed countries, and the number of least developed countries engaging in climate change action (UN, 2022b). Climate change has several consequences that affect other areas of sustainable development. Extreme weather events and increased levels of carbon dioxide risk people's livelihoods (SDG 8), communities (SDG 11) and health (SDG 3), and it threatens the extinction of species (SDG 14 and 5) (UN, 2022a). However, taking climate action can encourage progress on other goals. For example, climate solutions such as the development of renewable energy can assist in job creation and economic growth (SDG 8) and affordable access to clean energy (SDG 7) (UN, 2022a).

Iacobuță et al. (2021) developed a framework that scores the impacts of climate change actions on all SDG targets by either trade-offs or co-benefits. They found that climate change mitigation through investing in renewable energy will provide the most co-benefits with other goals (Iacobuță et al., 2021). Comparatively, other climate change mitigation technologies such as bioenergy and carbon capture and storage (CCS) are more likely to have trade-offs with other goals (Iacobuță et al., 2021). This is because these technologies allow fossil fuels to still be produced, whereas renewable energy is a completely clean alternative (Iacobuță et al., 2021). The authors also draw attention to the job loss that phasing out fossil fuels will have, particularly for mining communities. Transitioning to renewable energy will create jobs; however if renewable technology is manufactured elsewhere, jobs from installation and maintenance alone may be insufficient to enhance economic growth (Iacobuță et al., 2021). Nilsson et al. (2018) highlight the dangers of generalisations of trade-offs and co-benefits. Assessment of trade-offs and co-benefits should be based on a country's context. For example, if carbon taxes were introduced to deter people from using fossil fuels in a country that has high poverty rates, this would only add to poverty as it would cost people more to use energy and hinder societal development (Nilsson et al., 2018).

The European Commission has developed a tool to view interlinkages between goals. They identify that interlinkages can be context-dependent or general and can apply locally, nationally or globally (European Commission, n.d.). I selected SDG 13 and trade-offs on the European Commission's interlinkages visualisation tool. Figure 2.1 below illustrates all trade-offs between SDG 13 and other SDG targets. The above literature and figure 2.1 demonstrate the complex interconnected nature of the SDGs and the potential for and consequences of trade-offs between the SDGs. Creating a visualisation helps to see why it is important to develop governance mechanisms to implement the goals, and to avoid unnecessary trade-offs and to promote synergies.
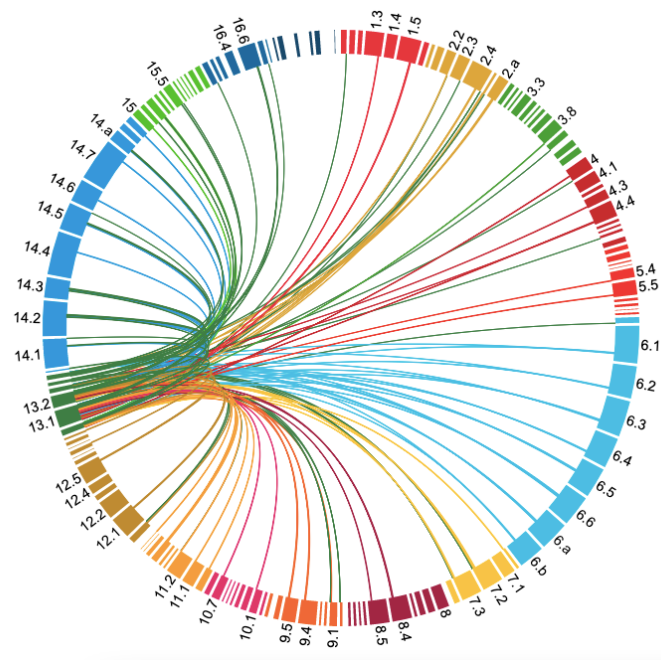
Figure 2.2: SDG 13 trade-offs (European Commission, n.d.).

2.3 Governance for sustainable development

The broad and interconnected nature of sustainable development depends on governance mechanisms that will support its aims and goals. Governance is commonly understood as practices through which societies are governed and is a form of social coordination providing instruments for influencing social change (Meadowcroft, 2007). Kardos (2012) notes that governance cannot guarantee sustainable development, but an absence of governance will limit the ability to achieve sustainable development. Understanding governance for sustainable development helps to foster synergies and manage trade-offs. This is particularly important for political frameworks that do not have pre-existing

mechanisms to encourage collaboration between levels of government or departments. This is demonstrated in the case of Australia, where federalism results in a division of powers between federal, state, and local levels of government.

2.3.1 Approaches to governance

There are various ways to approach governance. Van Zeijl-Rozema et al. (2009) explore the transition from what they term traditional governance, where governments have hierarchical governing powers, to governance as a shared responsibility of public and private actors, including networks of the private sector, civil society, and state actors. Governance can also exist without governments; for example, in weak states where people cannot rely on the government, they may ban together to create informal governance structures (van Zeijl-Rozema et al., 2008). Governance as a shared responsibility is what Jordan (2008) refers to as new modes of governance which rely on participating actors working in a network to steer society, compared to more top-down hierarchical governance structures. New modes of governance are often present within interstate agreements, multinational institutions and organisations and public-private cooperation; this is referred to as 'global governance' (Biermann, 2006).

Global governance also focuses on 'good governance', which associates governance with respect for law and order, human rights, civil rights participation, accountability, transparency, public service management of human, natural and economic resources and an independent judiciary (Kardos, 2012). Normative presentations of good governance are mainly present in the development and international relations field (Rothstein, 2012). For example, good governance has been mentioned in various international development agreements and agendas, all of which consider good governance essential to development. Some include: the Plan of Implementation adopted at the 2002 World Summit on Sustainable Development, The Future We Want adopted in 2012 in Rio, and the 2030 Agenda adopted in 2016 at the UN Summit (UN, 2002, 2012). Currently, the SDGs act as a global blueprint for sustainable development. The SDGs recognise the need for good governance and network governance. This is demonstrated through SDG 16 Peace Justice and Strong Institutions which promotes principles of good governance such as the rule of law, transparency, and accountability (UN DESA, 2022c). Networks are emphasised in the targets under SDG 17 Partnerships for the Goals, which aims to

enhance partnerships and coordination between governments and stakeholders of all countries to achieve the SDGs (UN DESA, 2022c).

2.3.2 Solving governance challenges

Governance challenges for the SDGs centre around the broad, non-binding nature of the goals. Bowen et al. (2017) identify three main challenges: (1) collective action, the goals require multiple actors, governmental and non-governmental, from different levels to work together; (2) trade-offs, sacrificing an aspect of one goal to meet another goal; (3) accountability, mechanisms for accountability are required to ensure that SDG commitments are fulfilled (K. Bowen et al., 2017). Collective action and trade-offs are considered more likely in siloed approaches to policymaking. A silo approach means that levels of government and government departments work separately from each other, following different policy objectives. This can result in limited communication between levels of government and across policy areas (Jeffery, 2006). Moving away from a silo approach when considering the SDGs helps limit trade-offs and encourage collective action (Stafford-Smith et al., 2017).

Due to the challenges associated with sustainable development and the broad nature of the SDGs, it is important to identify governance features for implementing the goals, including, participation, reflexivity and adaptation, democratic institutions, and policy coherence. Participation involves engaging with stakeholders through information exchange with those who are interested in or are affected by a decision, such as civil society, the private sector, and non-governmental organisations (NGOs). Engaging with stakeholders aims to improve decision-making equity (Filho & Brandli, 2016). Rhodes (2007) acknowledges that as the international arena moves away from hieratical governance towards network governance, non-government actors are needed to steer societal development. Reflexivity and adaptation refer to critical self-awareness and the ability of governments and institutions to adapt to challenges associated with sustainable development (Meadowcroft, 2011, p. 540). Reflexive and adaptive governance requires stakeholder engagement to generate knowledge and scrutinise traditional, hierarchical governance approaches to promote more flexible and reflexive governance practices (Voß & Kemp, 2006).

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Democratic institutions are linked to the discourse on good governance as they share similar values of the rule of law, accountability, participation and inclusion (Glass & Newig, 2019). These shared values are considered to make the achievement of sustainable development fair and legitimate (Glass & Newig, 2019). Policy coherence ensures that the SDGs support one another to avoid trade-offs. This involves fostering synergies and collaboration between actors and levels of government (Glass & Newig, 2019). Participation, reflexivity and adaptation, democratic institutions, and policy coherence are all important in addressing governance for the SDGs. They consider the need for network governance, recognising the importance of stakeholder engagement. The OECD (2019) emphasise that all countries will face governance challenges when implementing the SDGs, irrespective of their income level. The OECD's Policy Coherence for Sustainable Development (PCSD) framework focuses on enhancing policy coherence to combat governance challenges for sustainable development.

2.3.3 Policymaking approaches and the Australian context

Considering the importance to acknowledge approaches to governance for sustainable development, it is also important to consider different methods of policymaking. Policy can be considered an instrument of governance; it is the decision by authorities that directs public resources towards a particular issue area (Althaus et al., 2020). According to Lasswell (1971), policy is underpinned by context, problem orientation and methodological diversity. Decisions should be part of an all-encompassing social context, current trends should be examined, and a collection of methods should be employed for wide-ranging policy. Lasswell's policymaking method begins with a policy problem, followed by a sequence of activities to solve the problem. The sequence includes intelligence, recommendation, prescription, invocation, application, evaluation and termination (Lasswell, 1971). Sabatier (2007), suggest that the sequence for policymaking should include, problem identification, agenda setting, adoption, implementation, and policy evaluation. By comparison, Anderson (2005) suggests that policymaking should follow a common-sense sequence involving getting the government to consider a problem, decide what to do about it, accept a solution, apply the policy and reflect on its suitability. Like these policy methods, the Australian Policy Cycle described by Althaus et al. (2020) (figure 2.2) draws on the step-by-step policymaking process while also recognising that it is a never-ending cycle.
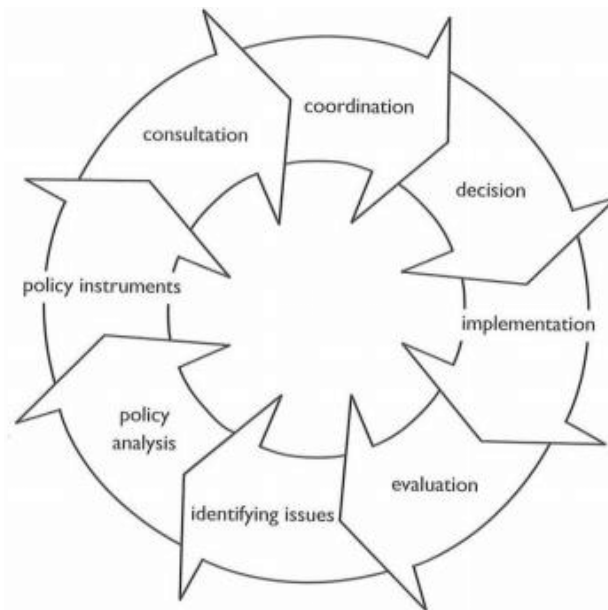
Figure 2.3: Australian Policy Cycle (Althaus et al., 2020)

The Australian Policy Cycle (2020) begins with identifying issues: problems emerge within interest groups or the media, which demand government action. Once a problem is identified, policy analysis involves researching and reflecting on the problem and drawing on specialists in the relevant field. Through policy analysis, policy instruments are identified, for example, legislation, adjustment of government operations or promotion of cooperation between stakeholders. Consultation with relevant government departments is conducted to test the strength of the policy analysis and instruments. Consultation leads to coordination, where discussions with different departments are undertaken about funding, coherence, and consistency of existing policies. Through the coordination process, any issues with the new policy are resolved. In the Australian context, decision making usually happens by the cabinet, which reviews submissions and makes decisions on implementing the policy. In the implementation phase, policy is legislated or outlined in a program. Finally, evaluation ensures the policy does not drift from the policy's original objectives and allows the policy to be adjusted as needed.

Althaus et al. (2020) clarify that the policy cycle is a framework for understanding policymaking, and it cannot cover the flexibilities of policy debates. Further, they express the importance of policy alignment when evaluating a policy's consistency and coherence. Horizontal alignment explores collaboration across government departments to overcome challenges associated with silo policymaking (Matheson, 2000). Vertical

alignment focuses on ensuring collaboration between levels of government within one department. Policies developed through vertical alignment, while they tend to be internally consistent, can reflect the preferences of a single department (Matheson, 2000). Policymaking is approached in various ways, and the Australian Policy Cycle provides a framework for policymaking which considers features related to those discussed above for governance for sustainable development: participation, reflexivity and adaptation, democratic institutions, and policy coherence. This is also consistent with a whole-of-government approach to policymaking, which involves working across policy areas and levels of government to reach common goals and ensure policy coherence. In practice, a whole-of-government approach to policymaking is challenging when departments have varying agendas and different levels of government are responsible for different policy areas.

Australia's policymaking can be quite fragmented due to its political framework. Powers are separated between the local, state, and federal levels of government, meaning that each government makes policies for their area, which may not be consistent with policies at other levels of government (Althaus et al., 2020). For example, hospitals are the responsibility of state governments, but aged care is the responsibility of the federal government (*Constitution Act 1977* pt. V s 51). It is not unlikely that hospital and aged care may overlap, which requires coordination and collaboration between levels of government. However, in practice, collaboration can be absent, which raises issues of conflict between departments and levels of government (Althaus et al., 2020). If trying to achieve SDG 3 (health and wellbeing), having these policy areas fragmented across levels of government may result in incoherent policies and create governance challenges for achieving sustainable development. In Australia, for issues of national significance, all levels of government meet to work collaboratively through the National Cabinet, which came into force in March 2020. However, since 2020 the cabinet has only focused on covid-19 (PMC, 2022). This demonstrates that for issues of national significance other than covid-19 such as climate change, there appears to be a limited whole-of-government approach to policymaking.

2.4 Policy coherence for sustainable development

Policy coherence can be understood as mutually reinforcing policy across government departments, creating synergies toward achieving common goals (Jones, 2002). The concept of policy coherence gained prominence in development discourse in the 1990s with the Maastricht Treaty (1992) (Siitonen, 2016). The Treaty was the first to introduce policy coherence for development (PCD) in a multilateral treaty; it required countries to consider the potential effects of policies on developing countries in various areas such as trade, investment and agriculture (Siitonen, 2016). Since this treaty, the EU and the OECD have taken an active role in promoting PCD. In the 2000-2015 Millennium Development Goals (MDGs), PCD became a global political commitment. In the SDGs, PCD has been further strengthened as demonstrated by target 17.14 (enhance policy coherence for sustainable development), which outlines the need for policy coherence for effective governance and implementation of the SDGs (Barry et al., 2010; UN DESA, 2022c). However, while PCD has gained prominence in the international development arena, there remains a lack of agreement about the concept; it is argued to be complex and multi-dimensional (Righettini & Lizzi, 2021).

2.4.1 Policy coherence: definitions

Hoebink (2004) defines policy coherence both broadly and narrowly. In the narrow view, policy objectives in one field should not be undermined by actions in that field. In the broad view, policy objectives in a field should not undermine actions in that field or any other policy field (Hoebink, 2004). Picciotto (2005) focuses on PCD within aid and classifies PCD into four areas; (1) internal coherence, which requires consistency between goals and objectives of a single policy or program, such as an aid program carried out by an OECD government in support of development (2) intra-country coherence, which is consistency between aid and non-aid policies of an OECD government, (3) inter-country coherence which is the consistency of aid and non-aid policies across multiple OECD countries and finally (4) donor-recipient coherence which is the consistency of policies adopted by rich and poor countries to achieve shared development objectives (Picciotto, 2005).

In comparison to Picciotto (2005) who focuses on policy coherence for aid, Carbone (2008) provides a broad definition through four types of coherence: horizontal coherence between different ministries or entities, vertical coherence between different levels of government, and donor-recipient coherence between aid-giving and aid-receiving governments, and multilateral coherence between various stakeholders. These conceptualisations of policy coherence have captured the multidimensionality of the concept and address the need for consistency between policies and programs at different levels and between different actors. Figure 2.3 provides an overview of the different ways to define policy coherence and where they overlap and differ.

	Aid Policy	Foreign Policy	Other National Policies	Policies of other donor countries	Policies of supranational institutions	Policies in recipient countries
Aid Policy	Internal coherence (Picciotto; Carbone) Restricted Coherence (Hoebink)	Internal Wider Coherence (Hoebink)	External Coherence (Hoebink)			
Foreign Policy		Intra-country Coherence (Picciotto) Horizontal Coherence (Carbone)		Inter-country Coherence (Picciotto)	Vertical Coherence (Carbone)	Donor-recipient Coherence (Picciotto; Carbone)
Other National Policies						
Policies of other donor countries						
Policies of supranational institutions					Multilateral Coherence (Carbone)	
Policies in recipient countries						

Figure 2.4: policy coherence definitions (Sianes, 2017)

2.4.2 Approaches to policy coherence

The OECD has built on the concept of PCD to support governments and stakeholders in their efforts to design, promote, implement and assess coherent and mutually supporting policies through the implementation of the Policy Coherence for Sustainable Development (PCSD) framework (OECD, 2019a). The framework is a response to increasing concerns relating to the unsustainable human practices which have led to climate change. The PCSD is an approach and policy tool intended to integrate the economic, social, environmental dimensions of sustainable development at all stages of

domestic and international policymaking (OECD, 2019). It aims to increase governments' capacities to foster synergies and identify and manage trade-offs (OECD, 2019). From this view, policy coherence is considered essential to advance the integration of the SDGs for three main reasons. Firstly, ensure that actions under one SDG or target are consistent with or support progress on other SDGs. Secondly, to avoid and manage trade-offs. Thirdly, to ensure global and long-lasting progress (OECD, 2016). Central to the PCSD framework is a whole-of-government approach to policymaking where collaboration is present across departments and between levels of government to provide common solutions (OECD, 2019a). Whole-of-government mechanisms are essential to achieving policy coherence to address the multi-dimensional policy challenges presented by the SDGs (OECD, 2019a).

The OECD's framework suggests eight principles to enhance policy coherence for sustainable development under three main pillars. Firstly, strategic vision, commitment, and leadership; this pillar focuses on political commitment, strategic long-term vision, and policy integration. It encompasses whole-of-government action, building inclusive political commitment and leadership at the highest level of government, developing a long-term vision toward SDGs, and improving policy integration to incorporate sustainable development into policy finance (OECD, 2019b). To achieve a strategic vision, commitment, and leadership, governments can incorporate principles of the 2030 Agenda into relevant programs and undertake regular reviews of policies. For example, Ireland developed 'Project Ireland 2040', which is comprised of a National Planning Framework and a 10-year National Development Programme (OECD, 2019a).

The second pillar outlines coordinated action across all sectors and government levels and involves policy coordination, local and regional involvement, and stakeholder engagement. To achieve coordinated action, whole-of-government coordination is required to mitigate divergences between department priorities, promote mutually supporting policies, and engage with all levels of government and stakeholders (OECD, 2019b). For example, the Swedish Government has set up an interdepartmental consultation group for the 2030 Agenda, which consists of various stakeholders working together to promote synergies between the goals (OECD, 2019a).

The last pillar is, impacts and informed decision-making, which includes policy and financing impacts, monitoring, and evaluation. Assessing policy and financing impacts is needed to inform decision-making, strengthen, monitor, report, and evaluate systems on the impact of policies and financing and report progress on PCSD (OECD, 2019b). This can be achieved through annual progress reports. For example, in Denmark, there is an annual progress report on the SDGs and every fourth year, the progress report is replaced by a more comprehensive status report that contains potential adjustments to the country's Action Plan (OECD, 2019a).

The PCSD framework aims to support the implementation of the SDGs through the above criteria, which derive from a whole-of-government approach to policymaking. Following PCSD will help govern the SDGs and address the associated challenges. Many elements of PCSD are similar to other conceptualisations mentioned, such as Hoebink (2004), Picciotto (2005), and Carbone (2008), all of which stress the importance of creating policies that do not conflict with or undermine one another.

2.4.3 Challenges to the PCSD framework

While PCSD is considered essential to address governance challenges of the SDGs, such as managing trade-offs and fostering synergies, PCSD should not be considered a silver bullet for good governance for sustainable development policy (Mckenzie & Kuehl, 2021). Koff et al. (2020) acknowledge that while policy coherence is present in the international arena, such as in the 2030 Agenda, there is no universally accepted definition, measure, or scale of coherence for development. They provide the example of during a 2019 exchange with fifteen African representatives of multinational organisations and national governments that work in international development, none had heard of policy coherence for development (Koff et al., 2020). The lack of awareness of the concept limits its effectiveness and suggests a rhetoric-reality gap.

Carbone and Keijzer (2016) suggest that policy coherence has been promoted more as a political end by international organisations and less as a means to achieve sustainability. For example, the framework provides steps for achieving policy coherence; however, it does not offer precise methods for understanding how policy and stakeholder interactions contribute to or undermine specific development intentions (Koff et al., 2020). Further,

aspects of PCSD such as a whole-of-government approach require the flexibility of levels of government, government departments, and stakeholders to work together and organise themselves around urgent issues such as climate change, rather than dealing with them in a fragmented system. However, governments are traditionally set up in silos, making a whole-of-government approach challenging (Christensen & Lægreid, 2006). Creating a system which reflects a whole-of-government approach is a long-term initiative; it requires time, funding, changes in organisational culture, and trust between departments. Governments may implement budgets, programs and objectives that cross horizontal and vertical policy alignment, but the whole-of-government approaches may still be limited unless there are fundamental changes in accountability systems, dominant cultures, and structural arrangements (Christensen & Lægreid, 2006). The structural changes needed and the increased collaboration between departments may place additional pressure on departments with large portfolios. Further, there is a balance that needs to be reached between additional whole-of-government process and allowing departments to fulfil their original duties (Mckenzie & Kuehl, 2021).

Political will is essential if a government is to change from a silo to a coordinated approach to policymaking. Leadership and accountability at the top are required, and support from the bottom is important to sustain the changes needed (Sianes, 2017). Political will is particularly important when creating a whole-of-government approach to policymaking because it will require training in monitoring, evaluation and learning practices to resolve policy conflicts early in the process, to ensure that policies can be adjusted when new information becomes apparent and to extract good practices which can be shared among other departments (Sianes, 2017). Further, it is important to recognise that perfect coherence is unrealistic, and a certain degree of incoherence is inevitable (Carbone, 2008).

While 100% policy coherence may be unrealistic, taking a PCSD approach will enable central leadership that increases accountability and responsibility for all departments and levels of government and encourages coordination with stakeholders (Mckenzie & Kuehl, 2021; Sianes, 2017).

2.5 Operationalisation

This thesis examines Australia's approach to sustainable development policy, with a focus on climate change and coal mining. Considering the policy challenges Australia faces as a federation, PCSD provides a lens in which to assess the coherence of the country's SDGs. By using the PCSD framework's eight principles as a guide, I wish to identify specific aspects of policy coherence framework that have been implemented at the state and federal levels of government. I will then be able to examine similarities and differences between levels of government and the extent to which there is policy coherence for sustainable development between the state and federal levels. I expect to discover the main barriers for coherent policymaking in Australia and if and where there is room for improvement for achieving the SDGs. Overall, by using PCSD I aim to determine the extent to which policy coherence is present and if coherence or a lack thereof affects Australia's ability to achieve the SDGs. This is undertaken through an analysis of policy documents and interviews at the state and federal levels.

This chapter has presented sustainable development, governance, policymaking, and policy coherence. Sustainable development theory focuses on three pillars: economy, society, and the environment. It emphasises that progress in one area should not come at the expense of another and that the international community needs to promote a liveable planet for present and future generations (WCED, 1987). Considering the broad nature of the three pillars, governance is essential to meet the 2030 Agenda. PCSD is explored as a framework and tool to manage governance challenges of sustainable development such as trade-offs. Achieving policy coherence is particularly challenging for the SDGs in a federation where they may be limited coordination between levels of government, departments, and stakeholders.

Chapter 3: Methodology

This chapter presents the research design, case study and methods used in my thesis. The case is Australia and the Australian state of Tasmania. The thesis examines Australia's capacity to achieve sustainable development through a policy coherence lens. The research design is qualitative using document analysis and interviews. This chapter addresses the processes used to collect, store and code data; I then justify my choices of methods and case. Further, I reflect on challenges and ethical concerns encountered while writing my thesis, including the impact of COVID-19 and how I managed the challenges.

3.1 Research design

I adopted a qualitative approach in my research. Qualitative research involves delving into social complexities to explore and understand experiences and processes within society and aims to thoroughly understand a phenomenon (O'Leary, 2017). A qualitative approach was relevant to my thesis as I examined the complex issues of achieving sustainable development in a fossil fuel-dependent country and the relationships between significant stakeholders: governments, lobby groups, and civil society. The study applied a qualitative analysis to documents and interviews. Using both document analysis and interviews aimed to produce a comprehensive thesis that avoids the shortcomings of a single method design. Further, data triangulation played an important role in my research design. Data triangulation is collecting information from multiple sources to validate a finding (Yin, 2014). Using triangulation has allowed my findings to be supported through various sources, adding to the validity of the research. This provided confidence that my research has provided accurate details of the case study and enhanced the integrity of the data.

3.2 The case study approach

Case studies are used in many disciplines and can therefore have different definitions; however, they often focus on studying a real-life situation (Thomas, 2011). I have followed Simon's (2009) definition, which describes a case study as "an exploration from multiple perspectives of the complexness and uniqueness of a particular project, policy, institution, program or system in a real-life context" (p.21). Case studies allow for

flexible data collection, multiple sources of evidence, and in-depth and contextual investigation into a phenomenon, creating increased knowledge of the phenomenon (Rowley, 2002). However, case studies are argued to lack rigour; they can result in unreadable documents, take too long and be unable to generalise (Yin, 2014). These concerns raise issues of validity and reliability of the research (Yin, 2014). Validity and reliability are essential for producing quality data. Validity refers to whether the data collection method is appropriate for answering the specific question (Tight, 2017). Reliability is if the same result is consistently achieved using the same method (Tight, 2017). To address validity and reliability concerns, I have used document analysis and interviews to ensure the study is comprehensive. Further, data triangulation has assisted in promoting reliability and validity by ensuring my findings were supported by multiple sources.

3.2.1 Australia

Australia is rich in fossil fuel resources, and the fossil fuel industry has expanded at the expense of the environment, notwithstanding the harmful environmental impacts of fossil fuels and large quantities of alternative energy sources available in Australia, such as wind and solar (Griffith, 2022; Kallies, 2021). Australia's reliance on fossil fuels as an export commodity and energy source has informed the country's federal policy and engagement in international agreements such as the Conference of the Parties (COP). For example, at COP26 in Glasgow 2021, the international community agreed to phase down unabated coal as part of the Glasgow Climate Pact (United Nations 2021). Australia decided to invest in renewable energy while simultaneously supporting the fossil fuel industry, with no new policies dedicated to phasing down unabated coal (DISER, 2021a). Australia's commitment to fossil fuels has received criticism from the media, national governments, and civil society, who urge the Australian government to take a more active role in international agreements and call for urgent action on climate change (Climate Council, 2021).

Australia has displayed little commitment to climate action in response to the various international agreements on climate change since the 1970s (Christoff, 2021). For example, from the first UNFCCC in 1992 to 2007, Australia had a conservative government, the Liberal-National Coalition (the Coalition) (Talberg et al., 2016). In this

time, Australia signed but did not ratify international climate change agreements; this meant they supported the agreements in principle but were not required to produce emissions reduction targets (Talberg et al., 2016). From 2007 to 2011, Australia had a centre-left wing government, the Labor Party, and a Labour-Greens Government from 2011 to 2013. These years were shaped by climate action, international climate change agreements were ratified, and climate change initiatives were introduced (Talberg et al., 2016). However, progress made during this period was dismantled in 2013 when the Coalition returned to power (Talberg et al., 2016). The Coalition's inaction on climate change was further represented at COP21 in Paris 2015. The Australian Government stated that it would not reduce coal mining, and emissions reduction would be achieved by technology such as carbon capture and storage (CCS) and hydrogen (Crowley, 2021). At COP25 and COP26, Australia won the 'Fossil of the Day' award from environmental organisations for showing a lack of ambition for climate action, evading its responsibility as a wealthy nation and being a significant climate polluter (Crowley, 2021).

Additionally, Australia faces severe consequences from climate change such as bushfires, droughts and floods which makes their position as a climate change laggard curious. From late February to early April the east coast of Australia experienced severe flooding, the area had a year's worth of rainfall by the 7th of April 2022 (Hanrahan, 2022). Many people died and thousands were left homeless, and it will cost billions of dollars in recovery (Hanrahan, 2022). Floods and other disasters that Australia faces yearly are exacerbated by climate change and coal mining one of the biggest contributors to this. However, Australia continues to promote coal as an energy source when there is substantial wind and solar resources that could be exploited to create more sustainable energy. Developing the renewable energy industry would help to further other areas of sustainable development, not just climate change action. For example, it would create jobs and profitable export industries, furthering SDG 8 (decent work and economic growth). Renewable energies would help to reduce inequalities; investment in renewable energy will drive down the cost of electricity giving more people access to clean energy, advancing SDG 7 (affordable and clean energy) and SDG 10 (reduced inequalities). There would be health benefits associated with transitioning to renewable energy such as clean air, and water which will help to pursue SDG 3 (good health and wellbeing). Finally using renewable energy in place of fossil fuels will help to preserve Australia's natural

environment which will enhance SDG 14 (life below water) and SDG 15 (life on land) (Griffith, 2019, 2022; Wilson, 2021).

Australia has a lot to gain from pursuing climate change action, yet the country remains a climate change laggard. Australia's position as a climate change laggard makes it an interesting case to study, considering the country's abundance of renewable energy and severe climate change consequences. Australia has a strong fossil fuel mining industry, particularly coal, which heavily impacts climate change policy. Australia's lack of commitment to and leadership for climate change action provides a good case study for investigating sustainable development more generally and discovering how and to what extent policy coherence or the lack thereof plays a role in Australia's position as a climate change laggard.

3.2.2 Tasmania

Onshore mining in Australia is under the jurisdiction of each state government, whereas climate change policy is a shared responsibility of all three tiers of government (Federal, State, and Local). It was appropriate to narrow my case to a specific state to gain a localised perspective on climate change policy. Tasmania is promoted as clean and green for tourism, agriculture and fishery purposes (Tourism Tasmania, 2022). Outdoor attractions, particularly wilderness hiking and mountain bike riding, as well as clean air and fresh produce, are drawcards used by the tourism industry (Tourism Tasmania, 2022). Tasmania also has a long history of environmentalism. The world's first green party is from Tasmania, the United Tasmania Group was founded in 1972, and the state is home to one of Australia's most significant environmental movements. (Milne, 2006). In the 1970s, the Tasmanian Hydro-Electric Commission and the Tasmanian Government planned to dam the Franklin River (Griffiths, 2018). The river is of cultural and environmental significance. It is surrounded by untouched Huon Pine and Myrtle Beech Forest, and the area is home to the Kutikina Cave and Deena Reena Cave, where the southernmost humans on earth stayed during the last Ice Age (Griffiths, 2018). Unified action from the United Tasmania Group and other environmentalist groups stopped the damming of the Franklin River and led to it being classified as a World Heritage Area (Brett, 2014; Kellow, 1989). Additionally, the state has used hydropower

for over 100 years and currently, wind and hydropower make up a substantial amount of Tasmania's electricity use (Posner & Graham, 2021).

While Tasmania's identity is tied to its environmentalism and renewable energy, mining is a prominent industry. The major commodities extracted in Tasmania include copper, coal, lead, iron, tin, zinc, and coal (MRT, 2022b). In 2020-21, Tasmania's exports reached $4 billion, of which the mining and minerals sector contributed 63% (MRT, 2022b). The government actively supports mineral exploration through grants, subsidies, and initiatives. Coal mining does not contribute to the state's export earnings. There are three coal mines in Northeast Tasmania run by Cornwall Coal (Mining Link, 2022). The coal extracted from the mines is used by Cement Australia's cement manufacturing facility and Norske Skog's paper manufacturing facility, both located in Tasmania (Mining Link, 2022). Tasmanian Government involvement in the coal industry is not as prominent as at the federal level of government. The latest significant government interaction with the coal industry was in 2019, when the government gave two coal exploration subsidies to coal companies to identify possible new mining opportunities (Minshull et al., 2019).

Considering Tasmania's identity tied to environmentalism and clean energy, it is interesting that coal mining, albeit at a small scale, continues. This motivated my choice to use Tasmania as the state level portion of my case study. Australia was chosen as my case study for its position as a climate laggard, and its commitment to coal mining. Studying Tasmania's progress on climate change policy in reference to Australia allows me to understand the extent which policy coherence exists at each level of government and how this affects the government's ability to achieve sustainable development policy. Finally, I am Australian, and I grew up in Tasmania; I am familiar with the politics at each level of government and have had access to data and stakeholders as well as a personal interest in the case.

3.3 Covid-19 and international fieldwork

Covid-19 presented many challenges through the data gathering phase of my research. Studying in Norway but using Australia as a case was good in some ways; as mentioned above, I am Australian, so it is a familiar case. However, since the beginning of the

pandemic, Australia has had strict border rules and travelling back for fieldwork was logistically and economically challenging. Regardless, I was able to enter Tasmania with the condition of one week in quarantine. I also travelled during the Christmas period, so I had to consider public holidays and family time when approaching respondents. This often meant there was only a small window to meet people, and I had to remain flexible. Overall, I was in Tasmania for five weeks, including one week in quarantine. Considering the loss of a week, the busy Christmas period, and covid, I still managed to conduct several interviews and travel to the coal mining area.

3.4 Secondary data

Document analysis is a research tool for collecting, reviewing, reading and interpreting documents to understand and develop knowledge (O'Leary, 2017). It is considered valuable as the data is generally stable and accessible and there is often a high availability of data in the public domain. Document analysis has a lack of interference from external actors, and it is less time-consuming than other methods such as fieldwork (Bowen, 2009). However, when using document analysis, there can be selection bias, documents can be difficult to access, and can lack adequate information. It is important to consider the limitations of document analysis to ensure that research is valid and reliable (Bowen, 2009).

My initial analysis consisted of documents regarding sustainable development, climate change, governance, and the fossil fuel industry in the Australian context from the United Nations, the Organisation for Economic Cooperation and Development, the Climate Council and Australian government websites. The documents included SDG Index and Dashboard Reports, the 2030 Agenda, Governance as an SDG Accelerator, the Paris Agreement, Our Common Future, Better Policies for Sustainable Development, Emissions Reduction Plan, Climate Change (State Action) Act 2008, and Australia's Voluntary National Report. These documents provided me with a clear understanding of sustainable development in Australia and the main actors involved in sustainable development policy.

Media sources from the Australian Broadcasting Corporation (ABC), the Guardian, and the Special Broadcasting Service (SBS) from 2015 to 2022 provided information on

current events and the perception of sustainable development in Australia; this was particularly useful in the aftermath of COP26 when Australia was heavily criticised for their approach to climate change policy. I used journal articles from the same period to gain insight into the main debates within sustainable development and fossil fuel mining and the major challenges within this field. I limited them by filtering my search to development, social science, and policy journals. When narrowing my research to Tasmania, media articles and official documents were beneficial. I assessed the current mining and climate change legislation via the government website. Media articles from 2015 to 2022 provided insight into contemporary mining and climate change debates. One area of literature which was less accessible was information from Cornwall Coal and the companies that use their coal, Cement Australia, and Norske Skog. It was challenging to find information regarding the size of the mining operations, how much coal the companies use and if they had emissions reduction plans or renewable energy transition plans in place.

3.5 Primary data

Interviews were my main source of primary data. O'Leary (2017, p. 239) describes interviewing as "a method of data collection that involves researchers seeking open-ended answers related to a number of questions, topic areas or themes." The interviews conducted in my study were qualitative, one-on-one semi-structured interviews. They followed a flexible structure, starting with a set of questions and shifting to adapt to the respondent's knowledge base. This resulted in the intended data collected and unexpected data which was useful for further research. The interviews aimed to gain perspectives from stakeholders about the coal mining industry and sustainable development. My interview guide varied depending on the stakeholders. However, in general my questions centred around awareness of the coal mine in Tasmania, perception of Tasmania's current climate change policy and the role of the government and other stakeholders in sustainable development. If the respondent had any overarching concerns regarding climate change and coal mining in Tasmania and Australia, these were discussed more generally. The interviewees are categorised into groups in table 3.1.

Group	Number of respondents
Tasmanian residents (referred to in text as, Tas resident #)	15
Fingal Valley residents (referred to in text as, Fingal resident #)	3
Civil society organisations (referred to in text as, organisation #)	2
Ex-state government mining regulator	1

Table 3.1: Interview respondents

I found the snowballing method beneficial for identifying the Tasmanian residents group. Snowballing involves building a sample through referrals (O'Leary, 2017). As I am Tasmanian and was concerned about sampling bias, I found the snowball method valuable. It meant I could use my network to obtain initial respondents and get referrals for other respondents. The Tasmanian residents group was the largest as this was the most accessible group of people. I was staying in the capital city of Hobart for several weeks; I had time to use my network and conduct several interviews. I spent approximately one week contacting respondents and two weeks conducting interviews. I did not have a strict criterion for this group, they needed to live in Tasmania, and I inquired about their age to ensure I had a representative sample of the broader demographic. For the other groups, ex-state government mining regulator, Fingal Valley residents, and civil society organisations, I did purposive sampling where the respondents were chosen based on their knowledge (Schreier, 2018). I travelled to the Fingal Valley and spent two days there to observe the area of the coal mines and interview residents. To identify residents, I researched the area and found a community history group, I contacted the group and interviewed three people who work for the group.

From my background research, I identified civil society organisations involved in coal mining and sustainable development in Tasmania. I approached three organisations and was able to secure interviews with two of them. The ex-state government mining regulator is a close member of my family. I am aware of the pitfalls of having a close relationship with a respondent. However, I believe the respondent was too valuable not to use as it provided insight from a perspective I could not get otherwise. The interviews

ranged in time depending on how engaged the respondent was in coal mining and climate change. Some interviews required direction and prompting depending on the awareness of things like the SDGs and coal mining. All interviews were conducted in person and were anonymous. If consent was granted, I recorded the interview; otherwise, I took notes. After the interviews, I wrote my notes as soon as possible to ensure I did not misrepresent any information. Overall, I had 21 respondents; however, I would have preferred a greater variety. For example, the Tasmanian Minerals, Manufacturing and Energy Council, Norske Skog and Cement Australia would have been beneficial to interview. I could have gained their perspective on coal mining and emissions reduction plans specific to their context.

3.6 Data analysis

I undertook content and thematic analysis for documents and interviews and used data triangulation to support my findings through various sources. Content analysis involves organising information into categories related to the central questions of the research and identification of relevant parts of the text (Lewis-Beck et al., 2004). Thematic analysis involves forming patterns and creating categories based on the characteristics of the data to identify themes important for the study (Lewis-Beck et al., 2004). I used NVivo to code my data, NVivo is a qualitative data analysis computer software (University of Oslo, 2022). For the interviews, I drew common themes from the results and coded each interview according to those themes; some included 'government involvement', 'climate change urgency' and 'SDG awareness'. Coding documents focused on content analysis, where I categorised the documents according to my research questions. For example, policy documents were organised into categories such as 'horizontal policy alignment'; by identifying if policy documents expressed collaboration, I could then assess the level of policy coherence present. Some thematic coding was also used for documents to identify common debates; this was particularly useful with media documents to identify common criticisms of government involvement in the fossil fuel industry and climate change policy.

3.7 Challenges and ethical concerns

This section explores challenges and ethical considerations of positionality and bias. Firstly, it is important to acknowledge that this study was approved by the Norwegian Centre for Research Data (NSD). All data from interviews were anonymised and stored within NSD guidelines.

3.7.1 Positionality and bias

Positionality is "the stance or positioning of the researcher in relation to the social and political context of the study—the community, the organisation or the participant group" (Coghlan & Brydon-Miller, 2014, 2). Positionality affects the research process in terms of how the research problem and questions are constructed, who is invited to participate in interviews, how findings are presented, and whether the researcher is an insider or outsider (Coghlan & Brydon-Miller, 2014). I undertook my empirical research in Tasmania; as a Tasmanian, this gave me a unique understanding of Tasmania's history of environmentalism and mining. When conducting research through interviews, being an insider can be advantageous because there is often a higher level of trust between researcher and respondent (Lewis-Beck et al., 2004). I found being an insider valuable because, as a Tasmanian, I understand the political context, current and historical climate change, and coal mining debates, I can relate to the citizens, and I have a genuine interest in Tasmania. This meant conversation could flow easily, and I could engage in what the respondent was saying, which allowed for honest conversations.

One of the main disadvantages of being an insider is researcher bias. In this context, bias refers to when a researcher brings their own experiences, ideas and judgements to a study, and the presence of bias can cause research to be invalid (Payne & Payne, 2020). Bias can occur throughout the research process; for me, it was most important to consider and be aware of selection and interview bias. Selection bias is when participants are selected out of convenience, and interview bias is when the interview's integrity is affected by bias (Payne & Payne, 2020). As I have a personal connection to Tasmania, I had to be aware of my bias and ensure that my opinions and experience did not affect the respondent or the results. Being aware of and reflecting on my positionality and potential biases meant I could acknowledge them and ensure they did not impede my research. I

did this by limiting the number of people I interviewed with whom I had personal relationships. I transcribed the interviews word for word so that no information was misrepresented. I also had to consider the ethical concerns of interviewing friends and family. To avoid my friends and family having any preconceived ideas or saying what they thought I wanted to hear, I made sure I did not discuss my thesis with them and encouraged them to be as honest and open as possible.

Chapter 4: Findings and discussion

In this chapter I present and analyse my findings through a policy coherence for sustainable development (PCSD) lens. Firstly, I explore sustainable development and climate change policy at the federal level and the role of the coal mining industry and lobby groups in creating climate change policy. This allows me to discuss the level of policy coherence present in federal policy and explain Australia's position as a climate change laggard. I then focus on Tasmania. I analyse Tasmania's sustainable development, climate change and coal mining policies to understand the State Government's position in these areas. I also analyse interviews with civil society to help answer my sub-question relating to Tasmania of why Tasmania continues coal mining and the extent to which there is political commitment and leadership in Tasmania to transition to renewable energy. Finally, I discuss Tasmania and Australia in relation to one another and identify any links that can be drawn regarding their policy approach to sustainable development and the impact of each level of government on one another when trying to achieve sustainable development.

4.1 The Federal Government's approach to sustainable development

This section explores the policy approaches of the Australian Federal Government to the Sustainable Development Goals (SDGs) and climate change. I examined the most relevant government policy documents through a PCSD lens to identify the positions and motivations of the government and determine the extent to which the government considers policy coherence in the policy process. During the period of the study, the Liberal-National Coalition (the Coalition) had held power since 2013 (AEC, 2019). The Coalition is an alliance of centre-right political parties, the Liberal Party, and the National Party. The Coalition's approach to sustainable development is demonstrated through the Voluntary National Review (2018) (VNR) and the Senate Inquiry into the United Nations Sustainable Development Goals (SDG) (2019). The Federal Government's climate change policy is explored through Australia's Long-Term Emissions Reduction Plan, A Whole-of-Economy Plan to Achieve Net Zero Emissions by 2050 (2021).

4.1.1 Federal engagement with the SDGs

Australia is a federation in which legislative powers are separated between the federal, state, and local levels of government (Althaus et al., 2020). Different levels of government are responsible for different issue areas outlined in the Australian Constitution, which came into force in 1901 (*Constitution Act 1977* pt V s 51). The Constitution does not outline more recent sustainable development-related issues, including climate change. Cooperative federalism is often used for non-defined policy areas, which means that all levels of government can make policy and are expected to coordinate (Kallies, 2021). However, if cooperative federalism is not practiced, it gives way for disjointed climate change policies between levels of government and across departments, enhancing the need for vertical and horizontal policy alignment. While Australia strives for a whole-of-government approach to policymaking, in practice, this is not always the case, as demonstrated with the SDGs. Each goal is the responsibility of the relevant government department and level; there is no national requirement for each department to engage with the goals or coordinate with other departments and levels of government (DFAT, 2022). Therefore, it is up to each department and level of government to practice cooperative federalism and avoid inconsistent and incoherent sustainable development policy (DFAT Committee, 2019).

The Australian Government Department of Foreign Affairs and Trade (DFAT) is the leading department for addressing the 2030 Agenda (DFAT, 2022). In 2018 DFAT produced a Voluntary National Review (VNR), presented at the United Nations High Level Political Forum in New York, which outlines Australia's commitment to the 2030 Agenda. It expresses that Australia's primary value of 'a fair go' is consistent with the SDG principle of 'leaving no one behind' (DFAT, 2018). The value of 'a fair go' is the idea that everyone should have a reasonable chance of opportunity and that they will be treated equally (DFAT, 2018). Like 'leaving no one behind', it is a call to action for fairness, justice, and equality of opportunity; the Prime Minister at the time stated, "at the heart of the Goals is the belief in 'a fair go for all' – nothing could be more Australian" (DFAT, 2018, p. 6).

4.1.2 Progress on the SDGs

The VNR outlines Australia's success in SDG 6 (clean water and sanitation) and SDG 8 (decent work and economic growth). SDG 6 is important for Australia as it is the driest inhabited content on earth (DFAT, 2018). The National Water Initiative is Australia's key water policy framework. It provides water management principles and governance arrangements that draws on all levels of government to work towards common goals on water management. Investment in infrastructure and water efficiency programs has increased the volume of water availability and productivity (DFAT, 2018). Australia has also worked to share water science, technology and management expertise to help other countries reach SDG 6; "Sharing Australia's expertise in managing water scarcity has never been so critical with the world facing a projected 40 per cent freshwater shortfall by 2030" (DFAT, 2018, p. 48).

Australia has also excelled in SDG 8:

> Australia's economy is strong and currently in its 27th consecutive year of growth. Australia's macroeconomic policy framework, combined with a substantial natural resource endowment, a flexible labour market and a skilled workforce, has laid the foundation for sustained economic growth and high levels of employment (DFAT, 2018, p.59).

The VNR expresses that free trade and open markets are an important part of the country's economic growth, along with the mining boom which has been consistent since the early 2000s (DFAT, 2018). To assist displaced workers the government has a number of reforms and initiatives, such as, promoting investment, innovation, and entrepreneurship, including, reforms to corporate tax, investments in innovation, science, telecommunications and transport infrastructure, and streamlining of business regulatory processes (DFAT, 2018). These actions aim to ensure the country sustains their economic growth and to ensure no one is left behind.

Rather than expressing challenges within specific SDGs, the VNR outlines challenges in identifying datasets. Some of these challenges include, the diversity of potential data providers, datasets can be spread across several Australian jurisdictions, and the number of SDG Indicators that have not yet accepted methodology for collection (DFAT, 2018). To address these challenges DFAT has funded an SDG data platform for data collection

against all 232 SDG indicators (DFAT, 2018). The platform provides a single point of access to find out about the Australia's progress on SDG indicators (DFAT, 2018). The platform, however, does not include requirements of governments, departments, and stakeholders to report on SDG progress.

4.1.3 Governance for the SDGs

In addition to shared values, the VNR affirms that many Australian policy and planning objectives are aligned with the SDGs. This is demonstrated in SDG 13 (climate action). Various government initiatives address areas of climate change consistent with SDG 13. These include, the National Climate Change Resilience and Adaptation Strategy, which guides adaptation to climate change, the Australian Government Disaster and Climate Resilience Reference Group, which considers the possible risks from climate change and natural disasters, the Commonwealth Scientific and Industrial Research Organisation's (CSIRO) Sustainable Futures education programs operating in primary and high schools across Australia providing education and training to assist Australians in how to respond to climate change (DFAT, 2018). These initiatives align with SDG target 13.1 strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries, and SDG target 13.3 improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, and impact reduction and early warning (UN, 2022b). This provides an example of how the SDGs are aligned with pre-existing policies and initiatives and is the basis of why federal the government has not formally enshrined the SDGs into law or considered them in the national budget.

The decentralised approach has been criticised for risking the replication of existing silos between agencies and failing to identify and address potential synergies and trade-offs between the goals. The Australian Council for International Development (ACFID) noted that, "Given the interconnected nature of the 17 goals, lack of progress in one area has the potential to undermine the whole. Implementing the 2030 Agenda will entail breaking down traditional silos for more cross-sectoral decision-making solutions" (DFAT Committee, 2019, p. 19). Submissions to the Senate Inquiry called for creating a national government secretariat to coordinate the implementation of the SDGs across all levels of government and with all stakeholders (DFAT Committee, 2019).

The VNR addresses issues of governance and implementation of the goals and why they have not been implemented into a national strategy. Coordinating action in a federal system can add complexity as the federal, state, and local levels of government have responsibility for separate policy areas. Mr Tinning (DFAT First Assistant Secretary) stated, "There is no national plan on the SDGs across government … They cover health, education, agriculture et cetera. The government's approach is for the relevant department to take forward that agenda within their space. So, there is no single plan." (DFAT Committee, 2019, p. 14). This decentralised approach is considered appropriate for the Australian context, where policy responsibilities are devolved to the relevant department and level of government.

The VNR however does acknowledge areas of coordinated government action and stakeholder engagement. For example, in terms of human rights issues, a large number of stakeholders are involved in delivering services to migrants, including the three tiers of government, service providers and other civil society organisations (DFAT, 2018). The VNR also outlined that many Australian businesses, community groups, universities, and scientific institutions have adopted the SDGs and are investing in implementing the SDGs at the local, regional, national and international levels (DFAT, 2018). However, the Senate Inquiry into the SDGs (2019) found that stakeholders who want to pursue the SDG require more engagement from the government (DFAT Committee, 2019). For example, Pujiman, a youth-run Indigenous cultural heritage preservation project, aims to address SDG 11 (sustainable cities and communities) (DFAT Committee, 2019). Pujiman has identified that "a lack of resources, underrepresentation in governance systems, and exclusion from negotiations and decision-making process have hindered the ability of young people to contribute to the agenda to their full potential" (DFAT Committee, 2019, p. 104).

Australia appears to be committed to the SDGs in principle. However, because of the country's political framework, alignment of aims, values and existing policies with the SDGs, there is no national plan for the 2030 Agenda, nor have the goals been recognised in a federal budget. While Australia's political framework is complex and creating a whole-of-government approach would require large scale organisational changes,

stakeholders have criticised the approach for not displaying policy coherence in terms of stakeholder engagement and financial support.

4.1.4 A technological approach to achieving net-zero

Australia's Emissions Reduction Plan (2021) (the Plan) acknowledges Australia's changing climate. Since 1910 the Australian landmass average temperatures have increased by 1.44°C, which has contributed to the country's natural disasters (DISER, 2021a). The Plan aims to achieve net-zero through the following principles: technology not taxes, expand choices not mandates, lower the cost of new energy technologies, keep energy prices affordable and energy reliable, and be accountable for progress (DISER, 2021a). It stipulates that 40% of emissions reduction will come from the Government's technology investment roadmap, 15% from global technology trends, 10 or 20% through offsets and 15% from further technology breakthroughs (DISER, 2021a). This approach involves $20 billion in government investment in low emissions technology until 2030, enabling new opportunities for investment and new sources of growth, including 100,000 new jobs in energy industries (DISER, 2021a). The government has further stated that mining fossil fuels will continue alongside investment in renewable technology to allow Australia to remain a major fossil fuel exporter (DISER, 2021a).

The Plan takes a technological approach to solving the climate crisis. The technologies focused on are, solar, energy storage, soil carbon, low emissions materials, clean hydrogen, carbon capture and storage (CCS) and carbon capture usage and storage (CCUS) (DISER, 2021a). Figure 4.1 outlines which industries each technology are planned to be used in.
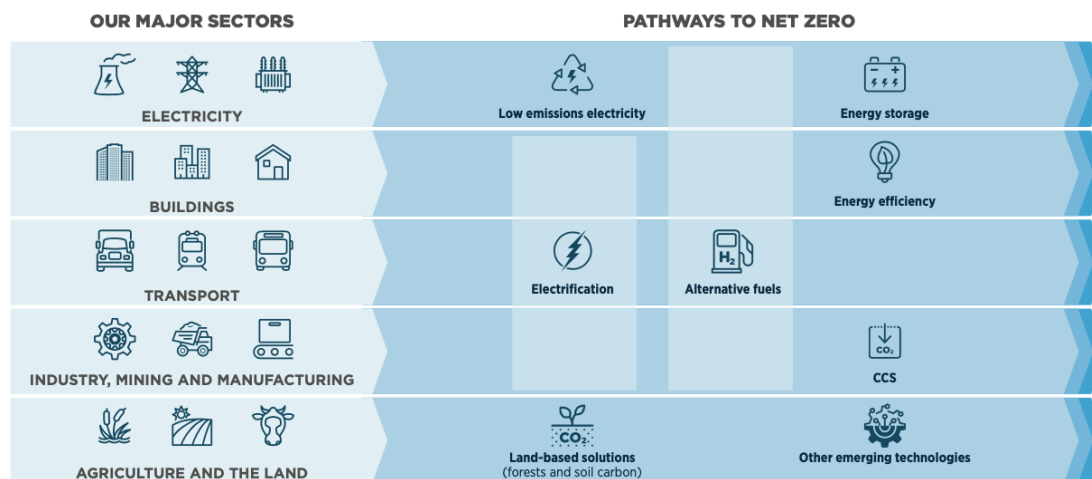
Figure 4.1: emissions reduction technologies by sector (DISER, 2021a).

The Plan promotes Australia's solar resources as some of the best in the world, they are essential for lowering emissions from electricity and the government supports technology advances and breakthroughs to achieve low cost solar (DISER, 2021a). For example, the Australian Renewable Energy Agency (ARENA) provides $40 million in funding to support the research and development of low-cost solar (DISER, 2021a).

Energy storage is essential to enable transition to renewable energy. As renewables like solar and wind are not always consistent, there needs to be efficient storage systems to contain energy for later use (DISER, 2021a). The government is supporting energy storage through investment in battery technologies, which includes, funding feasibility studies, demonstration projects, and innovative technologies. ARENA, Clean Energy Finance Corporation (CEFC) and the South Australian Government have invested up to $73 billion towards expanding the Hornsdale Power Reserve (DISER, 2021a). This reserve is currently the largest battery in the southern hemisphere, additional investment in the battery will enhance the ability to reduce the risk of blackouts and limit price instability (DISER, 2021a).

Soil carbon involves using soil to offset carbon emissions. Soil carbon draws carbon dioxide out of the atmosphere providing an additional way to offset emissions from hard to abate sectors such as industry and transport (DISER, 2021a). The Government is accelerating soil carbon technologies through research and development. This includes $36 million to the National Soil Carbon Innovation Challenge, which aims to identify

and fast-track low-cost, accurate technological solutions for measuring soil organic carbon (DISER, 2021a). Soil carbon may also provide extra income for farmers who undertake soil carbon projects on their land; the National Soil Strategy aims to help farmers and land managers monitor, understand their soil health, productivity and sequestration potential (DISER, 2021a).

Low emissions technologies for steel and aluminium aim to provide a decarbonisation pathway for hard to abate sectors (DISER, 2021a). This involves decarbonising the energy used in smelting and reducing emissions from the chemical process of converting ore to metal (DISER, 2021a). Development in technologies like clean hydrogen will help this process. The Government, industry and universities are investing more than $200 million towards the Heavy Industry Low-carbon Transition Cooperative Research Centre to assist in developing low emissions technologies (DISER, 2021a). By driving down costs of clean hydrogen, solar, and energy storage, the Government is laying the foundations for low emissions material manufacturing (DISER, 2021a).

Hydrogen is a clean fuel that can be produced from a variety of resources, such as natural gas, nuclear power, biomass, and renewable power like solar and wind (DISER, 2021a). Hydrogen aims to help decarbonise Australia's industry, transport and mining sectors used to power vehicles, generate heat and electricity, as an export commodity. The government is working to develop the hydrogen industry to benefit Australians and also to become a global player for hydrogen production by 2030 (DISER, 2021a). This process includes providing more than $300 million in funding for research, development and demonstration activities, and funding programs, including $464 million for the Activating a Regional Hydrogen Industry: Clean Hydrogen Industrial Hubs program (DISER, 2021a).

Large scale CCS and CCUS projects can underpin new low emissions industries (including clean hydrogen) and provide a potential decarbonisation pathway for hard-to-abate industries (DISER, 2021a). CCUS is among the most forthcoming options for mitigating emissions from industrial processes including, cement, steel, and fertiliser production (DISER, 2021a). Australia has an advantage in CCUS due to its abundance geological storage basins, many of which are close to high emissions producing

industries such as mining. The Australian Government is undertaking further analysis to inform Australia's potential to store CO2 in the basins. Figure 4.2 shows the potential areas for CCUS and CCS in Australia, it demonstrates that Australia has substantial capacity for CCS across the country if the basins are found to be viable.
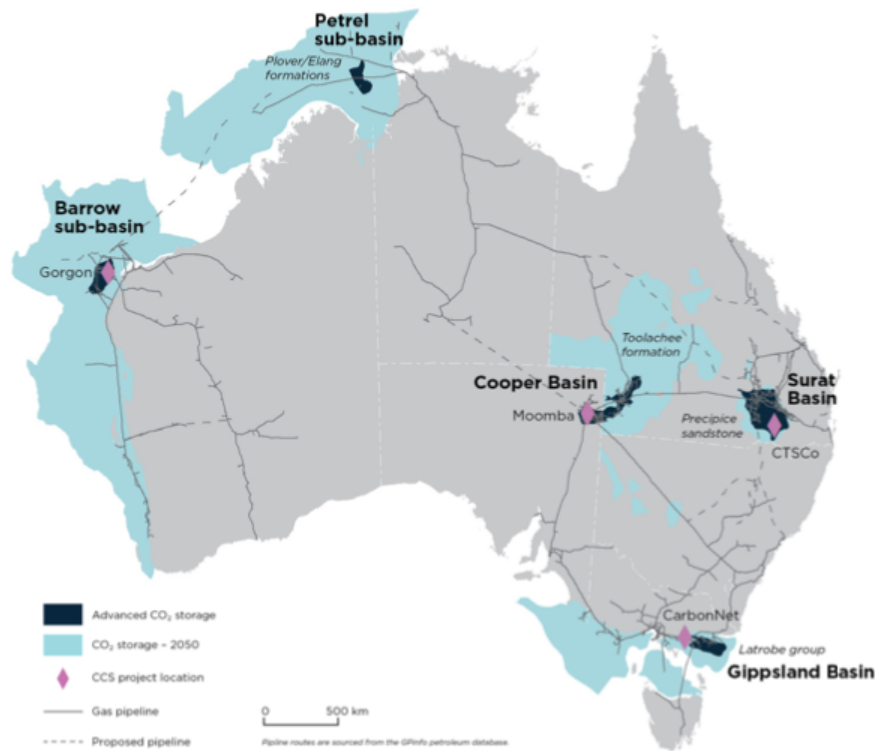
Figure 4.2: Australia's potential for CCS and CCUS (DISER, 2021a).

4.1.5 Implementing the technological plan

Energy Minister Angus Taylor (2021) has defended the modelling for the Plan, stating that driving down technology costs will enable Australia to achieve net-zero emissions without putting industries, regions, or jobs at risk. The modelling showed two scenarios: 'No Australian Action' and 'The Plan' in which it was found that The Plan was the most beneficial outcome (DISER, 2021b). 'The Plan' scenario follows the technology approach and states that Australia's gross emissions will fall between 25% and 35% of 2005 levels by 2050 (DISER, 2021b). The 'No Australian Action' scenario includes all countries except Australia, reducing emissions and no acceleration of technology. The modelling found that the No Australian Action scenario would not be favourable as it would not result in the same amount of emissions reduction as the Plan (DISER, 2021b).

Taylor (2021) explained that Australia did not legislate the Kyoto Protocol targets yet managed to beat those targets. Because of this experience, rather than legislating the Plan or emissions reduction targets, the government is developing policies to support several initiatives, including the Clean Energy Finance Corporation, Australian Renewable Energy Agency, and reforms to the Clean Energy Regulator. Consistent with the Emissions Plan, the 2022-23 Federal Budget allocates approximately $20 Billion to low emissions technology by 2030 (The Commonwealth of Australia, 2022). This included, inter alia, $300 million to support low emissions liquified natural gas, hydrogen, and carbon capture and storage, $247 million to support increased private sector investment in low emissions technologies, $148million to support investment in affordable and reliable power including microgrid projects, and $50 million to accelerate the development of priority gas infrastructure projects (Taylor, 2022).

The Emissions Reduction Plan represents Australia's latest climate change policy at the federal level. It focuses on reducing emissions through technological advancement. The Plan outlines funding for climate change initiatives which was supported in the 2022-23 Federal Budget. It demonstrates its support for the fossil fuel industry alongside emissions reduction to protect industry, jobs, and exports.

4.2 Discussion

Australia's VNR and Emissions Reduction Plan demonstrate Australia's response to sustainable development and climate change. Regarding the SDGs, Australia has allocated the goals to the relevant department and level of government which is considered favourable considering the complexity of a federal system. The SDGs align with Australia's values and pre-existing policies and therefore have not been legislated or mentioned in the national budget. Similarly, the Emissions Reduction Plan has not been legislated as the government believes it does not need the accountability that legislating targets offers, it is confident that emissions will be reached without legislation. It focuses on technology and the continuation of mining fossil fuels alongside emissions reduction to ensure exporting fossil fuels can continue, and industry and jobs are not lost.

4.2.1 Horizontal policy alignment for the SDGs and climate change policy

A central aspect of the policy coherence for sustainable development (PCSD) framework is a whole-of-government approach that includes commitment at the highest level of government, horizontal and vertical policy alignment, and setting and legislating targets beyond short-term electoral cycles (OECD, 2019a). Following a whole-of-government approach helps produce coherent policy as it enhances political commitment, long-term strategic vision, and policy integration. Findings from Australia's VNR (2018) and Emissions Reduction Plan (2021) suggest an absence of a whole-of-government approach to policymaking. For certain policies and projects, as shown for SDG 6 and 8, there are mechanisms in place to enhance collaboration between levels of government, departments, and stakeholders and initiatives for funding. This demonstrates a level of vertical policy alignment; however horizontal policy alignment does not appear. There is currently no requirement for monitoring or reporting on the SDGs, this means policies from different levels of government and departments are likely to overlap and potentially conflict, causing trade-offs. The SDGs are not incorporated into a national budget; this indicates a lack of long-term vision and commitment to the goals. Recognising the SDGs and practicing more policy coherence such as having them in the national budget or reporting requirements would enhance horizontal policy alignment and avoid trade-offs between goals.

4.2.2 Political commitment for the SDGs

Submissions to the Senate Inquiry into the SDGs (2019) revealed scepticism of the Australian Government's level of commitment to the SDGs and the effectiveness of its governance arrangements. Issues were raised about the lack of PCSD for the SDGs. A major part of this was confusion around the Federal Government's position on the SDGs. According to a submission from DFAT they are leading a process to ensure whole-of-government coordination for the 2030 Agenda. However, they also stated that they are not leading domestic implementing but rather the SDGs are decentralised to promote department ownership (DFAT Committee, 2019). The overarching leadership and responsibility for the 2030 Agenda is unclear and stakeholders have found it difficult to ascertain information about the where responsibility lies for the goals. This evidence suggests a lack of political commitment and leadership for the SDGs and a lack of

political will to implement a whole-of-government approach for the 2030 Agenda. These elements are essential for policy coherence and are clearly lacking at the federal level.

Stakeholder participation is also considered essential to enhance policy coherence and achieve the SDGs (OECD, 2019a). Collaborating with the public and private sectors ensures that citizens' needs are met when implementing sustainable development policy, consistent with one of the principles of the 2030 Agenda to 'leave no on behind'. The VNR expresses the importance of incorporating stakeholders in the implementation of the SDGs. However, the Senate Inquiry showed that stakeholders would like more government involvement and support to pursue the SDGs. For example, local community groups such as Puijman expressed that they are struggling to implement the SDGs because there is a lack of resources and underrepresentation in governance systems. Puijman, as an Indigenous cultural heritage preservation project, is significant to ensure the most vulnerable groups of society are not left behind. The Federal Government's lack of engagement with the SDGs and stakeholders is not indicative of the main principle of the 2030 Agenda to 'leave no one behind', a principle that the Australian government has supported. Other stakeholders raised concerns over the lack of a national planning tool to improve consistency between levels of government and between sectors. Monash University found that Australia performs poorly on measures of collaboration between business, community, academia and government sectors (DFAT Committee, 2019). This further demonstrates a lack of political commitment to the 2030 Agenda and to policy coherence.

4.2.3 The relationship between technology and the urgency of the climate crisis

The Federal Government's Emissions Reduction Plan (2021) represents Australia's climate change policy. The Plan prioritises several technologies to reduce carbon emissions. While these technologies are important to develop, carbon capture and storage (CCS) and hydrogen in particular should not be the sole action to reduce greenhouse gas emissions (Climate Council, 2021). Hydrogen is considered a clean fuel as it does not produce greenhouse gases when used and can be burned to make heat or used in a fuel cell to create electricity (Kurmelovs, 2022). However, Australia is currently using coal

to make hydrogen, indicating that currently, Australia's hydrogen is not clean and it supports the continuation of the coal industry (Griffith, 2022).

CCS involves capturing and storing carbon dioxide, it is possible to do this, but it should not be considered a serious emissions reduction solution (Griffith, 2022). The government argues they can develop technologies to provide affordable more renewable energy options. Griffith (2022) maintains that it is expensive and adding CCS to fossil fuels will inevitably increase the cost of the fuel. Anti-tax ideologies like that in Australia with a 'technology not taxes' mindset make it unlikely that there will be tax revenue to pay for CCS (Griffith, 2022). It is expected that CCS will be an expensive niche. CCS is further considered an unproven technology; it is yet to be at the final stage of development and commercialisation in Australia (Stayner, 2021). It is unclear how long this process will take, suggesting it is a long term solution, not one that reflects the urgency of the climate crisis (Stayner, 2021).

The Australian Government has been criticised for promoting these technologies as a delaying tactic and a way to continue the fossil fuel industry (WWF Australia, 2021). Griffith (2019) argues that Australia cannot bet its future on hydrogen and CCS; climate change requires more urgent action, and Australia has abundant sun and wind resources that should be exploited. Relying on technology that is not yet developed and that supports the coal industry suggests a lack of long-term vision and political commitment to emissions reductions and climate change action.

Australia's emissions reductions have primarily come from the land sector due to a decline of native forest logging since 2005; since then the vast forest reserves throughout the country have acted as a carbon sink and are relied on as an offset to meet emissions reduction targets (The Climate Council, 2019). Depending on land and forests to sequester carbon is not a long-term solution. Soil and vegetation in which carbon is stored are vulnerable to bushfires, droughts, and heatwaves which can trigger the release of significant amounts of carbon back into the atmosphere (The Climate Council, 2019). Further, to achieve net-zero by 2050, Australia plans to use credits from the Kyoto Protocol. Australia overachieved their Kyoto Protocol targets from a reduction of native forest logging, which meant large amounts of carbon emitted were offset in the forests,

leaving the country with emissions credits which they plan to use to meet the Paris Agreement; these have been referred to as 'carry over credits' (Crowley, 2021). Carryover credits have been criticised as cheating and irresponsible; the Kyoto Protocol is not relevant to the Paris Agreement, and carryover credits should not be permitted (Fernyhough, 2020).

While emissions in the land sector have declined, emissions from electricity, industrial process and transport have gradually been rising, indicating that there needs to be an emissions reduction plan specific for these sectors. Using CCS, hydrogen, and soil carbon to achieve emission reduction in these sectors suggests a lack of political commitment considering the urgency of the climate crisis and international pressure to reduce carbon emissions. Interestingly, the government is pursuing these technologies and nuances of carbon accounting when there is an abundance of renewable energy in Australia that would be quicker to develop and produce fewer emissions.

Policy coherence requires evaluating finances to decide how much funding is needed to pursue sustainable development. The 2022-23 Federal Budget was released in April 2022 and has received much criticism from civil society organisations that it has failed to deliver meaningful commitments to address climate change. Nicki Hutley (2022), Climate Councillor and leading economist, has calculated that 0.3% of total government expenditure for 2021-24 has been committed to climate change initiatives, falling to 0.2% in 2024-26. Further, much of the 0.3% funding was committed prior to the budget; the budget adds nothing new than what was already promised (Climate Council, 2022). Further, considering the billions of dollars in repair from bushfires and flooding each year, it is surprising that more financing is not allocated to address the root cause of climate change (Climate Council, 2022). Instead, funding is prioritised for technology that allows the fossil fuel industry to continue.

Australia's sustainable development and climate change policy at the federal level displays a degree of commitment. The Federal Government has acknowledged the SDGs and supports them in principle. There is an Emissions Reduction Plan to tackle climate change, which includes funding. However, the documents analysed suggest limited long-term vision, financial support, monitoring, stakeholder engagement, and leadership. An

absence of these elements suggests a lack of political commitment at the highest level of government and a lack of political will to create a more whole-of-government policy that satisfies vertical and horizontal policy alignment. This is particularly interesting considering Australia's renewable energy capacity and its increasingly frequent experience of climate-related disasters. However, the federal government's approach does not display urgency for climate change issues. Further, considering the various other areas of sustainable development that climate change action can support, such as health, access to energy, jobs, industry, sustainable cities, preservation of natural habitats and animal species it is surprising that the government is not taking advantages of the potential synergies.

4.3 The power of mining lobby groups on climate change policy

Mining lobby groups heavily influence the Australian Federal Government. Influence Map (2020) (a British think tank) found that the mining sector influences Australian politics in various ways: a revolving door between senior politicians, political staffers in the mining industry, election spending, public relations spin campaigns, and face to face ministerial access. They found that Australia's lobbyists are among the most dangerous to climate policy; the Minerals Council of Australia (MCA), which represents the mining sector, is the single largest negative influence on Australian climate policy (Influence Map, 2020). This section firstly explores the history of mining lobby group influence on government policy before focusing on the MCA. To explain the power of mining lobby groups, I have drawn on investigations from civil society organisations and the media.

4.3.1 The imbedded relationship between mining lobby groups and the Coalition Government

The power of mining lobby groups has been demonstrated throughout Australia's political history, particularly with a Liberal-National Coalition Government, as they share neoliberal values of free markets as the most-efficient allocation of resources (Pearse, 2007). During Prime Minister John Howard's terms in office from 1994 to 2006, he allowed the fossil fuel mining industry members in his official delegation to negotiate on the Kyoto Protocol (Hodder, 2009). During this time, a member of a mining lobby

group said, "We know more about energy policy than the government does ... We know where every skeleton in the closet is most of them we buried" (Hamilton, 2006, p. 2).

There were also close personal associations between the government and mining companies; Rio Tinto's (metals and mining company) Chief Technologist was Howard's Chief Science Adviser from 1999 to 2005, working for the government and Rio Tinto simultaneously (Hodder, 2009). The connections between the government and the fossil fuel industry allowed the industry to directly influence policy according to their values which prioritised business and economic growth over environmental concerns (Pearse, 2007). In 2007 there was a change of government to Labor and Labor-Greens from 2011 to 2013 (Talberg et al., 2016). The values and agenda of Labor and Greens are less aligned with mining lobby groups. During this period, the government succeeded in making progress on climate change policy with little direct influence from mining lobby groups. However, mining lobby groups used the media to influence the Australian public. From 2007 to 2013, public support for climate change policy decreased from 68% to 40%, and one contributing factor to this was the amount of anti-climate change media (McDonald, 2018). In particular, Murdoch owned media is unsupportive of climate change policy, often misreporting the science of climate change and supporting inaction on policymaking (Farrant et al., 2013). In 2012 a carbon tax was introduced, and 50% of articles about climate policy in Murdoch papers were negative, 40% neutral and 10% positive (Farrant et al., 2013). Despite the successful implementation of the climate change policy from 2007 to 2012, the Coalition won the next election in 2013 and dismantled the carbon tax and other climate change initiatives (Loynes, 2013). The Coalition Government have remained in government since 2013, and industry lobby groups have remained an influential actor in Australian politics.

4.3.2 The Minerals Council of Australia: using coal to reduce carbon emissions

The Minerals Council of Australia (MCA) is the main industry body representing companies that produce most of Australia's minerals, companies with an interest in the minerals industry and companies involved in mining activities (MCA, n.d.-c). The power of lobby groups such as MCA is verified by their close relationship with the government, specifically the Coalition. This is demonstrated by a revolving door between senior

politicians, political staffers in the mining industry, election spending, and face to face ministerial access (Influence Map, 2020).

The MCA acknowledge human-induced climate change and supports decarbonisation, as presented in their 2020 Climate Action Plan (MCA, 2021). The plan includes adopting the Towards Sustainable Mining Framework, which aims to help mineral and mining companies evaluate, manage, and improve their sustainability performance, guided principles of community and people, environmental stewardship, and climate change (MCA, 2021). The Climate Action Plan has three core objectives: enabling the potential of technology to decarbonise the minerals sector, increasing transparency in reporting, and sharing practical knowledge on climate responses (MCA, 2021). While MCA supports climate action and the Paris Agreement, they believe that climate change policy may restrict the ability to produce products, harming profits (MCA, 2021). They emphasise the important role coal plays in Australia. The coal industry employed approximately 50,000 workers in 2020, with another 120,000 indirect jobs (MCA, 2021). From 2019 to 2020, Australia exported $20.6 billion worth of thermal coal and $34.6 billion of metallurgical coal; the same year, the industry paid $5.2 billion in royalties to Australia (MCA, 2021). Further, in 2019 coal accounted for 68% of Australia's domestic electricity energy source (MCA, n.d.-a).

As MCA recognises the importance of the coal industry for Australian jobs, electricity and the economy, their Climate Action Plan focuses on using coal to achieve climate change targets (MCA, 2021). The MCA understands coal as a "cornerstone Australian industry built on the efforts of hard-working Australian with the majority in regional areas, it has a strong future which can meet the requirements of a modern economy" (MCA, n.d.-a). Australian coal is of high quality and can help reduce emissions through technological transformation such as CCS and hydrogen. MCA considers CCS and hydrogen the only technologies capable of decarbonising the minerals industry (Constable, 2019; MCA, n.d.-b). MCA favours CCS and hydrogen as they believe Australia is well positioned to produce it, given its significant coal resources. Coal is already being used in the decarbonisation process in the La Trobe Valley, Victoria, where hydrogen is produced from coal (Constable, 2020). Further, MCA explain that they are working on lower emissions coal plants. They promote high efficiency and low emissions

of coal-fired plants that operate at higher temperatures than traditional coal plants, which means fewer emissions are released throughout the process (MCA, n.d.-b). Therefore, coal can still be used as an energy source but with lower emissions.

MCA endorses the coal industry as an essential pillar of Australia's climate change plan and explores how coal can be used to further CCS and hydrogen technology. MCA's technological approach is consistent with the Federal Government's Plan to prioritise CCS and hydrogen to reduce emissions. The consistency between MCA and the government's approach to climate change indicates their shared priorities of keeping the fossil fuel industry alive, notwithstanding the urgency of the climate crisis and international pressure to reduce fossil fuel use. The relationship between mineral lobby groups such as MCA and the Coalition government has been examined by several NGOs and the media to shed light on the influence lobby groups have on climate change policy.

4.4 Discussion

Mining lobby groups such as MCA have influenced government for decades. This was demonstrated in the Howard era (1994-2006) when he allowed members of the fossil fuels sector in his official delegation to negotiate on the Kyoto Protocol. Lobby group influence continues today. In 2019, Greenpeace and investigative journalist Michael West investigated the influence of the coal industry in Australian politics to expose the networks behind the coal industry's power and how the coal industry is entrenched in federal politics. The report is based on interviews with political operatives, current and former staffers, executives of lobby firms and publicly available information about the companies (Greenpeace, 2022). They identified a strong relationship between the government and the coal industry:

> It's a network centred around the world's biggest coal companies, involving some of the wealthiest and well-connected people in Australia who use established relationships within industry groups, lobbying, and sections of the media to influence decisions at the highest level (Greenpeace Australia Pacific, 2019).

4.4.1 A revolving door between mining lobbies and the Coalition Government

During periods of a Federal Labor Government, the MCA has a less direct influence; they use connections with the media to further their agenda. This was shown from 2007 to 2012 when the media presented the carbon tax and climate change action in a negative light, resulting in a decrease in public support for climate change policy (Farrant et al., 2013). In comparison, MCA's influence is more direct when there is a Coalition Government. The investigation found examples of networks between lobby groups and the Coalition. Within a week of becoming Prime Minister in 2018, Scott Morrison appointed Jon Kunkle as his Chief of Staff (Greenpeace Australia Pacific & West, 2019). Kunkle is the former deputy CEO of MCA and lobbyist for Rio Tinto (Greenpeace Australia Pacific & West, 2019). Employees of MCA have also worked for government departments responsible for energy and the environment. In 2017, Sid Marris was appointed as Senior Adviser for Energy, Climate Change and Resources; he previously worked for MCA as head of their environment and climate policy (Greenpeace Australia Pacific & West, 2019). The current Federal Minister for Industry, Energy and Emissions Reduction, Angus Taylor, was a consultant for the MCA before entering parliament. He is also an anti-wind advocate; in 2013, he was a headline speaker at an anti-wind power rally (Greenpeace Australia Pacific & West, 2019).

4.4.2 Fossil fuel subsidies and political donations

Further, the Coalition government supports the fossil fuel industry through subsidies. In the 2020-21 financial year, approximately $10 billion was spent to support the fossil fuel industry Campbell et al., 2021). $7 billion of this was in the form of fuel tax credits to major fossil fuels users including 1.5 billion to coal and gas producers (Campbell et al., 2021). The Coalition Government receives substantial funding from mining lobby groups and mining companies. Donations have included anywhere from a few thousand dollars to $50,000 (Robertson, 2014). However, very little transparency around political donations makes it difficult to provide concrete examples. Greenpeace and West (2019) found major corruption risks within the Coalition Government due to the lack of transparency of donations from lobby groups and mining companies. Existing checks and balances have failed to provide accountability, and therefore, there needs to be

greater regulation to avoid risks of corruption (Greenpeace Australia Pacific & West, 2019).

Examining the influence of lobby groups helps to understand why Australia is a climate change laggard. The federal government is connected to lobby groups such as the MCA. They share a technological approach to emissions reduction that allows the coal mining industry to continue and there is a revolving door between the government and lobby groups. For example, the minister responsible for emissions reduction previously worked for MCA and a major mining company. This connection demonstrates potential conflicts; emissions reduction policy will likely be from the perspective of the mining industry. Lobby groups are embedded in the Australian Government, and this enforces government's non-committal attitude toward climate change policy. They have a mutually reinforcing relationship; the government can rely on political support from the mining industry, and the mining industry can be assured that policy will not hinder their business prospects. As the mining industry is one of Australia's largest industries, the government is interested in keeping the industry alive. Part of this includes not having a long-term vision and commitment to climate change policy.

The position of mining lobby groups in Australian Federal politics provides evidence of why there is a lack of policy coherence for climate change policy at the federal level. Groups such as MCA impact the amount of commitment and long-term vision the government has for climate change policy. Without commitment and long-term vision, other aspects of coherence are absent such as, financing, monitoring, reporting, and policy integration. Despite the urgency that the international community places on reducing coal mining as experienced at COP26, Australia continues to not only mine coal but are using coal in their emissions reduction plan. This indicates that the interests of the fossil fuel industry are being prioritised over commitment to meeting international climate change agreements.

4.5 The Tasmanian paradox: carbon negative and coal mining

Tasmania is an Australian leader in emissions reduction and has recently started to engage with the SDGs (Cox, 2021a). The state has been net-zero since 2015 and recently became carbon negative thanks to the vast forest reserves and large amounts of wind and

hydropower, which has secured Tasmania's image of 'clean and green'. Notwithstanding this image, Tasmania has had a coal mining industry since the mid-1800s. Currently, two manufacturing companies use coal to power their kilns. While their operations are small in the national context, it can be argued that the amount of renewable energy in the state makes it unexpected that coal is still used.

4.5.1 Tasmania's response to the SDGs

The Department of Natural Resources and Environment Tasmania (NRE Tas) is responsible for the sustainable management of the State's natural and cultural heritage (NRE Tas, 2022). In late 2021 the Department of State Growth undertook structural changes to create NRE Tas as a standalone department. All natural resources, forest management policy planning and regulation have been transferred from the Department of State Growth to NRE Tas (NRE Tas, 2021). Structural changes to NRE Tas reinforce the department's responsibility and commitment to environmental management and sustainability. The department acts as an overarching body to pursue sustainable development for the state's environment and cultural heritage. Under the new name of NRE Tas, they have developed a Strategic Plan 2022-2026. The Strategic Plan aims to support a sustainable Tasmania by enhancing the state's cultural and natural values and addressing all SDGs (NRE Tas, 2021). It recognises the importance of customers and stakeholders in delivering sustainable development and has five strategic priorities (NRE Tas, 2021). Firstly, empowering business and employment through sustainable growth of Tasmania's industries incorporates SDG 2, 7, 8, 9, 12, 13, 14, and 15. Secondly, the delivery of a regulatory system for industry, heritage, land, and environment incorporates SDG 1, 3, 6, 11, 12, 14, 15, and 17. Thirdly, the protection and strengthening of Tasmania's biodiversity, heritage, protected areas and recognition of Traditional Owners incorporates SDG 11, 13, 14, and 15. Fourth, world-class experiences of Tasmania's cultural and natural values includes SDG 8, 11, and 12. Finally, building a high-performance department driven by our people and systems, addresses SDG 4, 5, 10, 12, and 16 (NRE Tas, 2021).

As the Strategic Plan has only recently been developed, there is limited information on how the department will implement it and how the SDGs will be addressed. However, it represents the first time a Tasmanian government department has engaged with the

SDGs, so it can be seen as an important step in Tasmania's sustainable development journey. This was indicated by two civil society organisations interviewed. They both exhibited satisfaction with the Strategic Plan and the inclusion of the SDGs. Organisation 1 said, "For the first time SDGs seem to be official in Tassie, they haven't been up until now, the SDGs will make it harder for bad stuff to happen so it will be good for us." While it is an important step forward, there was marginal awareness of the SDGs within the Tasmanian community. Four out of fifteen Tasmanian residents interviewed were aware of the SDGs but were either sceptical of them or did not know exactly what they involved. One responded said, "it's an oxymoron, development and sustainability can't go together." (Tas res 5). While incorporating the SDGs by NRE Tas is a significant milestone for sustainable development in Tasmania, the limited awareness suggests little government effort to integrate the SDGs into society.

4.5.2 Tasmania's response to climate change policy

The *Climate Change (State Action) Act 2008* sets the Tasmanian Government's legislative framework for action on climate change. The Tasmanian Government's response to climate change is focused on emissions reduction pledges and targets, which are in line with the 2015 Paris Agreement to limit global warming to below 2°C and the Australian Government's commitment to reduce emissions to between 26 and 28% below 2005 levels by 2030 (Tasmanian Climate Change Office, 2017). Through these pledges and targets, the Tasmanian Government is committed to achieving net-zero emissions by 2050 (Clifton et al., 2021). Since a State Labor Government enacted the Act in 2008, there have been two significant amendments. In 2014, when the Liberal Party came to power, they repealed Divisions 3 and 4 of the original Act (Tasmanian Government, 2022). Division 3, Tasmanian Climate Action Council, established a council which included stakeholders such as scientists, businesses, government, and civil society. The Council aimed to advise the government on climate change issues (Tasmanian Government, 2022). Division 4, Reporting, included annual and biannual reports from the Council to the government to assist in creating climate change policy that responds to the most pressing climate change issues (Tasmanian Government, 2022). Further, the Act includes the requirement of a four-year independent review which examines how it can be amended to strengthen action on climate change. In 2021 the latest independent

review was conducted, which will likely result in further amendments to the Act (Clifton et al., 2021).

In the 2021 review of the Act, the Tasmanian Government acknowledged the importance of the increasing concerns about and the consequences of climate change, such as bushfires and drought (Tasmanian Climate Change Office, 2021). The government recognises that Tasmania has a unique low emissions profile compared to other Australian states due to the high proportion of renewable energy and native forests (Tasmanian Climate Change Office, 2021). This is reflected by Tasmania being the first Australian state to achieve net-zero in 2013, maintaining net-zero since 2015, and becoming carbon negative in 2022 (Uibu, 2022). The Tasmanian Emissions Pathway Review (2021) found that if Tasmania follows a business-as-usual approach to emissions reduction, emissions will stay below net-zero until 2025; however, due to the increased risk of bushfires, it is unlikely the state will remain below net-zero after 2025. Therefore, further action to reduce emissions across all sectors will be necessary (Tasmanian Climate Change Office, 2021).

The existing climate plan developed under the *Climate Change (State Action) Act 2008* was in place from 2017-2021. Its main goals were to achieve net-zero emissions by 2050 and for Tasmania to be energy self-sufficient by the end of 2022. It focused on building climate resilience, managing climate risks and promoting electric vehicles to reduce emissions in the transport industry (Tasmanian Climate Change Office, 2017). In the updated 2022-2025 plan the government amended the Act to legislate an emissions reduction target of net-zero emissions from 2030, a requirement of a climate action plan, an obligatory five-year state-wide climate risk assessment, and the completion of sector-based decarbonisation and resilience plans. However, the Plan does not include sector-based emissions reduction targets; it recognises that businesses and industries need sufficient time and support to plan, adapt and transition to renewable energy (Tasmanian Climate Change Office, 2021). The *Climate Change (State Action) Act 2008* is important as a legislative framework for Tasmania. It commits the government to act on climate change by law, and the process of a four-year review enforces accountability and the insurance that climate change policy will continue to evolve and strengthen as needed.

4.5.3 Position of the mining lobby group

The Tasmanian Mining, Manufacturing and Energy Council (TMEC) is the leading industry lobby group for the manufacturing, mining, and energy sectors in Tasmania. In response to the review of the Climate Change (State Action) Act 2008, TMEC delivered its submissions which set out their support of the net-zero target but not sectoral targets

> The reality is many industrial processes do not have technical nor commercial alternatives now. Closing a business could become the only means to achieve a reduction…Businesses and sectors should continue to set aspirational objectives (not targets) that will encourage businesses to be proactive and remain open to adopting technology when it becomes commercially viable (Mostogl, 2021, s ec.7)

TMEC further suggest a five-year rolling plan which predicts emissions and includes government incentives for businesses to reduce emissions (Mostogl, 2021, sec. 5),"The Tasmanian government could consider a scheme which offsets state taxes and charges in place for a business to invest in lower emissions technology."

Like TMEC, many Tasmanian residents interviewed expressed that the government could play a more prominent role in incentivising emissions reduction. For example, "With driving there are no economic incentives to stop using petrol cars" (Tas res 10). Others had concerns about the government's promotion of using carbon sequestration to meet climate change goals, "the use of carbon sequestration is an accounting trick, and we can't rely on that, we need to do more to produce less carbon not just sequester it" (Tas res 7). This is supported by the Independent Review of the *Climate Change (State Action) Act 2008*, which identified that forests are even more vulnerable because of climate change since bushfires emit a large amount of greenhouse gas emissions in one go. If this happens, it may be difficult to regain the net-zero status. The Independent Review and the two civil society organisations interviewed also expressed the need for more government leadership and incentives for low carbon solutions. Organisation 2 suggested improved leadership from all levels of government to encourage renewable energy transition, "Without clear leadership we will be unable to transition…[Tasmania] needs a strong federal commitment to reduce emissions." Organisation 1 also saw the need for federal government support, "We should have carbon sequestration funding

from the Federal Government's Climate Solutions Fund to protect existing high conservation value native forests."

4.5.4 Issues of urgency

Urgency for climate change has been a significant area of contention when it comes to international agreements, Australia has generally displayed a lack of urgency and has consequently developed the reputation as a climate change laggard. This appears to be present at the state level of government as well, "the transition to renewables should have started 20 years ago, before the climate crisis became more urgent, now it's like a race" (Tas resident 4). Another respondent addressed Australia's neoliberal position of limited government involvement and how this relates to the issue of urgency.

> The big issue is perception of urgency. Australia is leaving it to market forces and any money they put in is to keep mining going like with carbon capture. Australia doesn't see the problem as urgent, and that's the problem. (Tas res 6).

Whereas most respondents felt that climate change is an urgent issue and believed the government should be providing more leadership, several respondents were less concerned with climate change. "It's [climate change] a bigger issue for people living in places like New South Wales and Queensland which flood and have fires all the time" (Tas resident 9). Another resident acknowledged Tasmania's renewable energy success "It's [climate change] not on my radar, Tasmania appears to be doing well compared to many other" (Tas resident 15).

Some Tasmanian residents recognise the state's position as an emissions reduction leader and do not see reducing emissions as an urgent issue. But many residents believe that because the state has the capacity to take more climate change action, they should. These findings demonstrate that Tasmanian residents, civil society organisations and the Independent Review share similar concerns of commitment and leadership from the Tasmanian State Government and the Federal Government.

4.6 Discussion

Tasmania has engaged with both climate change policy and the SDGs at a state government level. The Strategic Plan outlines the department of Natural Resources and Environment Tasmania's (NRE Tas) commitment to all the SDGs. The *Climate Change (State Action) Act 2008* outlines an emissions reduction targets approach to climate change policy. Both these policies show degrees of policy coherence such as political commitment and long-term vision. However, there are many other aspects of PCSD that could be enhanced.

4.6.1 Policy coherence for the SDGs: to a degree

The 2022-26 Strategic Plan merged relevant natural resource and environment departments into one, which indicates aspects of a whole-of-government approach to sustainable development. For example, moving the agencies into a department focused on the natural environment and heritage rather than industry indicates a degree of political commitment to address environmental concerns from a natural environment perspective rather than an industry perspective. The NRE Tas has made a concerted effort to ensure consistency between departments that manage the natural environment by merging them and including stakeholders in the process. This suggests coordination within the department and stakeholders, promoting a collaborative approach to policymaking and vertical policy alignment. Incorporating the SDGs in a plan represents a commitment to the goals of NRE Tas and policy integration. These aspects of a whole-of-government approach are essential to achieve the SDGs. Coordination within the department, engagement with stakeholders, and policy integration aims to limit the possibility of trade-offs, helps to ensure all areas of society have their policy priorities addressed and creates accountability.

4.6.2 An absence of horizontal policy alignment for the SDGs

The Strategic Plan does not suggest horizontal coherence between state government departments. NRE Tas appear to be approaching the SDGs through a siloed approach. Other state departments have not engaged with the SDGs, and it is unclear if NRE Tas will consult other departments when implementing their Strategic Plan. Collaboration on issues of shared importance between state departments would enhance a whole-of-

government approach to sustainable development policy and limit unnecessary trade-offs. For example, NRE Tas is responsible for the sustainability of the natural environment and has incorporated SDG 13 (climate action), which addresses the need to reduce emissions. In Tasmania, transport accounts for a substantial amount of emissions. If the Department of Transport and NRE Tas collaborated on SDG 13 to consider how the transport industry can help sustain the natural environment, it could have a significant impact on meeting the SDGs. Alternatively, action on SDG 13 by NRE Tas may be undermined by the emission from the transport sector. The Strategic Plan also does not mention financing. A lack of financing will hinder the possibility of achieving the goals and indicates restricted political commitment. It is also unclear if monitoring and reporting will be implemented for the goals. Monitoring and reporting are vital to enhance accountability, transparency, and evaluation. Evaluation is important to improve and adjust practices as needed to ensure the SDGs are effective. Further, the limited awareness of the SDGs within the Tasmanian community suggests a lack of government effort to integrate the SDGs into society.

While the Strategic Plan is an important step forward for Tasmania, being the first state department to incorporate the goals, there is an opportunity for stronger policy coherence. For example, a plan that follows the timeline of the SDGs (until 2030), monitoring mechanisms to hold the department accountable for implementing the goals and creating coordinating structures that allow for horizontal policy alignment.

4.6.3 The shallow presence of policy coherence for climate change policy

The *Climate Change (State Action) Act 2008* appears to have several aspects of PCSD. The enactment of legislation establishes political commitment, long-term vision, and policy integration. Independent reviews indicate stakeholder engagement, monitoring, reporting and evaluation, keeping the government accountable. The reviews and the addition of five-year state-wide climate risk assessment plans in the Act demonstrate that the government understands the rapidly changing environment and the need to update laws in line with these changes. Tasmanian climate change laws are made considering international climate agreements and national climate plans. This indicates coherence between levels of government as it ensures progress in Tasmania's climate change targets does not undermine targets nationally or internationally. On paper, there appear to be

many aspects of PCSD; however, the depth of the government's commitment, long-term vision, and policy integration is questionable.

In contrast to the findings demonstrated in the *Climate Change (State Action) Act 2008* that suggest a high degree of policy coherence, literature and interviews suggest that the Tasmanian Government could make more ambitious climate change policy and strengthen commitment and leadership on climate action. Tasmania achieved net-zero several years ago, the net-zero by 2050 target outlined in the Act is therefore relatively unambitious and suggests complacency with emissions reduction targets. Emissions from the energy, agriculture, waste, and industrial process sectors have been stable since the 1990s; emissions reduction has come primarily from land use and forestry. Therefore, emissions reduction must be considered beyond these sectors (Clifton et al., 2021). The state government's repeal of Divisions 3 and 4 in the *Climate Change (State Action) Act 2008* just months after coming to power demonstrates the Liberal Government's absence of support for mechanisms that will ensure more coherent policy. Divisions 3 and 4 would have enhanced policy coherence by having legislated requirements to report on climate change progress and coordinate with stakeholders and government departments.

4.6.4 An absence of ambitious emissions reduction targets

While there is a natural disaster plan in the updated Act, it relies on carbon sequestration, which is at risk from bushfires and droughts. The literature and interviews showed that more could be done to lower emissions rather than rely on sequestration through sectoral targets, which were not included in the Act. The government's decision for no sectoral targets was supported by TMEC, which outlined that sectoral targets would be harmful to heavy industries like manufacturing as the only way to meet targets is to shut down operations. However, sectoral targets can be considered important as they enhance accountability for emissions and encourage companies to commit to climate action by having a plan to reduce emissions. Sectoral targets would, however, require expensive changes. For example, transport would need a transition to electric vehicles, and the manufacturing industry would need new technology that can run on renewable energy rather than fossil fuels.

To achieve emissions reduction in heavy industries, there needs to be increased political commitment and leadership. It would require government support through funding and incentives to reach targets. Interviews showed that while some people are not overly concerned with climate change issues, many are concerned by the lack of government involvement in incentivising people and businesses to move away from fossil fuels, for example, incentives to use electric cars and a lack of facilities such as charging stations. Tasmania could be more ambitious, given it is uniquely positioned to excel in emissions reduction because of the well-established hydropower industry. Additionally, the Act does not mention SDGs or SDG 13; this suggests a missed opportunity to engage with the SDGs. It is unclear why SDG13 was not incorporated into the Act at the last review.

Tasmania's *Climate Change (State Action) Act 2008* and the Department of Natural Resources and Environment Tasmania's (NRE Tas) Strategic Plan 2022-2026 demonstrate a degree of political leadership and commitment to sustainable development, climate action and emissions reduction. The Strategic Plan is the first time the SDGs have been included in a policy plan in Tasmania and the *Climate Change (State Action) Act 2008* legislates emissions reduction targets. Overall, while policy coherence is not completely absent in the Strategic Plan or the Act, there are clear ways that coherence could be improved. In particular, increased horizontal policy alignment between government departments, and coordination with other levels of governments as well as increased funding, monitoring, and reporting mechanisms would all help to enhance political leadership and commitment for the SDGs and climate change policy.

4.7 Coal mining

As previously discussed, Tasmania achieved net-zero in 2015, recently achieved carbon negative and has demonstrated a degree of political commitment to climate change policy through legislated emission reduction targets. Most of Tasmania's energy comes from wind and hydropower. However, Tasmania continues to mine coal to supply energy to two manufacturing companies, Cement Australia and Norske Skog. These companies use coal from Cornwall Coal's three coal mines in the Fingal Valley in Tasmania. Coal mining has decreased substantially in Tasmania in the last ten years, primarily due to a lack of market demand, the growing renewable energy alternatives, and public pressure to reduce fossil fuel mining.

This section begins with an outline of coal mining in the Fingal Valley and perspectives from Fingal Valley residents on coal mining. I then focus on government policy documents relating to mining. Finally, perspectives from civil society organisations, Tasmanian residents and an ex-state government mining regulator provide views on why there is still coal mining in Tasmanian, notwithstanding the abundance of renewable energy.

4.7.1 The Fingal Valley

The Fingal Valley is in the northeast of Tasmania and has a long history of coal mining; coal was discovered soon after European settlement in 1848, and Cornwall Coal began operations in 1886 (Fingal Historical Society, n.d.). Coal has primarily been used for industrial purposes; however, the coal industry has been declining in recent decades. I spoke with three residents of the Fingal Valley who have lived there between seven and sixty years. We talked about the impact of coal mining on the town and why coal mining is declining in the area. Fingal resident 3 explained that over ten years ago, Cornwall Coal was more prominent in society; they sponsored a football team and a Fingal festival. However, community development is no longer a feature of the company's operations due the small size of the mining.

The mine also does not pollute the area as much as it used to "When coal mining was more prominent some people didn't like it because there would be ash from the coal, and you'd have to wash your cars and houses all the time" (Fingal resident 2). Now, because the mine does not directly impact the area, resident 2 went on to say, "I am not concerned at all about the environmental impact, there is no more ash cloud and no fear of getting asthma, it used to be so much worse." The residents also talked of increased backlash from environmental groups. In the last few years, there have been people protesting mining coal. Resident 1, who has lived in the Fingal Valley for their whole life, said,

> In the last ten years they have talked of closing the mine, but nothing ever happens…the coal mining industry won't get bigger; it is likely to only get smaller and when there is enough capacity of renewables and push from other actors then the companies will stop using coal and the coal mine will close.

Gaining Fingal Valley residents' perspectives helps set the scene for my empirical research. It demonstrates the industry's decline over time and provides a local perspective on coal mining in Tasmania.

4.7.2 Government mining legislation and subsidies

The primary legislation for mining in Tasmania is the *Mineral Resources Development Act 1995*. Through the Act, the Department of Mineral Resources Tasmania (MRT) receives applications for mining leases, assesses them, and grants or denies them (MRT, 2022b). A mining company also must apply for a land-use permit to the local council and to the Environment Protection Authority (EPA) to assess the environmental impacts the project may have (MRT, 2022a). When granting a lease, the EPA consider issues of air, water and land quality, traffic impacts and noise levels, and waste management (EPA, 2022). Environmental concerns discovered by the EPA that are of national significance are referred to the Federal Government for assessment under the Environmental Protection and Biodiversity Conservation (EPBC) Act (1999*)*. The ex-state government mining regulator outlined that once the environmental assessment has been completed either by EPA or EPBC, the land use permit is granted with conditions to manage environmental issues. It is up to the goodwill of the proponent to follow the conditions and the government regulator to enforce them.

In addition to mining legislation, subsidies and initiatives have been developed to support the minerals sector in Tasmania. The state government worked with industry groups such as the TMEC to develop the Exploration Drilling Grant Initiative (EDGI) (Barnett, 2018). The initiative was established to support the development of new mining opportunities in Tasmania. Grants are given through the initiative fund up to 50% of direct drilling costs incurred on successful programs (Barnett, 2018). Exploration is considered an opportunity to realise the local economic and job benefits of the mining sector (Barnett, 2018). The program helps industry and investors to identify new and potentially profitable mining opportunities (Barnett, 2018). In 2019 two subsidies were given for coal exploration, one for $23,000 (Junction Coal) and one for $50,000 (Midland Energy) (Campbell et al., 2021). In addition to grants for exploration, the Tasmanian Geoscience Initiative is funded by the State Government and receives support from the Federal Government's Exploring for the Future Program (Barnett, 2021). This program

implements new geological and geophysical data to assist in finding minerals of the best quality and most in-demand (Barnett, 2021). Further, the state government provides the MRT with funding ($11 million in 2020-2021) for the department to assist existing and prospective mining companies by providing information on the geology and minerals (Campbell et al., 2021).

 The Tasmanian Government's role in the minerals and mining industry is to assess and approve or deny mining leases and provide funding and grants for research and exploration. These initiatives do not necessarily focus on coal; it is based on what is considered the most in-demand minerals that will be financially beneficial to the state, indicating a market-based approach to resource management.

4.7.3 Perspectives of coal mining and climate change from civil society

Understanding the civil society perspective, including non-governmental organisations and the public, is important to determine how much political leadership and commitment there is for climate change action in Tasmania. I interviewed several Tasmanian residents, two civil society organisations and one ex-state government mining regulator about their views on Tasmania's coal mining in relation to the climate crisis.

Tasmania has several mineral and mining initiatives to promote the industry; however, few are focused on coal mining. The major subsidies for coal mining were in 2019 from the EDGI. There was considerable civil society backlash to these subsidies as people did not want the government to support coal mining considering the harmful effects of mining on the environment. The Midlands exploration project was particularly controversial because the licences were on farmland. While a farmer may own the land, the government owns the minerals under the land, meaning that they can give the land to the mining companies if the mine is approved; this means farmers would lose their homes and livelihoods (Coulter, 2019).

> A lot of potential mining area is farming land, so if they are allowed to be mined, the farmers lose their land and livelihood. It might not come to anything, the minerals might not be good enough to do anything with, and then the miners leave it, and the land is ruined and can't be used (Tasmanian resident 13).

Organisation 1 also addressed the Midland case.

> In the Midland Coal company exploration issue, the government gave them money to help their coal exploration in the Midlands on farmland. We put up a good campaign against it, all these people that don't usually work together worked together there was an alliance of about 30 organisations as well as working with lots of indigenous peoples.

Whether or not the government continues to give out coal exploration licences after the community backlash from the two cases in 2019 is unclear. An ex-state government mining regulator shed some light on the government's position.

> They have been sitting on several large exploration release areas for a year or two. The quality and quantity of coal deposits in Tasmania doesn't make them very commercially attractive to develop into mines. When you add in extra transport costs and widespread community opposition, it seems a good idea for the government to keep a low profile on coal, for the time being.

This was demonstrated in Junction Coal's reason for not renewing their coal exploration license in 2020, "The small resource base, thermal coal prices, adverse publicity surrounding coal exploration in the region and COVID-19 pandemic-related uncertainty all contributed to non-renewal of EL1/2015" (Biggs, 2021).

Since 2019 it has been unclear how much involvement the government will have with coal mining and if they will promote it. The ex-state government mining regulator acknowledged, "The state government isn't currently doing anything to encourage coal exploration, but they haven't ruled it out either…they don't encourage the industries that use the coal to transition to renewables." This was also addressed by organisation 1 "the government isn't pushing for it [coal mining], but they aren't pushing against it."

When interviewing Tasmanian residents, most were unaware of the coal mine and were surprised that coal mining is present considering Tasmania's image as clean and green. However, there were mixed results for how concerned respondents were with climate change and coal's contribution to the climate crisis. Some believe that Tasmania's coal

mining operations are small with minimal impact. Tasmanian resident 8 said, "I am not concerned about the environmental impacts of coal mining in Tasmania, I more concerned about the bigger coal operations in Queensland…Tasmania has a lot of carbon sequestration." Resident 9 thinks we should be looking beyond fossil fuels to tackle climate change, "We need to look at the whole picture, it isn't just coal that contributes [to climate change], farming contributes as well. Need to stop other things, it's not all about mining coal."

Other respondents were confused by coal mining when considering Tasmania's renewable energy capacity. If there is the capacity to transition to renewable energy, then everyone should. Tasmanian resident 1 reminisced on their childhood in the west of the state in the 1940s. At this time, there was no alternative energy source to coal; they would pick up coal that fell off the trains and take it home to use. However, now there are alternatives available. This was also touched on by organisation 1.

> Coal isn't big in Tasmania but that doesn't mean it's right…why aren't they doing green cement, surely it would be a great candidate for green cement because it's small…Tasmania is one of the few places that could be totally 0 emissions.

Organisation 2 had similar views and supports the transition to renewable energy.
> Climate action is serious and urgent action should be taken, this means everyone should be transitioning, it would be better for people's health, provides energy security and helps the environment…Companies like Norske Skog and Cement Australia haven't transitioned because they are stuck in the status quo of using fossil fuels.

Civil society organisations address the need for companies to transition to renewable energy and many residents believe the government should be more involved in this process. Because of costs involved in moving from coal to renewable energy, companies may not be able to transition independently and require government funding. Resident 5 said, "The coal mine in Tasmania is an example of no pressure to change operations. It would cost money to change and there is no pressure so why would they? There is a lack of government policy." Out of the fifteen Tasmanian residents seven mentioned the need for the government to do more such as provide subsidies to help companies transition to

renewable energy. Resident 14 said, "This is where government should come in and help companies' transition through subsidies or something like that…it would also create jobs."

To understand the cost for manufacturing companies to transition to renewable energy, I examined paper and cement making and the amount of energy it needs. Kilns for manufacturing need to be heated to a high degree, and renewable energies such as hydro and wind cannot get to the high temperatures required (Schumacher & Juniper, 2013; Vass et al., 2021). Manufacturing infrastructure has also been established for coal to heat the kilns, so there would need to be substantial infrastructure changes to use renewable energy (Schumacher & Juniper, 2013; Vass et al., 2021). Cement Australia and Norske Skog use renewable energies where possible. Cement Australia reduces emissions through their subsidiary company Geocycle which makes industrial waste into energy and is used to assist the manufacturing process in reducing the amount of coal used (Cement Australia, 2022). Similarly, Norske Skog produces biogas from organic material waste from paper production and is used as a green fuel in various types of vehicles to reduce emissions in the transport sector of their operations (Norske Skog, 2022). While it would have been beneficial to speak with both companies to ascertain if they have a plan to transition from coal it was not possible.

However, other heavy industries have already made the renewable energy transition. Nyrstar is a zinc smelting company, and their Tasmanian site is one of the largest zinc smelters in the world in terms of production volume (Nyrstar, 2020). It came to Tasmania over 100 years ago as part of the hydro industry's promotion of affordable energy to attract heavy industry to the state (Nyrstar, 2020). Nyrstar continues to use hydroelectricity for their smelting operations. While smelting zinc is a different process to manufacturing paper and cement, it is still a heavy industry and they have managed to implemented infrastructure that allows them to use hydroelectricity rather than fossil fuels.

Even if the practicality of transitioning to 100% renewables is not yet possible, one respondent did acknowledge the irony of Norkse Skog being on the waterfront. "It is

ironic that Norske Skog is surrounded by lots of renewable energy but still uses coal."
(Tas resident 5)

Picture 4.3: Norske Skog, Boyer Tasmania (Coulter, 2020)

4.8 Discussion

Tasmania is somewhat of a paradox regarding its coal mining, climate change and sustainable development policy. One state government department has engaged with the SDGs; the state has climate change laws and is a leader in emissions reduction. However, coal mining, albeit on a small scale, is present, and the government appears to be on the fence about whether they support it. From my findings, there appear to be two ways to approach this. On the one hand, Tasmania's coal mining industry is small, and there is enough carbon sequestration and renewable energy in the state to offset emissions from Cement Australia and Norske Skog. On the other hand, Tasmania has the capacity to advance even further than they have in renewable energy and emissions reduction. So, it is surprising that the government does not take an active role in helping companies that use coal to transition to renewable energy.

4.8.1 Inaction or urgency: a divergence of opinion on coal mining and climate change

Some Tasmanian and Fingal Valley residents do not see climate change as urgent considering Tasmania's relative position as an emissions reduction leader compared with other Australian states and territories. The Fingal residents outlined how the coal mine is much smaller than it used to be, and there is less pollution from the mine. The substantial amount of renewable energy and forests to offset emissions meant that coal and other fossil fuels used in Tasmania do not affect the state's emissions reduction targets. Therefore, some interviewees believed that coal mining does not threaten the state's climate change targets. This approach of complacency due to forests offsets and renewable energy is shared by the Tasmanian Government who have not displayed ambitious emissions reduction targets. However, many respondents who were unaware of Tasmania's coal mines were surprised by the coal mining industry due to Tasmania's clean and green image.

The government is not overly involved with coal mining in Tasmania. Apart from the two exploration licences granted in 2019, they do not appear to be active in promoting the industry or providing subsidies. As discovered by the ex-state government mining regulator, this is likely because of the low quality of Tasmania's coal and the costs involved; it is not a viable investment. While the state government does not actively promote coal mining, the civil society organisations and Tasmanian residents believe that the government should be more involved in restricting coal mining and show ambition toward climate action. Both civil society organisations believe the state and federal government could take a more active role in helping companies that still use fossil fuels to transition.

Tasmanian residents also addressed the lack of government incentives to use renewable energy, whether to help the public transition to electric cars or provide subsidies and incentives to companies to transition to renewable energy. The public expects the government to provide support particularly to manufacturing companies that cannot independently transition to renewable energy. Considering that Nyrstar uses hydropower for their smelting process, it suggests that Cement Australia and Norske Skog may not need coal for their manufacturing processes, but their infrastructure is set up for coal and

it would take time and money to develop new infostructure that supports renewable energy. However, there is no political commitment and leadership to support this transition because the government can rely on carbon sequestration to meet emissions reduction targets. Investment in the transition away from coal would support policy coherence by legitimising the government's long-term vision for emissions reduction. The Tasmanian Government's lack of direct action reflects a lack of leadership on sustainable development issues and commitment to climate change action.

Examining why Tasmania continues to mine coal despite having an abundance of renewable energy assists in recognising the role of the state government in climate change policy. While Tasmania has legislated climate change policy, which implies a degree of policy coherence, findings from interviews suggest that policy coherence is less evident in practice. Many Tasmanian residents did not see government leadership, commitment, or financing for emissions reduction policy. This questions the depth of the policies, and while some policy coherence is present, there is room for more. Cost and inadequate government investment in infrastructure are most likely why Cement Australia and Norske Skog aren't 100% renewable. The public and civil society organisations see this as an issue for the government to solve by providing incentives to transition, such as through subsidies from the state, federal government, or both.

4.9 A comparative perspective of state and federal action

In addition to policy coherence in Tasmania and Australia separately, it is important to consider the states together and identify where they diverge or converge and how much coherence is between different levels of government. This is particularly important considering that Australia is a federation with a fragmented policymaking system where policymaking happens at different levels of government.

4.9.1 Tasmania and Australia: more similar than not

Through analysing Tasmania's *Climate Change (State Action) Act 2008* and Strategic Plan, it would appear that there is more political commitment, leadership and strategic vision for the SDGs and climate change policy than at the federal level of government. The state's climate change policy is legislated whereas the federal government's is not.

Legislating policy is important to provide accountability for the government and indicates commitment. Both levels of government have 2050 targets for climate change indicating long term vision. However, commitment to the long-term vision is absent when the policy is not legislated. While one Tasmanian department has incorporated the SDGs, the whole state has not. It appears to be a similar decentralised approach to the SDGs like at the federal level, where each department can engage with the 2030 as little or as much as they like. The SDGs at both levels of government do not have evaluation, reporting or monitoring requirements limiting the informed decision making for policymaking for sustainable development. In terms of stakeholder engagement, The VNR provides examples where government and stakeholders have worked together. However, in practice, the Senate Inquiry into the SDGs found that stakeholders wanted more government engagement in terms of funding and to be involved in governance processes. Tasmania promotes its Strategic Plan as has having stakeholder engagement and ensures to leave no one behind, however as the plan is new and it is unclear how much stakeholder engagement will be present in the coming years.

In terms of coal mining and climate change, Tasmania have less barriers from mining lobby groups to implement climate change policy than at the federal level. The state has been able to legislate climate change policy and set emissions reduction targets. At the federal level, mining lobbies provide an insurmountable barrier to climate change policy. The influence from mining lobby groups is shown in a technological approach to emissions reduction that supports the fossil fuel industry and the absence of legislated targets. The lack of leadership from the state government can be partially attributed to the lack of leadership on the federal level. For example, states are more likely to have ambitious targets if the Australian Federal Government made reducing coal mining and transitioning to renewable energy a national priority with financial incentives. Whereas because the federal government actively supports coal mining, there is no pressure for other levels of government to change practices. Further, both levels of government show little evidence of monitoring and reporting mechanisms that would ensure informed decision making for climate change policy.

4.9.2 Whole-of-government coordination in a federal system

Coordinated action between levels of government is important to ensure policy on one level of government does not cause trade-offs with another. As all levels of government can implement climate change policy this makes it very likely that trade-offs will materialise if there is no coordinated action across departments and levels of government. In Australia there is a national cabinet to address issues of national importance with all levels of government, however, so far, they have only coordinated to address covid-19. The Tasmanian Government's *Climate Change (State Action) Act 2008* is developed in line with national and international emissions reduction targets. However, as the federal government's targets are not ambitious, the state and local levels of government are not under pressure to develop more ambitious targets. With this in mind, the ambition of climate change policy at the lower levels of government will only be as high as that of the federal level unless there is political will or civil society pressure. A coordinated whole-of-government approach would mean that all the levels of government align their emissions reduction targets so that action in one state does not affect another. With no commitment at the highest level of government and within a fragmented policymaking system, nothing is preventing federal, state, and local governments from developing and implementing conflicting policies resulting in trade-offs.

4.10 Summary

This chapter has presented findings from both the federal and state levels of government regarding Australia's approach to sustainable development, climate change policy and coal mining. I have examined the role of mining lobby groups in climate change policy at the federal level and why Tasmania continues to mine coal despite having abundant renewable energy. This has been done through document analysis and interviews which I discuss through a policy coherence for sustainable development lens. I have also examined how each level of government has engaged with the SDGs and climate change policy. This included investigating the level of political commitment and leadership for the SDGs and climate change policy to discover the extent to which there is policy coherence for sustainable development in Australia.

Chapter 5: Conclusion

The purpose of this study has been to determine the extent to which there is policy coherence for sustainable development in Australia. I have examined Australia's policy coherence for sustainable development by focusing on climate change and coal mining at the federal and state levels of government. I aimed to discover the level of political commitment and leadership present for sustainable development and identified the major reasons for Australia's position as a climate change laggard. The thesis has also sought to determine why Tasmania continues coal mining despite having an abundance of renewable energy and how this relates to the level of political commitment to and leadership for climate change action at the state level. A policy coherence for sustainable development (PCSD) lens provides a unique look into Australia's policymaking system and the extent to which policy coherence or lack thereof has affected Australia's commitment to sustainable development.

Climate change is an urgent global issue. The International Panel on Climate Change (IPCC) provides scientific information upon which international climate agreements are based. In a report from early 2022 they asserted that any further delay in climate change action will miss a rapidly closing window to ensure a liveable future (IPCC, 2022d). Climate change affects the progress of many areas of sustainable development. It has triggered environmental degradation, natural disasters, food and water insecurity, economic disruption, conflict, extreme weather events, and inequality (UN, 2022c). Fossil fuel mining, such as coal, is a major driver of climate change and as a result, the international community is pushing for the end of coal mining (UN, 2021). Ending coal mining is essential to reach climate change emissions reduction targets and help to ensure the consequences of climate change do not become more severe. Renewable energy such as solar and wind are considered sustainable alternatives to coal energy (Li et al., 2020). Australia is experiencing more frequent and severe climate related disasters, and they have an abundance of renewable energy resources, yet coal mining continues to provide energy for domestic use and to export.

This chapter begins with a summary of this thesis including sustainable development, climate change and a look at Australia and Tasmania. I then outline my conclusions based on my findings and discussions. This starts with the federal level of government and how

it has addressed the SDGs, climate change policy and the relationship with mining lobby groups. I then focus the case of Tasmania by looking at its approach to the SDGs and climate change policy and why coal mining exists in the state. I address how useful PCSD was in my thesis. Finally, I present the way forward for Australia.

5.1 Australia's approach to sustainable development

Sustainable development is development that meets the needs of the present without compromising the future generations. It focuses on three pillars of society, environment, and economy, and aims to balance these areas of development so action in one does not impede action in another. The *Our Common Future* conceptualisation of sustainable development is the most common and while it is vague and open to interpretation it has endured as the main conceptualisation and used as the basis of sustainable development agendas at the international level.

The 2030 Agenda for Sustainable Development is the current framework which the international community has agreed upon to address sustainable development issues. The Agenda includes the Sustainable Development Goals (SDGs) which provide a blueprint for tackling the biggest issues of our time. Similarly, to the concept of sustainable development, the goals have been considered broad and vague, making them challenging to implement. This means achieving the goals requires coordination between levels of government, departments, and stakeholders if they wish to be implemented with as few trade-offs as possible.

Australia is already experiencing major consequences of climate change such as bushfires, droughts, and floods, which not only result in loss of lives, homes and livelihoods but costs the country billions of dollars a year in recovery. Notwithstanding climate related disasters, Australia shows little commitment to climate change policy and is considered a climate change laggard in the international community. Fossil fuel mining plays a big role in Australia's position as a climate change laggard. Australia is the third largest exporter in the world of fossil fuels. Fossil fuel mining lobby groups have a close relationship with the federal government and influence climate change policy. Further, Australia has abundance resources of wind and solar that can provide more sustainable energy sources than fossil fuels. The state of Tasmania is an Australian leader in

emissions reduction. Hydropower has been used since the early 1900s and the state's vast native forests reserves act as a carbon sink for emissions. The renewable energy and forests have helped Tasmania reach carbon negative in early 2022. While Tasmania is a leader in emissions reduction, coal is mined in the state to produce energy for two of the state's major manufacturing companies.

Australia's political framework is also noteworthy. It is a federation where policymaking responsibilities are separated between the local, state, and federal levels of government. Responsibilities are outlined in the Constitution, however because it came into force in 1901, many sustainable development issues are not directed to a specific level of government. In terms of climate change, each level of government can address it through cooperative federalism. However, if cooperation and collaboration is not practiced between levels of government and departments trade-offs are likely. A federal system of government affects the ability for Australia to implement coherent policy that results in minimal trade-offs, and this is demonstrate in the case of Australia and Tasmania.

5.2 Policy coherence for sustainable development at the federal level

The Federal Government supports the 2030 Agenda in principle. The 2018 Voluntary National Review (VNR) outlined the alignment of the 2030 Agenda principle of 'leaving no one behind' as connected with the Australian value of 'a fair go'. Both address the need for ensuring equality within development and that no one is held back because of their race, age, or gender. However, the Federal Government does not incorporate the SDGs into a national strategy, with no formal requirements for ministries, agencies, and stakeholders to report on and monitor the SDGs. The government has defended this choice by saying the SDGs align with pre-existing Australian policies and in a federation a national strategy would not be practical. On the other hand, policy coherence for sustainable development (PCSD) emphasises the importance of a national strategy, reporting and monitoring for the SDGs to ensure accountability and to limit unnecessary trade-offs between goals. The decentralised approach from the Federal Government suggests very little political support for the SDGs at the highest level of government and a lack of engagement with PCSD. Taking Australia's approach to the SDGs into account,

it illustrates that many areas of PCSD have not been met, including, strategic vision, commitment, leadership, policy integration, financing impacts, monitoring, and evaluation. Lacking these elements of PCSD suggests that policies on SDGs at different levels of government, departments and between stakeholders may be uncoordinated and result in contradicting policies.

The PCSD framework also outlines that coordinated action across all sectors, government levels, and stakeholder engagement is essential for effective implementation of the SDGs. The Voluntary National Review (2018) provided evidence of stakeholder engagement, for example, there are humanitarian programs that involve delivering services to migrants through a collaboration of stakeholders and local, state, and federal levels of government. However, in practice, the Senate Inquiry into the SDGs (2019) revealed that many stakeholders do not receive adequate government support for implementation of the SDGs. For example, the community group Pujiman stated that the government has not provided sufficient funding to pursue the goals, and that there is a lack of inclusiveness in the governance process. This was also demonstrated by the confusion among stakeholders regarding where the responsibility of the goals lies, suggesting little stakeholder engagement and collaboration for the SDGs. Therefore, there may be stakeholder engagement for sustainable development in general but not for the SDGs as a set of interconnected goals.

5.3 The impact of mining lobbies on climate change policy

The Federal Liberal-National Coalition has a long-standing relationship with mining lobby groups which influence climate change policy. The government supports the industry through subsidies and policies and the industry supports the government through political donations. There is a revolving door between industry workers and politicians, with many senior politicians working for both mining companies and lobby groups. The Federal Government's current climate change policy (Emissions Reduction Plan) aims to achieve net-zero emission by 2050 through a technology led approach. The Plan outlines that the coal industry will not be scaled back to meet emissions targets. This approach benefits the fossil fuel lobby such as the Minerals Council of Australia (MCA) as the industry is not required to change their coal mining practices. The close relationship between MCA and the Coalition Government demonstrated in the findings

suggests that mining lobby groups have an insurmountable influence on government and acts as a barrier to climate change policy at the federal level.

The 2030 Agenda principle of interconnectedness and indivisibility recognises that approaching the SDGs in their entirety is essential to foster synergies. The PCSD address this through the need to have a coordinated whole-of-government approach to the SDGs to avoid trade-offs. The government's lack of policy coherence demonstrated in the Emissions Reduction Plan which is heavily influenced by mining lobby groups jeopardies progress of sustainable development in areas beyond climate change. Climate change action is integral to other areas of sustainable development such as health, housing, food, and water security and inequality. By April 2022 Australia had already lost thousands of homes and several lives to climate related disasters, however, policy coherence for the SDGs and climate change policy is minimal.

5.4 State government commitment to, and leadership for, climate change policy and the SDGs

The SDGs have been addressed in Tasmania by NRE Tas. It is the first Tasmanian department to incorporate the SDGs into a Strategic Plan. By doing this NRE Tas have displayed features of policy coherence. Merging natural resources and environmental related agencies into one department indicates political commitment to these areas. Previously, these agencies were under the Department of State growth which is focused on developing industry. Under NRE Tas they can share a common agenda for preserving the environment and ensure vertical policy alignment with all natural resource and environmental related agencies. Further, as the first department to engage with the goals, it indicates political leadership for the SDGs.

While political commitment and leadership are important for PCSD and creating a whole-of-government approach to policymaking, several other aspects of PCSD were not present. For example, horizontal policy alignment between NRE Tas and other government departments is non-existent. Considering the interrelated nature of the SDGs and how action in one area can enhance or hinder progress in another, it risks the implementation of the goals if no horizontal alignment is present. There is very little civil society awareness of the SDGs which suggests limited effort from the department to

integrate the SDGs into society and enhance collaboration with stakeholders. Therefore, while there appears to be political commitment and leadership for the SDGs to an extent, engaging with more areas of policy coherence could enhance commitment and leadership. This also raises concerns of how likely it is that the SDGs will be implemented with as few trade-offs as possible. However, the Strategic Plan and NRE Tas are relatively new; it will be interesting to see how they develop and how the SDGs are addressed when the plan is put into practice.

On paper the *Climate Change (State Action) 2008 Act* appears to have several elements of policy coherence. By legislating climate change policy, it indicates strategic vision, commitment, and leadership. The four-year review of the Act demonstrates evaluation and stakeholder engagement. The targets outlined in the Act are in line with international and national climate change targets which shows coordinated action across levels of government. However, interviews and document analysis illustrated that in practice, areas of policy coherence such as political commitment and leadership are absent. The current Liberal State Government repealed two divisions in the Act which would have enhanced policy coherence for climate change; they included a climate council and reporting which would have enhanced stakeholder engagement accountability, and evaluation, thus showing more political commitment and leadership for climate change action. Emission reduction targets could also be more ambitious to encourage reduction of using fossil fuels. The State Government appears to be complacent with the emissions the state produces. The government falls back on the fact that there are native forests to offset emissions and a lot of renewable energy. This means they offer little incentive to move away from fossil fuels, including for individuals, businesses, and heavy industry.

While Tasmania has achieved sustainable emissions reduction, recently becoming carbon negative, it has been because of vast native forests that offset emissions and a longstanding renewable energy industry that was developed to bring industry to the state rather than to take climate change action. Therefore, Tasmania's position as an emissions reduction leader is situational rather than because of effective climate change policy. This lack of political commitment and leadership for climate change policy and the SDGs reveals very little policy coherence for sustainable development and relates to why Tasmania continues to mine coal.

5.5 Tasmania's persistent coal mining industry

Coal mining exists in Tasmania to provide energy to Cement Australia and Norske Skog. The literature suggests that companies use coal because the renewable energy alternatives are not powerful enough to produce the heat need for the manufacturing process. Without being able to interview the companies I am unable to determine to what extent this is accurate for their specific operations. However, considering that Nyrstar can use hydroelectricity for smelting, it questions the extent to which there is no technology for other manufacturing companies to use renewable energy instead of coal, but if there is just a lack of incentives to change.

Interviews found that there is a common view among civil society that the government should be more involved in helping companies to transition from coal to renewable energy. This could be done through subsidies or emissions reduction targets specifically for the manufacturing sector. Coal mining exists in Tasmania because there is a lack of political commitment and leadership to transition to renewable energy. The large amounts of renewable energy and offsets, mean that the Tasmanian Government does not have to be concerned by the emissions that manufacturing companies emit, therefore not prioritising a transition to renewable energy. This does not demonstrate long-term vision. Relying on offsetting carbon emissions in forests is at risk from bushfires and droughts, which would cause the carbon captured by the trees to be released, causing Tasmania's emissions to rise substantially. Therefore, long-term vision, political commitment and leadership are needed to anticipate future risks and have a plan for manufacturing companies to move away from using coal for manufacturing. But as it stands, Tasmania is not displaying these aspects of policy coherence.

5.6 Achieving sustainable development in a federal system of government

Discovering why Tasmania mines coal and the extent to which there is political commitment and leadership to sustainable development and climate change helps to answers the main research question of the extent to which there is policy coherence for sustainable development in Australia. This is because Australia is a federation with a separation of powers between the federal, state, and local levels of government; the state

level of government is responsible for onshore mining, and all levels are responsible for climate change policy. According to PCSD, to achieve the SDGs there needs to be a whole-of-government approach to policymaking. While this may be challenging to achieve in a federation, there are elements of PCSD that could be incorporated to develop a more coordinated approach to sustainable development. For example, if climate was prioritised at the federal level by developing an inter departmental committee to coordinate between government departments it could enhance policy coherence for climate change policy between levels of government. Concerted action by a committee like this could include policy to not grant anymore exploration licences for commercial use of fossil fuels. However, due to a lack of political commitment and leadership at the federal and state level and the influence of lobby groups, such policies are unlikely.

The attitude of the Australian Government is reflective of the title of this thesis. The lack of policy coherence for, and involvement in the SDGs illustrates a 'she'll be right mate' approach to sustainable development. This is a common phrase used in Australia to demonstrate that everything will be fine, that there is no cause for alarm, or need for action. Australia has not incorporated the SDGs into a national strategy and climate change policy allows the fossil fuel industry to continue. To all intends and purposes, Australia, while displays some aspects of policy coherence for sustainable development in general, does not display policy coherence for the SDGs as an interconnected set of goals. The country does not engage with several of the eight principles of the PCSD framework, and they ones they do engage with, is to a small degree, as shown in the examples of limited political commitment. The absence of policy coherence demonstrated in this thesis in relation to climate change is likely to continue to cause trade-offs within other areas sustainable development; climate related disasters will continue, increasing in frequency and severity resulting increased inequality through loss of life, houses, livelihoods, animal specifies, and habitats.

5.7 The relevance of PCSD as a theoretical framework

This study finds that policy coherence is required to achieve complex interrelated goals such as the SDGs. But is it practical in the Australian context? Australia's federation is not designed for the amount of horizontal and vertical coordination that PCSD requires. Implementing a more whole-of-government approach would require major re-structuring

of layers of government, which is highly unlikely. This could, however, be done for specific issues to enhance coherence between levels of government, but trade-offs may still occur between pillars of sustainable development.

Using PCSD as my theoretical framework enabled me to investigate various areas of coherence such as commitment, leadership, funding, monitoring, reporting. While overall policy coherence appears to be absent, by using PCSD, I was able to identify what aspects of policy coherence are more present than others, or if a particular level of government practices more aspects than another. It was interesting to use PCSD in a context that does not always allow for a whole-of-government approach to policymaking. Australia's federal system is fragmented and the responsibilities of each level of government may conflict and hinder sustainable development progress. Limited examples of PCSD were found on the federal and state levels of government which clearly demonstrated Australia's position on sustainable development and supported its reputation as a climate change laggard. As I was analysing policy documents and civil society interviews, PCSD was a beneficial tool as it was designed to support the design and implementation of coherent policies. Therefore, by using this approach I was able to determine what is needed to achieve coherent policy and why it is important. To get the most out of this approach it would have been useful to speak with policymakers to gain an inside view, my findings at the federal level are based secondary data, which may not reflect what happens in practice. I believe PCSD was effective for the scope of this thesis. However, further research which involves the local level of government and a comparison between different Australian states would help to further examine the extent to which there is policy coherence for sustainable development in Australia. It would also shed more light on the complexities of a federal system and how possible it is to achieve policy coherence.

5.8 The way forward for Australia

On the 21st of May 2022 Australia elected a new government. The Labor Party has succeeded the Liberal-National Coalition. This will potentially affect sustainable development policy in the years to come. As mentioned previously, in the past, climate change action has been more prominent under a Labor Government, and this is likely to happen again.

Just five minutes into his first speech as Prime Minister, Anthony Albanese outlined the two principles that will drive the government: "no one left behind…no one held back" (10 News First, 2022). This has clear links with the 2030 Agenda and shows promise that the Agenda's main principles align with those of the government. Albanese also addressed climate change: "Together we can end the climate wars…together we can take advantage of the opportunity for Australia to be a renewable energy superpower" (10 News First, 2022). This demonstrates a commitment to climate change action and enhancing Australia's renewable energy capacity. It remains to be seen how and to what extent the new government will present an alternative climate change plan and whether its policies will be more coherent. Nonetheless, it is a promising start to a more sustainable future for Australia. Additionally, there is likely to be less influence from mining lobby groups under a Labor Government. The lobby groups had strong ties with the Coalition Government reinforced and entrenched over three terms (nine years). Now that there is a Labor Government it is possible that government policy will be less connected to the interests of the fossil fuel industry.

Australia's reputation as a climate change laggard may change and this will become evident at the United Nations Climate Change Conference (COP 27) in Egypt in November 2022. There are high expectations that the Australian attitude towards climate change policy of 'she'll be right' will shift to one of active and urgent climate change action.

Reference list

10 News First. (2022, May 21). *Anthony Albanese Delivers Victory Speech in 2022 Election* [Video]. 10 News. https://www.youtube.com/watch?v=NVH0cDD146Q

ABC. (2021, November 10). Tuvalu minister gives COP26 speech standing knee-deep in the sea to show nation on frontline of climate crisis. *ABC News*. https://www.abc.net.au/news/2021-11-10/tuvalu-minister-makes-cop26-speech-from-sea/100608344

ABS. (2021, May 28). *Australian Industry, 2019-20 financial year.* Australian Bureau of Statistics. https://www.abs.gov.au/statistics/industry/industry-overview/australian-industry/latest-release

Addison, T., & Roe, A. R. (2018). *Extractive Industries: The Management of Resources as a Driver of Sustainable Development*. Oxford University Press. https://global.oup.com/academic/product/extractive-industries-9780198817369?prevSortField=1\&sortField=8\&start=0\&resultsPerPage=20\&prevNumResPerPage=20\&lang=en\&cc=fi$\#$

AEC. (2019, August 28). *2013 federal election*. Australian Electoral Commission. https://www.aec.gov.au/Elections/Federal_Elections/2013/index.htm

Althaus, C., Bridgman, P., & David, G. (2020). *The Australian Policy Handbook, A Practical Guide to the Policy Making Process* (6th ed.). Routledge.

Bali Swain, R. (2018). A Critical Analysis of the Sustainable Development Goals. In *Handbook of Sustainability Science and Research* (pp. 341–355). Springer. https://doi.org/10.1007/978-3-319-63007-6_20

Barnett, G. (2018, July 27). *Exploration Drilling Grant Initiative*. Tasmanian Government. https://www.premier.tas.gov.au/releases/exploration_drilling_grant_initiative

Barnett, G. (2021, July 2). *Partnership delivering a stronger and smarter mining sector*. Tasmanian Government. https://www.premier.tas.gov.au/site_resources_2015/additional_releases/partnership_delivering_a_stronger_and_smarter_mining_sector

Barry, F., King, M., & Matthews, A. (2010). Policy Coherence for Development: Five Challenges. *Irish Studies in International Affairs*, *21*, 207–223.

Battellino, R. (2010, February 23). *Mining Booms and the Australian Economy Speeches*. Reserve Bank of Australia. https://www.rba.gov.au/speeches/2010/sp-dg-230210.html

Biermann, F. (2006). *Earth System Governance. The Challenge for Social Science.*

Biggs, M. (2021). *Annual and final report for EL1/2015 Avoca West Coal Project—24th April 2019—23rd April 2020* (21_8422). Junction Coal Pty Ltd. https://www.mrt.tas.gov.au/webdoc2/app/default/document_tasxrept_detail?id=119848&pageMode=directLink

Bowen, G. (2009). Document Analysis as a Qualitative Research Method. *Qualitative Research Journal*, *9*, 27–40. https://doi.org/10.3316/QRJ0902027

Bowen, K., Cradock-Henry, N. A., Koch, F., Patterson, J., Häyhä, T., Vogt, J., & Barbi, F. (2017). Implementing the "Sustainable Development Goals": Towards addressing three key governance challenges—collective action, trade-offs, and accountability. *Current Opinion in Environmental Sustainability*, *26–27*, 90–96. https://doi.org/10.1016/j.cosust.2017.05.002

Brett. (2014, May 23). *The Franklin River in the Tasmanian Wilderness*. Water by Nature Tasmania, Franklin River Rafting. https://franklinriver.com/franklin-river-tales/franklin-river-tasmanian-wilderness/

Briggs, C., Hemer, M., Marsh, P., Langdon, R., & Teske, S. (2021, July 21). *Wind turbines off the coast could help Australia become an energy superpower, research finds*. The Conversation. http://theconversation.com/wind-turbines-off-the-coast-could-help-australia-become-an-energy-superpower-research-finds-164590

Brodhag, C., & Taliere, S. (2006). Sustainable development strategies: Tools for policy coherence. *Natural Resources Forum*, *30*(2), 136–145.

Campbell, R., Littleton, E., & Armistead, A. (2021). *Fossil fuel subsidies in Australia, Federal and state government assistance to fossil fuel producers and major users 2020-21*. Australia Institute.

Carbone, M. (2008). Mission Impossible: The European Union and Policy Coherence for Development. *Journal of European Integration*, *30*(3), 323–342. https://doi.org/10.1080/07036330802144992

Castro, C. J. (2004). Sustainable Development: Mainstream and Critical Perspectives. *Organization & Environment*, *17*(2), 195–225. https://doi.org/10.1177/1086026604264910

CAT. (2021, September). *Policies & action*. Climate Action Tracker. https://climateactiontracker.org/countries/australia/policies-action/

Cement Australia. (2022). *Environment & Sustainability*. Cement Australia. https://www.cementaustralia.com.au/environment-sustainability

Christensen, T., & Lægreid, P. (2006). *The Whole-of-Government Approach—Regulation, Performance, and Public-Sector Reform* [Working Paper 6]. Stein Rokkan Centre for Social Studies.

Christoff, P. (2021, October 20). *Australia is undermining the Paris Agreement, no matter what Morrison says – we need new laws to stop this*. The Conversation. http://theconversation.com/australia-is-undermining-the-paris-agreement-no-matter-what-morrison-says-we-need-new-laws-to-stop-this-170198

Clifton, C., Sheehan, H., & Micallef, R. (2021). *Independent Review of the Climate Change (State Action) Act 2008*. Jacobs Australia Pty Ltd.

Climate Council. (2021, November). *COP26 ends with stark warning: Step up on emission cuts this decade Australia, or pay the price*. Climate Council. https://www.climatecouncil.org.au/resources/cop26-ends-with-stark-warning-step-up-on-emission-cuts-this-decade-aus-or-pay-the-price/

Climate Council. (2022, March 29). *"A massive lost opportunity": Virtually no funding for climate in Federal Budget*. Climate Council. https://www.climatecouncil.org.au/resources/massive-lost-opportunity-virtually-no-funding-climate-federal-budget-2022/

Coghlan, D., & Brydon-Miller, M. (2014). *Positionality*. SAGE Publications Ltd. https://doi.org/10.4135/9781446294406.n277

Constable, T. (2019, June 14). *Carbon capture and storage critical to reducing emissions*. Minerals Council of Australia. https://www.minerals.org.au/news/carbon-capture-and-storage-critical-reducing-emissions

Constable, T. (2020, September 22). *Australian mining leads on cutting emissions through technology*. Minerals Council of Australia. https://www.minerals.org.au/news/australian-mining-leads-cutting-emissions-through-technology

Coulter, E. (2019, October 10). Coal mining's potential resurgence in Tasmania prompts concerns from farmers. *ABC News*. https://doi.org/10/tasmania-mining-future-raises-farmers-concerns/11590340

Coulter, E. (2020, August 10). Paper surviving troubled times, now weathering coronavirus fallout. *ABC News*. https://www.abc.net.au/news/2020-08-11/boyer-paper-mill-troubled-times-during-coronavirus-pandemic/12541810

Cox, L. (2021a, October 5). Third new coal project approved by Australian environment minister Sussan Ley in just one month. *The Guardian*. https://www.theguardian.com/australia-news/2021/oct/05/new-coalmine-mangoola-nsw-muswellbrook-approved-australia-environment-minister-sussan-ley

Cox, L. (2021b, November 29). Federal government lags all Australian states on renewable energy action, new report finds. *The Guardian*. https://www.theguardian.com/environment/2021/nov/30/federal-government-lags-all-australian-states-on-renewable-energy-action-new-report-finds

Crowley, K. (2021). Fighting the future: The politics of climate policy failure in Australia (2015–2020). *WIREs Climate Change*, *12*(5), e725. https://doi.org/10.1002/wcc.725

CSIRO. (2021). *Australia's changing climate*. CSIRO; CSIRO. https://www.csiro.au/en/research/environmental-impacts/climate-change/state-of-the-climate/previous/state-of-the-climate-2018/australias-changing-climate

Daley, F., Fossil Fuel Non-Proliferation Treaty Initiative, Oil Change International, Uplift UK, Greenpeace Norway, The Australia Institute, & Stand.earth. (2021). *The Fossil Fuelled Five*. University of Sussex.

DFAT. (2018). *Report on the Implementation of the Sustainable Development Goals*. Australian Government. https://www.sdgdata.gov.au/about/voluntary-national-review

DFAT. (2022). *Sustainable Development Goals*. Australian Government Department of Foreign Affairs and Trade. https://www.dfat.gov.au/aid/topics/development-issues/2030-agenda/Pages/sustainable-development-goals

DFAT Committee. (2019). *United Nations Sustainable Development Goals (SDG)* [Inquiry]. Australian Government.

DISER. (2019). *National Resources Statement*. Department of Industry, Science, Energy and Resources.

DISER. (2021a). *Australia's Long-Term Emissions Reduction Plan, A whole-of-economy Plan to achieve net zero emissions by 2050*. The Australian Government.

DISER. (2021b). *Australia's Long-Term Emissions Reduction Plan: Modelling and Analysis*. The Australian Government.

DISER. (2022a). *Energy Supply*. Department of Industry, Science, Energy and Resources. https://www.energy.gov.au/government-priorities/energy-supply

DISER. (2022b). *International climate change commitments* [Text]. Australian Government, Department of Industry, Science, Energy and Resources; Department of Industry, Science, Energy and Resources. https://www.industry.gov.au/policies-and-initiatives/international-climate-change-commitments

EPA. (2022). *Who We Are*. Environment Protection Authority. https://epa.tas.gov.au/about-the-epa/who-we-are

European Commission. (n.d.). *Interlinkages Visualisation*. Know SDGs. Retrieved 22 May 2022, from https://knowsdgs.jrc.ec.europa.eu/interlinkages-visualization

Farrant, B., Holmes, D., & Edwards, M. G. (2013, June 18). *Australian media failures promote climate policy inaction*. The Conversation.

http://theconversation.com/australian-media-failures-promote-climate-policy-inaction-15197

Fernyhough, J. (2020, March 9). Australia 'cheating' on Paris, says former UN climate chief. *Australian Financial Review*. https://www.afr.com/policy/energy-and-climate/australia-cheating-on-paris-says-former-un-climate-chief-20200308-p547yf

Filho, W., & Brandli, L. (2016). *Engaging Stakeholders for Sustainable Development*. https://doi.org/10.1007/978-3-319-26734-0_21

Fingal Historical Society. (n.d.). *Fingal Valley District Gateway to the East Coast*. Tasmanian Visitor Corporation.

Geoscience Australia. (2021a). *Solar Energy* (Commonwealth of Australia). Australian Government Geoscience Australia. https://www.ga.gov.au/scientific-topics/energy/resources/other-renewable-energy-resources/solar-energy

Geoscience Australia. (2021b). *Wind Energy* (Commonwealth of Australia). Australian Government Geoscience Australia. https://www.ga.gov.au/scientific-topics/energy/resources/other-renewable-energy-resources/wind-energy

Glass, L.-M., & Newig, J. (2019). Governance for achieving the Sustainable Development Goals: How important are participation, policy coherence, reflexivity, adaptation and democratic institutions? *Earth System Governance*, *2*, 100031. https://doi.org/10.1016/j.esg.2019.100031

Greenpeace. (2022). *Dirty Power: Big Coal's network of influence over the coalition government*. Greenpeace. https://actinstapage.greenpeace.org.au/dirtypower

Greenpeace Australia Pacific. (2019, May 8). *Dirty Power: Big Coal's network of influence over the Coalition Government* [Video]. Greenpeace. https://www.youtube.com/watch?v=x5f-ad-mtRY

Greenpeace Australia Pacific, & West, M. (2019). *Dirty Power Big Coal's Network of Influence over the Coalition Government*. Greenpeace.

Griffith, S. (2019, August 14). How do we decarbonize? *The Other lab Blog*. https://medium.com/otherlab-news/how-do-we-decarbonize-7fc2fa84e887

Griffith, S. (2022). *The Big Switch, Australia's Electric Future*. Black Inc.

Griffiths, B. (2018, March 1). *Friday essay: How archaeology helped save the Franklin River*. The Conversation. http://theconversation.com/friday-essay-how-archaeology-helped-save-the-franklin-river-92510

Hamilton, C. (2006, February 20). *The Dirty Politics of Climate Change*. Speech to the Climate Change and Business Conference, Hilton Hotel Adelaide.

Hanrahan, C. (2022, March 3). Inside the 'highly unusual' weather combination that led to floods in Australia's east. *ABC News*. https://www.abc.net.au/news/2022-03-04/nsw-and-qld-floods-caused-by-consecutive-la-ninas-experts-say/100875572

Harvey, F., Carrington, D., & Morton, A. (2021, November 12). Second Cop26 draft text: Coal phaseout remains in but some language softened. *The Guardian*. https://www.theguardian.com/environment/2021/nov/12/second-cop26-draft-criticised-for-weakened-language-on-fossil-fuels

Hewson, J., Steffen, W., Hughes, L., & Meinshausen, M. (2021). *Shifting the Burden: Australia's Emissions Reduction Tasks Over Coming Decades*. Climate Targets Panel.

HLPF. (2019). *Together 2030—Position Paper: Sustainable Development Knowledge Platform*. Sustainable Development Goals Knowledge Platform. https://sustainabledevelopment.un.org/index.php?page=view&type=30022&nr=2156&menu=3170

Hodder, P. (2009). Lobby groups and front groups: Industry tactics in the climate change debate. *Melbourne Journal of Politics*, *34*, 45–82.

Hoebink, P. (Ed.). (2004). *The Treaty of Maastricht and Europe's Development Co-operation*. European Union.

Höök, M., & Tang, X. (2013). Depletion of fossil fuels and anthropogenic climate change—A review. *Energy Policy*, *52*, 797–809. https://doi.org/10.1016/j.enpol.2012.10.046

Hydro Tasmania. (2022a). *About us*. Hydro Tasmania. https://www.hydro.com.au/about-us

Hydro Tasmania. (2022b). *Our power stations*. Hydro Tasmania. https://www.hydro.com.au/clean-energy/our-power-stations

Iacobuţă, G. I., Höhne, N., van Soest, H. L., & Leemans, R. (2021). Transitioning to Low-Carbon Economies under the 2030 Agenda: Minimizing Trade-Offs and Enhancing Co-Benefits of Climate-Change Action for the SDGs. *Sustainability*, *13*(19), 10774. https://doi.org/10.3390/su131910774

Influence Map. (2020). *Australian Industry Associations and their Climate Policy Footprint*. Influence Map.

IPCC. (2022a). *History of the Convention | UNFCCC*. United Nations Climate Change. https://unfccc.int/process/the-convention/history-of-the-convention#eq-1

IPCC. (2022b). *Intergovernmental Panel on Climate Change*. IPCC. https://www.ipcc.ch/

IPCC. (2022c). The evidence is clear: The time for action is now. We can halve emissions by 2030. *Newsroom*. https://www.ipcc.ch/2022/04/04/ipcc-ar6-wgiii-

pressrelease/

IPCC. (2022d). *Climate Change 2022 Mitigation of Climate Change Working Group III contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press.

Jakob, M., Steckel, J. C., Jotzo, F., Sovacool, B. K., Cornelsen, L., Chandra, R., Edenhofer, O., Holden, C., Löschel, A., Nace, T., Robins, N., Suedekum, J., & Urpelainen, J. (2020). The future of coal in a carbon-constrained climate. *Nature Climate Change*, *10*(8), 704–707. https://doi.org/10.1038/s41558-020-0866-1

Jeffery, J. (2006). Governance for a sustainable future. *Public Health*, *120*(7), 604–608. https://doi.org/10.1016/j.puhe.2006.04.004

Jones, T. (2002). Policy Coherence, Global Environmental Governance, and Poverty Reduction. *International Environmental Agreements*, *2*(4), 389–401. https://doi.org/10.1023/A:1021319804455

Kallies, A. (2021). The Australian Energy Transition as a Federalism Challenge: (Un)cooperative Energy Federalism? *Transnational Environmental Law*, *10*(2), 211–235. https://doi.org/10.1017/S204710252000045X

Kardos, M. (2012). The Reflection of Good Governance in Sustainable Development Strategies. *Procedia - Social and Behavioral Sciences*, *58*, 1166–1173. https://doi.org/10.1016/j.sbspro.2012.09.1098

Kellow, A. (1989). The Dispute over the Franklin River and South West Wilderness Area in Tasmania, Australia. *Natural Resources Journal*, *29*(1), 129–146.

Kelly, R. (1992, June 4). *Australia signs UNCED Climate Change Convention*. Parliament of Australia. https://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query=Id%3A%22media%2Fpressrel%2F2211669%22

Kenny, C. (2015, March). *SDG Targets: Here's How to Make Them Stronger*. Centre For Global Development. https://www.cgdev.org/blog/sdg-targets-heres-how-make-them-stronger

Khan, H. A. (2017). Globalization and Sustainability. In H. A. Khan (Ed.), *Globalization and the Challenges of Public Administration: Governance, Human Resources Management, Leadership, Ethics, E-Governance and Sustainability in the 21st Century* (pp. 161–191). Springer International Publishing. https://doi.org/10.1007/978-3-319-69587-7_7

Koff, H., Challenger, A., & Portillo, I. (2020). Guidelines for Operationalizing Policy Coherence for Development (PCD) as a Methodology for the Design and Implementation of Sustainable Development Strategies. *Sustainability*, *12*(10), 4055. https://doi.org/10.3390/su12104055

Koning, J. (2002). *Social Sustainability in a Globalizing World Context, theory and methodology explored*. UNESCO Centre.

Kroll, C., Warchold, A., & Pradhan, P. (2019). Sustainable Development Goals (SDGs): Are we successful in turning trade-offs into synergies? *Palgrave Communications*, *5*(1), 1–11. https://doi.org/10.1057/s41599-019-0335-5

Kurmelovs, R. (2022, January 21). 'Just a new fossil fuel industry': Australia to send first shipment of liquefied hydrogen to Japan. *The Guardian*. https://www.theguardian.com/australia-news/2022/jan/21/just-a-new-fossil-fuel-industry-australia-to-send-first-shipment-of-liquefied-hydrogen-to-japan

Lasswell, H. D. (1971). *A Pre-View of Policy Sciences*. American Elsevier Publishing Company.

Lee, H. (2019, July 23). Climate Action and Sustainable Development are Inseparable. *SDG Knowledge Hub*. https://sdg.iisd.org:443/commentary/guest-articles/climate-action-and-sustainable-development-are-inseparable/

Lewis-Beck, M., Bryman, A., & Futing Liao, T. (2004). Content Analysis. In *The SAGE Encyclopedia of Social Science Research Methods*. SAGE Publications, Inc.

Li, H. X., Edwards, D. J., Hosseini, M. R., & Costin, G. P. (2020). A review on renewable energy transition in Australia: An updated depiction. *Journal of Cleaner Production*, *242*, 118475. https://doi.org/10.1016/j.jclepro.2019.118475

LISTmap. (2022). *Land Information System Tasmania* [Map]. MRT. https://maps.thelist.tas.gov.au/listmap/app/list/map

Littig, B., & Griessler, E. (2005). Social sustainability: A catchword between political pragmatism and social theory. *International Journal of Sustainable Development*, *8*(1–2), 65–79. https://doi.org/10.1504/IJSD.2005.007375

Loynes, K. (2013). *Carbon Price Repeal Bills: Quick guide* [Research Paper Series]. Parliament of Australia.

Matheson, C. (2000). Policy Formulation in Australian Government: Vertical and Horizontal Axes. *Australian Journal of Public Administration*, *59*(2), 44–55. https://doi.org/10.1111/1467-8500.00150

MCA. (n.d.-a). *Coal: Building Australia's future*. Minerals Council of Australia. Retrieved 5 April 2022, from https://www.minerals.org.au/coal-building-australias-future

MCA. (n.d.-b). *Lowering emissions with Australian coal*. Minerals Council of Australia. Retrieved 5 April 2022, from https://www.minerals.org.au/coal/climate-change-and-low-emissions-coal-technology

MCA. (n.d.-c). *MCA Membership*. Minerals Council of Australia. Retrieved 5 April 2022, from https://www.minerals.org.au/mca-membership

MCA. (2021). *2020 Annual Report*.

McAdam, J., & Pryke, J. (2020). *Climate Change, Disasters and Mobility: A Roadmap for Australian Action* [Policy Brief]. Kaldor Centre for International Refugee Law.

McDonald, M. (2018, June 21). *Lowy Institute Poll shows Australians' support for climate action at its highest level in a decade*. The Conversation. http://theconversation.com/lowy-institute-poll-shows-australians-support-for-climate-action-at-its-highest-level-in-a-decade-98625

Mckenzie, J., & Kuehl, J. (2021). *Greater than the sum of its parts*. Canadian Institute for Climate Choices. https://climateinstitute.ca/publications/greater-than-the-sum-of-its-parts/

Meadowcroft, J. (2007). Who is in Charge here? Governance for Sustainable Development in a Complex World*. *Journal of Environmental Policy & Planning*, *9*(3–4), 299–314. https://doi.org/10.1080/15239080701631544

Meadowcroft, J. (2011). Sustainable Development. In *The SAGE Handbook of Governance* (pp. 535–551). SAGE Publications Ltd. https://doi.org/10.4135/9781446200964

Meadows, D. (2012, March 15). *Is It Too Late for Sustainable Development?* (M. Gambino, Interviewer) [Website]. http://tinyurl.com/GambinoSD

Milne, C. (2006). *Green Politics*. The Companion to Tasmanian History. https://www.utas.edu.au/library/companion_to_tasmanian_history/G/Green%20Politics.htm

Mining Link. (2022). *Blackwood*. Mining Link. https://www.mininglink.com.au/mine-details/blackwood

Minshull, L., Swann, T., & Campbell, R. (2019). *Coal calling: Selling new coal mines to Tasmania*. Australia Institute.
Morton, A. (2021, November 5). Australian government refuses to join 40 nations phasing out coal, saying it won't 'wipe out industries'. *The Guardian*. https://www.theguardian.com/environment/2021/nov/05/australia-refuses-to-join-40-nations-phasing-out-coal-as-angus-taylor-says-coalition-wont-wipe-out-industries

Mostogl, R. (2021). *Feedback on the Draft Climate Change State Action Amendment Bill 2021*. TMEC.

MRT. (2022a). *Lease application approval process*. Mineral Resources Tasmania. https://www.mrt.tas.gov.au/mining/lease_application_approval_process

MRT. (2022b). *Mining*. Tasmanian Government. https://www.mrt.tas.gov.au/mining

Nilsson, M., Chisholm, E., Griggs, D., Howden-Chapman, P., McCollum, D., Messerli, P., Neumann, B., Stevance, A.-S., Visbeck, M., & Stafford-Smith, M. (2018). Mapping interactions between the sustainable development goals: Lessons learned and ways forward. *Sustainability Science*, *13*(6), 1489–1503. https://doi.org/10.1007/s11625-018-0604-z

Norske Skog. (2022). *Climate change and energy use*. Norske Skog. https://www.norskeskog.com/sustainability/environment/climate-change-and-energy-use

NRE Tas. (2021). *Strategic Plan 2022-2026*. Department of Natural Resources and Environment Tasmania.

NRE Tas. (2022). *About the Department* [Department of Natural Resources and Environment Tasmania]. https://nre.tas.gov.au/about-the-department

Nyrstar. (2020). *Resources for a changing world, Hobart*. Nyrstar.

OECD. (2016). *Better Policies for Sustainable Development 2016: A New Framework for Policy Coherence*. OECD Publishing. https://doi.org/10.1787/9789264256996-en

OECD. (2018). *Measuring Distance to the SDG Targets 2017: An Assessment of Where OECD Countries Stand*. OECD. https://doi.org/10.1787/9789264308183-en

OECD. (2019a). *Governance as an SDG Accelerator: Country Experiences and Tools*. OECD Publishing. DOI: https://doi.org/10.1787/0666b085-en

OECD. (2019b). *Recommendation of the Council on Policy Coherence for Sustainable Development*. OECD.

O'Leary, Z. (2017). *The Essential Guide to Doing Your Research Project* (3rd ed.). SAGE Publications Ltd.

Payne, G., & Payne, J. (2020). *Key Concepts in Social Research*. https://doi.org/10.4135/9781849209397

Pearce, D. W., & Atkinson, G. D. (1993). Capital theory and the measurement of sustainable development: An indicator of "weak" sustainability. *Ecological Economics*, *8*(2), 103–108. https://doi.org/10.1016/0921-8009(93)90039-9

Pearse, G. (2007). *High and Dry John Howard, climate change and the selling of Australia's future*. Penguin Group.

Picciotto, R. (2005). The Evaluation of Policy Coherence for Development. *Evaluation*, *11*(3), 311–330. https://doi.org/10.1177/1356389005058479

Ponserre, S., & Ginnetti, J. (2019). *Disaster Displacement A Global Review, 2008-2018* [Thematic Report]. Internal Displacement Monitoring Centre.

Posner, R., & Graham, S. (2021, June). *Tasmania's reached net-zero emissions and 100% renewables – but climate action doesn't stop there*. The Conversation. http://theconversation.com/tasmanias-reached-net-zero-emissions-and-100-renewables-but-climate-action-doesnt-stop-there-160927

Redclift, M. (1992). The meaning of sustainable development. *Geoforum*, *23*(3), 395–403. https://doi.org/10.1016/0016-7185(92)90050-E

Righettini, M. S., & Lizzi, R. (2021). How scholars break down "policy coherence": The impact of sustainable development global agendas on academic literature. *Environmental Policy and Governance*, 1–12. https://doi.org/10.1002/eet.1966

Ritchie, H., & Roser, M. (2020). Energy. *Our World in Data*. https://ourworldindata.org/fossil-fuels

Robertson, J. (2014, November 21). LNP took donations from coal seam gas companies, Senate inquiry told. *The Guardian*. https://www.theguardian.com/australia-news/2014/nov/22/lnp-took-donations-from-coal-seam-gas-companies-senate-inquiry-told

Rosengreen, C. (2022, May 3). *Tasmania 'first to become carbon negative'*. Griffith University. https://news.griffith.edu.au/2022/05/03/tasmania-first-to-become-carbon-negative/

Rothstein, B. (2012). Good Governance. In D. Levi-Faur (Ed.), *The Oxford Handbook of Governance*. Oxford University Press.

Rowley, J. (2002). Using Case Studies in Research. *Management Research News*, *25*(1), 16–27. https://doi.org/10.1108/01409170210782990

Sachs, J. D. (2015a). *The Age of Sustainable Development*. Columbia University Press. https://doi.org/doi:10.7312/sach17314

Sachs, J. D. (2015b, March 30). *Why the Sustainable Development Goals Matter*? Project Syndicate. https://www.project-syndicate.org/commentary/sustainable-development-goals-shift-by-jeffrey-d-sachs-2015-03

Sales, L. (2021, October 26). *Energy Minister Angus Taylor speaks to 7.30* [Video]. Australian Broadcasting Corporation. https://www.abc.net.au/7.30/energy-minister-angus-taylor-speaks-to-7.30/13604388

Sands, P. (1992). The United Nations Framework Convention on Climate Change. *Review of European, Comparative & International Environmental Law*, *1*(3), 270–277.

Schreier, M. (2018). Sampling and Generalization. In U. Flick, *The SAGE Handbook of Qualitative Data Collection* (pp. 84–97). SAGE Publications Ltd.

https://doi.org/10.4135/9781526416070.n6

Schumacher, G., & Juniper, L. (2013). Coal utilisation in the cement and concrete industries. In D. Osborne (Ed.), *The Coal Handbook: Towards Cleaner Production* (Vol. 2, pp. 387–426). Woodhead Publishing. https://doi.org/10.1533/9781782421177.3.387

Senior, A., Britt, A., Summerfield, D., Hughes, A., Hitchman, A., Cross, A., Champion, D., Huston, D., Bastrakov, E., Sexton, M., Maloney, J., Pheeney, J., Teh, M., & Schofield, A. (2021). *Australia's identified mineral resources 2020*. Geoscience Australia. https://doi.org/10.11636/1327-1466.2020

Sianes, A. (2017). Shedding Light On Policy Coherence for Development: A Conceptual Framework. *Journal of International Development*, *29*(1), 134–146. https://doi.org/10.1002/jid.2977

Siitonen, L. (2016). Theorising Politics Behind Policy Coherence for Development (PCD). *The European Journal of Development Research*, *28*(1), 1–12. https://doi.org/10.1057/ejdr.2015.76

Stafford-Smith, M., Griggs, D., Gaffney, O., Ullah, F., Reyers, B., Kanie, N., Stigson, B., Shrivastava, P., Leach, M., & O'Connell, D. (2017). Integration: The key to implementing the Sustainable Development Goals. *Sustainability Science*, *12*(6), 911–919. https://doi.org/10.1007/s11625-016-0383-3

Stayner, T. (2021, November 10). Scott Morrison warned against relying on 'unproven' carbon capture and storage technology. *SBS News*. https://www.sbs.com.au/news/article/scott-morrison-warned-against-relying-on-unproven-carbon-capture-and-storage-technology/ma8asipnv

Steffen, W., Hughes, L., Bradshaw, S., Arndt, D., & Rice, M. (2021). *Aim High, Go Fast: Why Emissions need to Plummet This Decade*. Climate Council of Australia.

Stevenson, H. (2008). Creating a Climate of Convenience: Australia's Response to Global Climate Change (1996-2007). *Energy & Environment*, *19*(1), 3–20.

Stutzer, R., Rinscheid, A., Oliveira, T. D., Loureiro, P. M., Kachi, A., & Duygan, M. (2021). Black coal, thin ice: The discursive legitimisation of Australian coal in the age of climate change. *Humanities and Social Sciences Communications*, *8*(1), 1–9. https://doi.org/10.1057/s41599-021-00827-5

Talberg, A., Hui, S., & Loynes, K. (2016). *Australian climate change policy to 2015: A chronology*. Parliament of Australia.

Tasmania Park and Wildlife Service. (2022). *Tasmanian Wilderness World Heritage Area (TWWHA)*. Tasmania Parks and Wildlife Service. https://parks.tas.gov.au/explore-our-parks/tasmanian-wilderness-world-heritage-area-(twwha)

Tasmanian Climate Change Office. (2017). *Climate Action 21 Tasmania's Climate Action Plan 2017-2021*. Department of Premier and Cabinet.

Tasmanian Climate Change Office. (2021). *Independent Review of the Climate Change (State Action) Act 2008, Tasmanian Government Response 2021*. Department of Premier and Cabinet.

Tasmanian Economic Regulator. (2020). *Energy in Tasmania Report 2019-20*. Office of the Tasmanian Economic Regulator.

Tasmanian Government. (2022). *Climate Change (State Action) Act 2008*. Tasmanian Legislation. https://www.legislation.tas.gov.au/view/html/inforce/2008-12-01/act-2008-036#HP2@HD3@EN

Taylor, A. (2021a, June 4). *2021 Australian Energy Statistics (Electricity)*. Department of Industry, Science, Energy and Resources. https://www.minister.industry.gov.au/ministers/taylor/media-releases/2021-australian-energy-statistics-electricity

Taylor, A. (2021b, November 12). *Modelling and analysis for long term emissions reduction plan*. Ministers for the Department of Industry, Science, Energy and Resources. https://www.minister.industry.gov.au/ministers/taylor/media-releases/modelling-and-analysis-long-term-emissions-reduction-plan

Taylor, A. (2022, March 29). *2022-23 Budget backs Australian industry, energy security and net zero emissions*. The Hon Angus Taylor MP. https://www.minister.industry.gov.au/ministers/taylor/media-releases/2022-23-budget-backs-australian-industry-energy-security-and-net-zero-emissions

The Climate Council. (2019). *Climate cuts, cover-ups and censorship*. Climate Council of Australia Limited.

The Commonwealth of Australia. (2022). *Budget Paper No.2 2022-2023*. The Commonwealth of Australia. https://budget.gov.au/

The World Bank. (2021). *Extractive Industries*. World Bank. https://www.worldbank.org/en/topic/extractiveindustries/overview

Thomas, G. (2011). A Typology for the Case Study in Social Science Following a Review of Definition, Discourse, and Structure. *Qualitative Inquiry*, *17*(6), 511–521. https://doi.org/10.1177/1077800411409884

Tight, M. (2017). *Understanding Case Study Research: Small-scale Research with Meaning*. SAGE Publications Ltd. https://doi.org/10.4135/9781473920118

TMEC. (2022). *The History of TMEC*. Tasmanian Minerals, Manufacturing & Energy Council. https://tmec.com.au/tmec-history/

Tourism Tasmania. (2022). *Discover Tasmania*. Discover Tasmania.
https://www.discovertasmania.com.au/home

Tranter, B. (2013). The Great Divide: Political Candidate and Voter Polarisation over
Global Warming in Australia. *Australian Journal of Politics & History*,
59(3), 397–413.

Uibu, K. (2022, May 2). Tasmania now removing more carbon dioxide from the
atmosphere than it's emitting, researchers say. *ABC News*.
https://www.abc.net.au/news/2022-05-03/tas-carbon-negative-emission-levels-
credited-to-stopping-logging/101032008

UN. (2002). *World Summit on Sustainable Development* (Resolution A/CONF.199/20).
United Nations.

UN. (2012). *The Future We Want* (Resolution A/RES/66/288). United Nations.

UN. (2015a). *Paris Agreement*. United Nations.

UN. (2015b, December). *Chapter 1: Getting to know the Sustainable Development
Goals*. SDG Guide. https://sdg.guide/chapter-1-getting-to-know-the-sustainable-
development-goals-e05b9d17801

UN. (2021). *COP26 Outcomes*. UN Climate Change Conference (COP26) at the SEC –
Glasgow 2021. https://ukcop26.org/the-conference/cop26-outcomes/

UN. (2022a). *17 Goals to Transform Our World*. United Nations; United Nations.
https://www.un.org/en/climatechange/17-goals-to-transform-our-world

UN. (2022b). *SDG Indicators*. Sustainable Development Goals.
https://unstats.un.org/sdgs/metadata/?Text=&Goal=13&Target=

UN. (2022c). *The Climate Crisis – A Race We Can Win*. United Nations, Shaping Our
Future Together; United Nations. https://www.un.org/en/un75/climate-crisis-
race-we-can-win

UN. (2022d). *What is the Kyoto Protocol?* United Nations Climate Change.
https://unfccc.int/kyoto_protocol

UN DESA. (2022a). *Goal 13 Take urgent action to combat climate change and its
impact*. United Nations. https://sdgs.un.org/goals/goal13

UN DESA. (2022b). *Multi-stakeholder partnerships and voluntary commitments*.
United Nations Department of Economic and Social Affairs.
https://sdgs.un.org/topics/multi-stakeholder-partnerships-and-voluntary-
commitments

UN DESA. (2022c). *THE 17 GOALS | Sustainable Development*. United Nations.
https://sdgs.un.org/goals

UNESCO. (2013). *Tasmanian Wilderness*. UNESCO World Heritage Centre. https://whc.unesco.org/en/list/181/

University of Oslo. (2022). *NVivo*. University of Oslo. https://www.uio.no/english/services/it/research/data-collection-and-analysis/nvivo/index.html

UNSDG. (2022). *Leave No One Behind*. United Nations Sustainable Development Group. https://unsdg.un.org/2030-agenda/universal-values/leave-no-one-behind, https://unsdg.un.org/2030-agenda/universal-values/leave-no-one-behind

UNSSC. (2022). *The 2030 Agenda for Sustainable Development*. United Nations.

Van Zeijl-Rozema, A., Cörvers, R., Kemp, R., & Martens, P. (2008). Governance for sustainable development: A framework. *Sustainable Development*, *16*(6), 410–421. https://doi.org/10.1002/sd.367

Vass, T., Levi, P., Gouy, A., & Mandova, H. (2021). *Pulp and Paper*. International Energy Agency. https://www.iea.org/fuels-and-technologies/pulp-paper

Voß, J.-P., & Kemp, R. (2006). Sustainability and Reflexive Government: Introduction. In *Reflexive Governance for Sustainable Development*. Edward Elgar Publishing. https://www.elgaronline.com/view/9781845425821.00009.xml

Wadanambi, R. T., Wandana, L. S., Chathumini, G. L., Dassanayake, N. P., & Preethika, D. D. P. (2020). The effects of industrialization on climate change. *Journal of Research Technology and Engineering*, *1*(4), 86–94.

WCED. (1987). *Our Common Future: Report of the World Commission on Environment and Development* (United Nations General Assembly Document A/42/427). United Nations General Assembly.

Williams, C., & Millington, A. (2004). The Diverse and Contested Meanings of Sustainable Development. *The Geographical Journal*, *170*, 99–104. https://doi.org/10.1111/j.0016-7398.2004.00111.x

Wilson, S. (2021, November 9). *Saul Griffith: Biden's renegade climate advisor from Wollongong drops the best ever climate bomb!* https://podcasts.apple.com/au/podcast/wild-with-sarah-wilson/id1548626341

WMO. (2021, October 29). *State of Climate in 2021: Extreme events and major impacts*. World Meteorological Organisation. https://public.wmo.int/en/media/press-release/state-of-climate-2021-extreme-events-and-major-impacts

World Bank. (1992). *World Development Report 1992: Development and the Environment*. World Bank. https://doi.org/10.1596/0-1952-0876-5

WWF Australia. (2021, October 26). *WWF welcomes net zero commitment and calls for urgent action in this decade*. World Wildlife Fund Australia.

https://www.wwf.org.au/news/news/2021/wwf-welcomes-net-zero-commitment-and-calls-for-urgent-action-in-this-decade

Yin, R. (2014). *Case Study Research Design and Methods* (5th ed.). SAGE Publications, Inc.

Yu, P., Xu, R., Abramson, M. J., Li, S., & Guo, Y. (2020). Bushfires in Australia: A serious health emergency under climate change. *The Lancet Planetary Health*, *4*(1), e7–e8. https://doi.org/10.1016/S2542-5196(19)30267-0

Appendix 1

Information letter for interviews

Are you interested in taking part in the research project:
"She'll be right mate: Australia's response to sustainable development"

This is an inquiry about participation in a research project where the main purpose is to investigate the relationship between the coal mining industry and sustainable development, specifically climate change. In this letter we will give you information about the purpose of the project and what your participation will involve.

Purpose of the project
This is a master's thesis that aims to shed light on the relationship between coal mining and the climate crisis following the Climate Change Conference in Glasgow in November 2021. This study addresses the main question:
- How and to what extent is there policy coherence for sustainable development in Australia?

And sub questions:
- How has the federal government addressed policy for the SDGs, and to what extent do mining lobby groups influence climate change policy?
- Why does Tasmania continue to mine coal and to what extent is there political commitment and leadership in Tasmania to reduce carbon emissions?

To answer these questions, I will investigate of the role and perspectives of actors involved: activists, lobby groups, government, and citizens. This study aims to contribute to the understanding of how countries are trying to do both coal mining and achieve sustainable development and how different actors collaborate on this.

Who is responsible for the research project?
The Centre for Development and Environment at the University of Oslo is the institution responsible for the project.

Why are you being asked to participate?
You are being asked to participate as you are either a Tasmanian resident, a Fingal Valley resident, an ex-state government mining regulator or a civil society organisation. There are approximately 15-25 people being asked to participate with the purpose of understanding different perspectives regarding the mining industry in Tasmania.

What does participation involve for you?
Participation involves an interview, either in person, online or over the phone, if permission is granted it will be audio recorded. The personal information required from the participant will be the city they live in. If you choose to participate the interview will take approximately 20-30 minutes. The questions will be based on the participant's perception on coal mining and the benefits or disadvantage they believe coal mining has in Tasmania.

Participation is voluntary
Participation in the project is voluntary. If you chose to participate, you can withdraw

your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

Your personal privacy – how we will store and use your personal data
We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).
- The people who will have access to your personal data is myself and my supervisor Professor Dan Banik.
- Your name and contact details will be replaced with a code, which will be stored separately from the rest of the data collected and be stored on a research server which is locked away.
- The participants will not be recognisable in the publication.
- Personal data will be processed in Tasmania, Australia unless the interviews are conducted online whilst in Oslo.

What will happen to your personal data at the end of the research project?
The project is scheduled to end in May 2022, at this time the identification key will be deleted, and personally identifiable information all be removed, re-written or categorized. Any sound or video recordings will be deleted.

Your rights
So long as you can be identified in the collected data, you have the right to:
- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

What gives us the right to process your personal data?
We will process your personal data based on an agreement with the Centre for Development and Environment and NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Where can I find out more?
If you have questions about the project, or want to exercise your rights, contact:
The Centre for Development and Environment via Dan Banik: Dan.Banik@sum.uio.no, +47 93696583
Isobella Reid: bellar68@gmail.com, +61 473 525 256 (Australia), +47 466 46 523 (Norway)
NSD – The Norwegian Centre for Research Data AS, by email: (personverntjenester@nsd.no) or by telephone: +47 53 21 15 00.

Appendix 2

Interview guide

Semi structured interviews - example guide for Tasmanian residents group of the study

Background information
- What area of Tasmania do you live in?
- Are you a member of any environmental or mining groups? (Provide examples if needed)

The mining industry
- Are you aware of the Cornwall Coal mine in the Fingal Valley?
- If yes – what do you know about it? E.g. do you what the coal is used for.
- Do you see coal mining as positive, negative or both for the state of Tasmania? And why?
- If promoting needed - discuss environmental concerns, employment, coal as a source of energy

The climate crisis / renewable energy
- What is your view of the climate crisis?
- Depending on their answer have a conversation about their view and ask, e.g. what are their biggest concerns about the climate crisis or why is it not a concern for them.
- Are you aware of the effects of coal mining on the climate crisis?
- Do you worry about the effects of coal mining on the environment?
- Do you believe the economic benefits of coal mining outweigh the environmental disadvantages?
- Are you aware that Tasmania has substantial renewable energy resources?
- Do you think companies should still be using coal when there is renewable energy available?

Role of government
- What do you think is the role of government in taking climate change action and in transitioning to renewable energy?
- Is there anything you would like to see changed/anything you think the government could improve on?

Concluding remarks
- Is there anything you would like to add?

Appendix 3

Consent form

I have received and understood information about the project *She'll be right mate: Australia's approach to sustainable development* and have been given the opportunity to ask questions. I give consent:

    ◯ to participate in an interview

I give consent for my personal data to be processed until the end date of the project, approx. 31st May 2022.

(Signed by participant, date)