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Teaching Case #16:

Conservation and Sustainability:

Hydroelectricity in Tasmania

Developing an Erasmus Mundus Joint Master's Degree on Sustainable Natural Resource Management and Long-run Economic Development (EMERALD).

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Conservation and Sustainability: Hydroelectricity in Tasmania

Introduction: Sahul at the Crossroads of Development, Sustainability, and Conservation

Forty thousand years ago, a frozen tundra spanned an ancient landmass, a paleocontinent, at the southern reaches of the Earth, known today as Sahul. At the very southern tip of Sahul, mighty glaciers ground their way through the landscape beneath the icy terrain, and around them, life thrived. Unique animals inhabited the rocky grasslands, and human beings gathered in the sheltered valleys and warm caves of the rocky cliffs. Perhaps unbeknownst to them, these people hunted, cooked, made clothes, created art, and lived their lives at the southernmost point of human migration during the Ice Age. As global temperatures rose over time, the Ice Age ended, the sea levels rose, and Sahul's coastline became divided. Six thousand years ago, as the ancient land bridges submerged beneath the ocean, Sahul gave way to the landmasses of Australia, New Guinea, and at its southernmost tip, Tasmania. As a post-glaciation island in the Southern Ocean, the humans, animals, and plants of the southern Sahul landmass became isolated, and as time went by, evolved into some of the world's most unique cultures, species, and landscapes. In fact, this remote southern corner of the globe became home to luscious forests filled with giant conifer trees, staggering gorges, crystal lakes, powerful rivers, mineral-rich mountains, and rare remnants of prehistoric ecologies. The island preserved archaic species found nowhere else in the world – the thylacine, or the 'Tasmanian Tiger', and the feisty marsupial 'Tasmanian Devil' – and conserved unusual species of egg-laying mammals like platypus and echidna. The Palawa people, who had continued to live in the rugged and fertile landscape of the island long after the Ice Age, had grown to a population of up to ten thousand, spread out over nine known nations.

In the later twentieth century, this remote region would become would find itself at the centre of one of the world's landmark environmental controversies. Located in a struggling regional Australian state, but endowed with immense natural resources, Tasmania saw a world-scale standoff between the forces of industrial expansion, and a rising movement for natural conservation from the 1970s. At the heart of this debate lay a wild river, the mighty Franklin, and a public hydroelectric energy producer that could turn the economic fortunes of the disadvantaged state around. The story of the Hydro Electric Commission in Tasmania opens important debates about the complex issues at stake when we discuss sustainability.



FIGURE 1: FRANKLIN RIVER. PHOTO: WWW.TASMANIANEXPEDITIONS.COM

Van Diemen's Land: Colonial Fortunes, Settlement Struggles

Several millennia after Sahul fragmented, at the turn of the nineteenth century, Europeans saw economic potential in the island they called Van Diemen's Land (now Tasmania). In her cold and life-rich waters, adventurous British businessmen could make enormous profits from harvesting whales. Southern Pacific whaling was just opening to British participants in the late eighteenth century. With an embargo placed on exporting American whale oil to Britain after the War of Independence, and the waning of the East India Company's monopoly on trade in Asia, real opportunities existed for those able to invest in the new Australian colonies' potential for whaling. With an overflow of prisoners to export for incarceration in the colonies and a shortage of suitable ships to take them, the British government was eager to take up offers by wealthy whaling magnates, such as Samuel Enderby, to charter their ships. Outward bound with convicts destined for the penal settlements in Sydney and Hobart, these ships returned with lucrative cargoes of whale oil. Hobart Town, on the southern coast of Van Diemen's Land, and its Derwent River estuary, was one of the most abundant near-shore whaling grounds in the South Pacific. The colony grew wealthy with whaling money and became built up with convict labour, and soon was expanding into the rest of island, which proved to be rich agricultural and pastoral land and a highly valuable source of timber. Huon and King Billy Pines, thousands of years old and staggering at heights over thirty metres, were premium timbers for shipbuilding and construction. Further north, the township of Launceston consolidated the island's agricultural centre, with high quality wool and hardy wheat varieties, steadily growing the success of settler-farmers. Launceston and its port, like Hobart, exported oil and seal skins, as well as the high-demand commodities of wool, wheat, and timber. Colonial expansion was well underway, and by 1850, two-thirds of the 70,000 population were either emancipated convicts or free settlers, and

4.25 million acres of land had been distributed for agriculture.¹ But by 1856 when Van Diemen's Land was formally renamed Tasmania, and the Palawa people had been dispossessed, decimated, and relocated, the colony's wealth and economy were hitting their peaks.

In the middle of the nineteenth century, the colony of Tasmania was facing serious problems. The rapid founding and expansion of colonial industries was facing the upper limits of colonial growth. In the south of the island, the town of Hobart was slowing in its formerly illustrious growth as the oil-yielding whales grew scarce. The whaling industry followed the diminishing number of whales into the warm equatorial waters of the Pacific, taking its money with it. The golden age of Hobart whaling was over, and decline set in. Unemployment rose, shore-based industries went bankrupt, skilled shipbuilders and architects followed the wealth to other places, and workers began to move away as the Victorian Gold Rush on the mainland of Australia promised a better future. In the northern areas of the island, the backbone industries of the colonial settlements, wheat and wool farming, were being hammered by bad harvests, freezing weather, livestock disease, and the struggles for cheap and accessible labour once the convict system dismantled by the 1860s. Tasmania's dependency on world markets for its exports had contributed to its swift economic growth, but faced with a downturn in the global price for wool, and competition from other Australian states that could produce more, better, and cheaper wheat, Tasmanian communities were plunged into poverty.

By the 1870s, new hope was on the horizon for impoverished Tasmanians. On the remote West Coast of the island, the wild forests of Mt Bischoff revealed significant quantities of tin. And so, Tasmania began a new phase of mining, with the discoveries of silver, lead, and copper over the next decade. Private investment began to return to Tasmania, and companies like the Mt Lyell Copper Mining Company, operating at Queenstown on the west coast, drove development, employment, and expansion into the mineral-rich mountains, which were densely forested and posed challenging, jagged terrain. But the newly improved standards of living in Tasmania, provided by mining jobs and the wealth of mineral exports, were short lived. Again, dependency on world markets was to work against Tasmanian development, when in the 1890s recession struck, mineral prices dropped along with the demand of mineral exports, and unemployment spiked in Tasmania. Mines closed, and once-thriving communities became ghost towns. Again, remote Tasmanian communities faced the cold hand of poverty. With repeated failures to engage with global export markets, Tasmanians had to look to other means to survive and develop the state's distressed economy. The answer lay in one of the island's richest endowments – water.

Noisy Waters: The Great Lakes Hydro Scheme

Tasmania's post-glacial geography provided steep mountains, thundering rivers, majestic waterfalls, large lakes and catchments fed by over 900 million tonnes of pristine rainfall annually. This was a perfect setting for exploring the potential of an emerging technology of the 1880s – hydroelectricity. Settlers had used rustic forms of hydropower since settlement began, in the form of water wheels to power flour mills, smaller-scale mining, and other basic industries. As the use of electricity spread to the Australian colonies, however, small enterprises correspondingly had begun trialing hydroelectric energy production in the dramatic terrains of the Southern Hemisphere. Businessmen in Australia watched with interest in the mid-1880s as

the Reefton Electric Light and Power Company grew steadily on its production of electricity powered by the Inangahua River in New Zealand. Limited in its reach, and long before the arrival of city power grids to the Southern colonies, however, this pioneering effort at hydroelectricity production was confined to illuminating local hotels, albeit with a highly positive reception.



FIGURE 2: WATER WHEEL POWERED FLOUR MILL, NEW TOWN, TASMANIA, PHOTO: ITEM 24, COLLECTION 2018/5 -PHOTOGRAPHS OF EDWARD VERREL, UNIVERSITY OF TASMANIA LIBRARY SPECIAL AND RARE COLLECTIONS



FIGURE 3: WATER WHEEL AT ANCHOR TIN MINE, NORTHEAST TASMANIA, PHOTO: OPEN ACCESS REPOSITORY (EPRINTS)

But industries in Tasmania, based in the township of Launceston, saw opportunity despite the limitations, and successfully trialed a locally council-operated hydro-electric power station on the nearby South Esk River at Duck Reach in 1895, only the second hydroelectric station in the Southern Hemisphere, and the first publicly owned.



FIGURE 4: DUCK REACH STATION, CATARACT GORGE, LAUNCESTON, TASMANIA C.1900, PHOTO: BENJAMIN HURST TAYLOR AND LAURA JANE TAYLOR, IXL STUDIO, PICTURE IPSWICH, ACCESSED 21 NOVEMBER 2023

While this system proved successful in the immediate vicinity, the major question regarding how Tasmania as a state could benefit more widely from hydroelectric energy production remained. The Duck Reach station could only supply a limited amount of power to the immediate area, as technology for transporting electric power was reliant on direct-current (DC) systems that could only transport power over short distances. This was a question plaguing other fledgling hydropower stations around the world. Hydroelectric technology – where it was available – was highly appealing as a cheap source of power for industries, and innovators in the United States, Europe, and the United Kingdom rapidly developed solutions to the limitations of scale and transport. The 1890s saw massive advances in how much power could be produced by different models of generators, and how widely it could be transported through current transmission lines. The so-called ‘wars of the currents’ of the 1890s saw the ultimate victory of the alternate-current (AC) transmission system, championed by American entrepreneur George Westinghouse, over the DC system lead by Thomas Edison. To prove the safety and workability of the AC technology, a Hungarian company called Ganz Works illuminated the City of Rome with electric lighting. Shortly after, The Westinghouse Electric Company built the first commercial AC power system in the United States, in Buffalo, New York. By the end of the nineteenth century, higher voltage supply was becoming more possible, with the invention of the turbogenerator – a machine that converts mechanical power from a rotating turbine shaft, perfect for hydro-energy, to electric power - that could handle megawatt capacities, and compatible transmission lines, that were introduced for AC systems in 1901. So, in a very short time, the potential of hydropower for generating electricity grew immensely, and this technology soon found its way to Tasmania.

This was cutting-edge global industrial innovation, and a few key people in the economically struggling Australian state were excited by the opportunities offered by harnessing Tasmania’s geography to create more jobs, power more industries cheaply, and increase exports from a strong and efficient industrial sector. One such person was a mathematics professor at the University of Tasmania, named Alexander McAulay. He was convinced that the elevated and steep Great Lake region of central Tasmania could be harnessed for hydropower, and that a hydroelectric power station in the area could make Tasmania a competitive industrial and manufacturing centre in Australia. In 1905, McAulay even bought a large block of land in the Tasmanian highlands to experiment and explore his theory. This land was called Waddamana – an Aboriginal name aptly translated as ‘noisy water’.²



FIGURE 5: GREAT LAKE, CENTRAL HIGHLANDS, TASMANIA, PHOTO: [HTTPS://WWW.JKSTAYS.COM/EN/2297144/MIENALIaweeneegreat-lake](https://www.jkstays.com/en/2297144/mienaliaweeneegreat-lake)

McAulay's research and planning was compelling, but the Tasmanian government was still somewhat wary of new technology. The infrastructure required was immense and given the inaccessible terrain around Waddamana and the Great Lake region, difficult and expensive to build. So McAulay turned to the burgeoning private sector, and the mainland-Australian businessmen who were excited by new advances in mineral industries. He got in touch with an entrepreneurial metallurgist, James Hyndes Gillies, who had just set up a zinc production plant at Broken Hill, Victoria, to use the mining waste there to trial his new electrolytic manufacturing technique. Gillies had floated his company in 1908 as Complex Ores Co., but it faced the persistent issue of finding a cost-effective power source for the energy-intensive process of turning mine tailing into zinc. McAulay's hydropower station idea at Waddamana provided the perfect solution: it was exactly the kind of cheap energy needed for power-intensive zinc production. There was, after all, a decent supply of mining waste, and McAulay had always envisioned hydrotechnology as a boost to Tasmanian industry. The plan was to build a dam at a site called Miena, on Great Lake, and divert the water via a raised pipeline down the steep side of the plateau to Waddamana, where it would be converted into electric energy through turbines and new turbogenerators. McAulay and Gillies began work constructing their power station in 1909.³ After travelling to London to raise capital amongst eager investors, and hiring engineers from the British Westinghouse Co., Gillies and McAulay were able to establish the Hydro Electric Power and Metallurgical Company, as a subsidiary of the Complex Ores Co. in 1911, but almost immediately, the company ran into trouble.

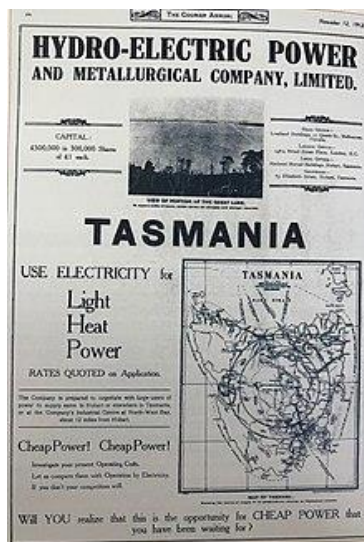


FIGURE 6: ADVERTISEMENT FOR THE HYDRO ELECTRIC POWER AND METALLURGICAL COMPANY, PHOTO: WIKIMEDIA COMMONS



FIGURE 7: MIENA ON GREAT LAKE, PHOTO: MIENAVILLAGE.COM.AU

Within three years, the Hydro Electric Power and Metallurgical Company had faced design problems, materials complications, hostile weather, arguments with other industrialists, spiraling costs, and internal disagreements to declare bankruptcy in 1914. Gilles moved along into his other projects, and McAulay was left holding the pieces of his hydropower project. The construction of Waddamana power station was, however, well underway and the Tasmanian government stepped in to claim the project with its newly formed Hydroelectric Department.⁴ Securing government control over energy supply and the minerals industries it powered would be an enormous asset for the Tasmanian state during the First World War. While it had a number of formal names over the years, notably becoming the Hydro Electric Commission and the Hydroelectric Corporation later, this state-owned enterprise was simply known as ‘The Hydro’ in Tasmania.⁵

The Hydro oversaw the completion and opening of Waddamana Power Station in 1916.⁶ Although a government branch, that absorbed the existing council-operated station at Duck Reach, the Hydro collaborated with private companies, such as Amalgamated Zinc (Victoria) and the Mt Lyell Mining and Railway Company (Tasmania) to finance and construct Waddamana and a second station at Lake Margaret. Very soon, things started to look up. Waddamana became a vibrant town, with roads and tramways built to carry people, supplies, and machinery to the new

Hydro village. Tasmanian people took jobs gladly at Waddamana, moving into the houses provided by the Hydro, with their families.

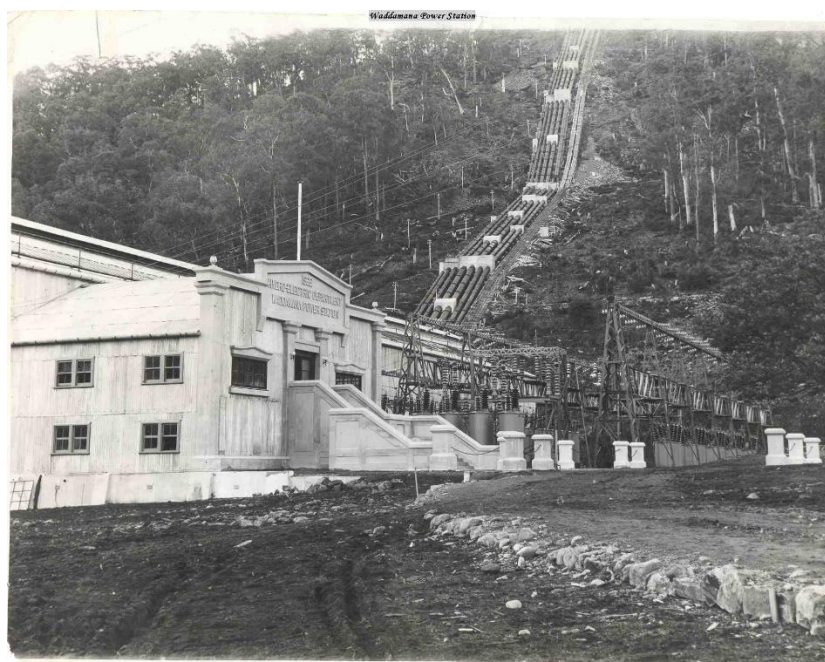


FIGURE 8: WADDAMANA HYDROELECTRICITY STATION, PHOTO: ENGINEERS AUSTRALIA PORTAL WWW.PORTAL.ENGINEERSAUSTRALIA.ORG.AU/HERITAGE/WADDAMANA-POWER-STATION-1916

The success of Waddamana Hydro Station was encouraging for the government. Hobart and Launceston homes were now lit up with hydroelectric power, and stores in the cities were bright and appealing. As a world centre for hydroelectric technology, Tasmania and its university attracted researchers and funding, including a whopping £3000 grant for an Electrical Engineering laboratory.⁷ Despite the loss of Tasmanian lives in the First World War, the Tasmanian economy was boosted to new heights with increased demands for its mineral exports, in particular copper, driven by cheap hydropower. Even in the aftermath of the First World War, with some economic slumping, Tasmanian industry was able to expand and employ the returned servicemen and laid-off miners at new factories for Cadbury's chocolate, Risdon Zincworks, and textile factories. By 1918, a bustling community had grown in Waddamana, with bakeries, livestock farms, and a school. There were even tennis courts, a dance hall, film screenings, and cricket matches for everyday people to enjoy.⁸

But the economic strength that carried Tasmania through the First World War couldn't be sustained in the trials of the Great Depression. Once again, the crash of global prices hit Tasmania and its export-economy hard. Unemployment rose to 30%, and the state government's economic policies in the Great Depression were famously terrible, worsening the crisis for already devastated Tasmanians.⁹ Economic recovery during the rearmament phase in the lead up to the Second World War was a bittersweet situation for the regular people of Tasmania, for while they saw some economic recovery on a higher level, many of their relations were lost to the war, and at home they were placed on limited food rations for the war effort.

The Hydro took on new significance for Tasmania in the postwar period. The hydroelectric scheme was the cornerstone of the government's plan to grow and strengthen the state's

economy. The state's population expanded with postwar immigration – workers coming from Poland, Germany, and the Baltic states to build and expand the Hydro schemes, as demand for electricity grew rapidly in the effort to rebuild after the war. New community members moved into towns at the outer reaches of the settlement, to construct dams, station buildings, roads, and railways, as the Hydro pushed the capacity of the Great Lake region to produce more and more power. From the mid-1950s until the early 1970s, four new hydropower stations were constructed, as well as a huge new system known as the Mersey-Forth Scheme. This expanded hydropower system powered new industries, such as aluminium smelting, industrial logging, and paper processing. The Tasmanian economy in the 1960s and 1970s was booming with its export manufacturing. The people were relatively well-off, well employed, and educated. All this was anchored on the government's pushing of hydroelectric energy production, to the point that the Tasmanian Premier, Eric Reece, was nicknamed 'Electric Eric' for his support of the Hydro.¹⁰ Indeed, the Hydro, under its full name, the Hydro Electric Commission, was a government business enterprise, or a 'state owned enterprise (SOE)', that generated profit for the government, controlled the island's natural water resource, and provided an essential service to the people. SOEs are nearly always associated with the twin goals of growing the revenues of a government and facilitating development, with limited assistance from the private sector. Establishing an SOE for natural resource industries can help a provincial government to generate and retain wealth in their region, especially if industries are in their early stages or nonexistent, so that the local population can benefit from industrial, technological, transportation, or communications improvements without the assistance of private investment or foreign direct investment (FDI) that risked wealth leaving the region or the government losing control over the industry. Common examples of SOEs include railways, postal services, broadcasting networks, banking, healthcare services and of course, natural resource industries. The Hydro in Tasmania was one such SOE, and it had certainly been a massive factor in the acceleration of Tasmanian economic development.

By the 1970s, however this golden age of industrial growth was exceeding the capacity of the central highlands Hydro scheme. More industry needed more power, as did the increasing number of homes and shops, in a growing number of towns. The Hydro needed to find ways to produce more power to meet these needs. The Hydro had to expand into other areas of Tasmania to harness the hydropower of other mountains and rivers. So, with government support, the Hydro surveyors began examining rivers and catchments in the southwest of the Tasmanian island. Despite the value of hydropower to the Tasmanian economy, this expansion plan pushed into wild natural regions of the island that many in the public – and international community – felt ought not to be industrialised.

The Gordon-Pedder Scheme: Expanding into the Southwest

By the 1970s, producing hydroelectricity had been fundamental to the economic development of the Tasmanian state for nearly a century. The Hydro had been celebrated as the tool for rebuilding after the wars, for providing struggling Tasmanians with employment, enhancing their homes and cities, and above all, for harnessing and maximising the economic potential of Tasmania's resources. In the rest of the world, however, far away from the remote forests and gorges of Tasmania, mentalities were changing. The two World Wars had been immensely

destructive, and fervour of postwar economic recovery and industrial development plans had taken their toll on natural environments around the world. People were beginning to feel concerned about humanity's impact on nature. In the face of heavier industrialisation and increasingly larger deforestation, the idea of conservation of wild places began to gain ground during the 1970s. In 'developed' countries like the United States, the United Kingdom, and indeed Australia, more and more people were living in cities and suburbs, working in urban industries and office jobs, reliant upon wages and stores stocked with food to buy. Romantic notions of 'the wilderness' – pristine places still free from human disturbance – became powerful ideas that were reinforced by the growing awareness of the limited character of natural resources. The scale of industrial growth was expanding, globalising, and increasingly consolidating in the hands of fewer and fewer corporations, often working in tandem with governments to exploit the resources of wild spaces.

At the heart of this new way of thinking was a critical question: is a wild place *valuable* simply for its existence? Posing such a question drastically contradicted 'economic development' and 'industrial growth' mindsets of the postwar policymakers, for a space untouched was inherently a space uncommodified, and therefore of little economic value. Conservation – the *preserving* of natural spaces – was initially an uneasy companion with 'sustainability', or the idea that natural resources *should be utilised* in a responsible way. This conflict of ideals was especially acute in developing economies, in which the economic growth of the nation often relied heavily on converting natural endowments located in wild places, to exportable commodities. These were central themes of the 1972 UNESCO Convention Concerning the Protection of the World Natural and Cultural Heritage ('World Heritage Convention'). Resulting from this convention, the UNESCO World Heritage List outlined ten criteria for wild places to meet as worthy of protection for their natural heritage and importance to the world. Sites could be listed as either 'Natural' or 'Cultural' heritage initially, but soon a category of 'Mixed' was introduced to capture the significance of natural spaces to peoples who had lived there. The first site inscribed on the World Heritage List in 1978 was the Galapagos Islands in the Eastern Pacific. These remote islands were famous for their turtles and important natural heritage, being the site that fascinated evolutionary scientist Charles Darwin. This listing was followed by a cultural heritage listing, the site of a 1000-year-old Norse settlement in Newfoundland, Canada, called L'Anse aux Meadows Historic Site. Also in Canada, the natural heritage of Nahanni National Park in the remote Northwest Territories, was also recognised with inscription on the UNESCO World Heritage List. The creation of the UNESCO World Heritage List was seen as a way to navigate the conflict between sustainability and conservation that became pronounced in the 1970s – to nominate some very special areas as protected, while permitting the use of others for economic gain. It meant that governments and activist groups could appeal to an international organisation if the site became under threat or contested. Often, however, protecting these sites did not obstruct industry; many were no longer industrially significant, such as the Galapagos Islands, formerly a strategically located island for whaling voyages, and Nahanni National Park, which although very remote, was formerly important for fur trading and gold prospecting. Others were cultural heritage sites, such as L'Anse aux Meadows, located in already built-up places, which benefitted from World Heritage Listing to raise awareness, attract funding, and promote tourism.

The Tasmanian wilderness, however, was located precisely at the advancing edge of industrial development as the Hydro sought to expand its operations. The proposed scheme announced in

the early 1970s, called the Gordon-Pedder Scheme, was an ambitious one. It was planned that the Gordon River, one of the largest and most powerful rivers of Tasmania's West Coast, would be dammed with a 140m high concrete arch dam, to create a man-made Lake Gordon, and increase the size of the neighbouring Lake Pedder. While this would create the largest water reservoir in Australia, it also entailed the damming of a majestic wild river, the Gordon, and the flooding of the existing Lake Pedder with two further dams on the Huon and Serpentine Rivers feeding into it. This created problems for the Hydro and the state government that supported its expansion. Lake Pedder was a relatively untouched place. For the few tourists, artists, and scientists who had been flown by small planes to its shores from the postwar period until the 1970s, it was a rare treat to see wave-like pink quartzite sand and glowing mineral-rich waters set amongst dramatic glacially carved mountains and old growth forest. Damming the Gordon River would destroy this primordial environment, forever. When news of the Hydro's plans to flood Lake Pedder reached the groups of environmentalists who had witnessed this remote wonder, they began to argue against it, and promote its conservation to the wider public.



FIGURE 9: LAKE PEDDER, PRIOR TO FLOODING IN 1972, PHOTO: ABC NEWS/ NATIONAL ARCHIVES OF AUSTRALIA

The campaign in the early 1970s to save Lake Pedder became a popular one, igniting conservationists and environmentalists all over the country to join in protest, and they were joined by members of the wider public in their horror that such a lovely place, which very few had seen, could be lost forever. Very few of the protestors from outside of Tasmania, however, knew much about the Hydro and how important it had been for Tasmanians, especially everyday working-class Tasmanians who had experienced the poverty of unemployment and economic hardship. But this also contained a measure of intergenerational conflict amongst Tasmanians. The new way of thinking about conserving the environment was compelling to those who had grown up in the 'booming' decades, who had not lived through the World Wars, but who were the beneficiaries of the strong economy created on the back of the Hydro expansion. For the government and supporters of the expansion, protestors resembled the 'hippies' of the era – idealistic, and well-intentioned, but young and ignorant of the economic realities of the state. The protestors, on the other hand, felt that the scheme would provide only limited value to everyday residents, as most of the power was for industry, and they feared that the wealth from the exported goods it would produce might not directly benefit everyday people. The protestors questioned whether it was worth destroying this natural place for what they perceived to be

limited economic gain. This was a new point of view, for state government had backed their Hydro SOE all the way with the interests of the Tasmanian people in mind, but with the Gordon-Pedder plan and the environmental questions it posed, some Tasmanians felt that the government was acting in its own interests, to increase the profits of its Hydro SOE, contrary to the benefit of Tasmanian society.

Certain groups of protestors in Tasmania began asking whether a state government ought be allowed to order the destruction of irreplaceable natural environments, even if the people stood to benefit economically. The local environmentalist action group Lake Pedder Action Committee (PLAC) who initiated the protest, had joined forces with the political group, United Tasmania Group (UTG), to campaign in the arena of politics. The Tasmanian Premier, 'Electric Eric' Reece, was not interested in the protestors' pleas and in 1972, he revoked the National Park status of Lake Pedder, and it was flooded. In the same year, the UTG contested the state election, and became the first established 'Green Party' in the world to do so. This party would become the Tasmanian Greens, a significant political party in Tasmania, and today part of the third largest political party in Australia, the Australian Greens. No longer a movement only for romantics and idealists, conservation had become a serious political matter.

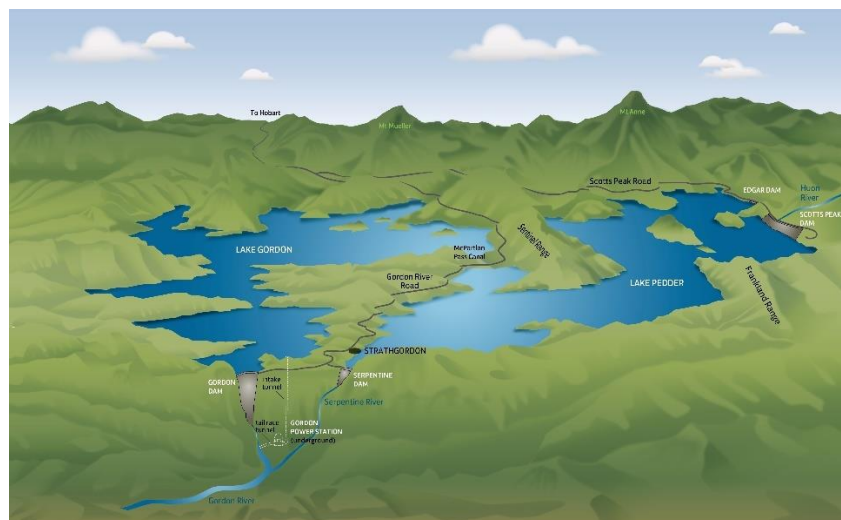


FIGURE 10: DIAGRAM OF THE GORDON-PEDDER HYDRO SCHEME, PHOTO: WWW.HYDRO.COM.AU/OUR-POWER-STATIONS/GORDON-PEDDER



FIGURE 11: GORDON DAM, STRATHGORDON, TASMANIA, PHOTO: WWW.TASMANIA.COM/POINTS-OF-INTEREST/GORDON-RIVER-DAM/

The Franklin Dam Controversy: Conservation versus Renewable Energy

As conservation became a more heated political issue in Tasmania, the success of the Gordon-Pedder Scheme stood in marked contrast to the protest against its implementation. Preserving the wilderness had become a major cause, with the UTG and PLAC, who had fought together against the flooding of Lake Pedder, forming the Tasmanian Wilderness Society, whose membership reached widely across the country and even internationally. Amongst Tasmanians, however, conservation was still a divisive issue when the Hydro announced yet another expansion plan in 1978. This time, however, the proposed project would ignite another level of power struggles. The site of the new damming project was the wild Franklin River. The proposed dam would flood the Franklin Valley and submerge vast areas of forest and mountain wilderness. This happened right at a time when international movements for conservation were gaining momentum.

The predominant way of thinking, however, was still to expand industry and promote economic growth, and there was little compelling reason in the 1970s for the Tasmanian government and the Hydro to think otherwise. The state's economy was stronger than ever, and this was something to celebrate for many people. Many people lived in towns centred upon the Hydro, and still more were directly and indirectly employed through its operations. The Hydro had been fundamental in developing Tasmanian infrastructure and facilitating research and innovation. Expanding its operations seemed like a logical, and beneficial step to take. One of the justifications for the Franklin Dam project was therefore the same as that used for preceding Hydro expansions – more jobs, and economic growth. These elements held considerable weight amongst Tasmanians, who relied heavily on industrial manufacturing and indeed the Hydro itself for their livelihoods. The collective memory of economic struggle had not entirely faded, and many were aware that Tasmania still lagged behind other, larger Australian states in wealth and standards of living. The idea of attracting more industry and therefore jobs to Tasmania with the promise of cheap power had worked despite protest to the Lake Pedder flooding, and many Tasmanians along with the state's government believed it would work again. Furthermore, as the

use of electric power increased, so too did the demand for it, and even with the Gordon-Pedder scheme the Hydro knew that its current capacity could not meet the rising ongoing demand. While protests against the Lake Pedder flooding had made a strong case for conservation, they could not answer to how else power supply could be maintained, much less increased over time. In the late 1970s, therefore, there were convincing reasons why the Franklin scheme were seen to be necessary and a prudent investment in the state's capacity to provide energy as well as employment and growth. Initially, opinion polls indicated that as many as 70% of Tasmanians supported the Franklin Dam project.

But the protestors who had watched the flooding of Lake Pedder were rallying again. The Tasmanian Wilderness Society mobilised its nationwide network of concerned environmentalists, and together the Australian Conservation Foundation rolled out a significantly persuasive publicity campaign against the proposed damming of the Franklin. With the help of the powerful photography of Peter Dombrovskis – later inducted into the International Photography Hall of Fame – and Lithuanian-Australian conservationist and photographer Olegas Truchanas, images of the Franklin River valley were published in major newspapers, with a call to action to write letters supporting the protest, and to not vote for parties that would destroy it. A provocative film, *The Last Wild River*, was screened on two widely viewed television stations. The campaign captured the support of the public, and within the year, thirty thousand letters of support for the protest had been received. In June 1980, the protest against the Franklin Dam gained further momentum, as ten thousand people marched through Hobart in the largest rally the state had ever seen, to compel the government to abandon the Franklin Dam project.

As a result of the protest, the state government tried to offer compromises. It agreed to reinstate National Park status, establishing a new Wild Rivers National Park in Tasmania's southwest, where the Franklin River and ironically, the Gordon also ran. Instead of the Franklin Dam, it proposed the 'Gordon above Olga' scheme, damming at a different location but still within the wilderness area. When this offer was rejected outright by environmentalist groups and the legislative council, the battle lines became drawn between the conservationists who stood by 'no dams' at all anywhere in Southwest Tasmania, and the pro-dam groups, which included the legislative council, the Hydro, and labour unions. The Hydro began a campaign of its own, claiming thousands of jobs would be lost without the dam. At the 1981 Tasmanian Power Referendum, 47% of the electorate voted in favour of the Franklin Dam. The Tasmanian public was divided, and Tasmanian parliament was in a deadlock. In 1981, the Victoria-based senator Donald Leslie Chipp of the Australian Democrats took the matter to the Senate and initiated a national level inquiry into the national and global natural value of Southwest Tasmania, and what responsibility the Federal level held to assist in protecting it. The national-level obligation had been flagged with the discovery of an important cultural site in the Franklin Valley.

As it would transpire, the Franklin Valley itself still held secrets to reveal. With more media attention focused on the area, more information and images of this previously hidden wilderness were being circulated. A few years before, in 1977, the director of the new Tasmanian Wilderness Society, Kevin Kiernan, had been on a rafting trip to survey the Franklin with some colleagues, and had made the film *The Last Wild River*. On this expedition, they had rediscovered

hundreds of caves, and among them, one particularly intriguing cave, which they named Fraser Cave after the Prime Minister Malcolm Fraser, in the hope that it might persuade him to support the ‘no-dam’ campaign. In 1981, the new director of TWS, Bob Brown went with Kiernan back into the valley looking for evidence of a popular story of an escaped convict who allegedly died there. Don Chipp’s senate inquiry prompted a formal archaeological expedition into Fraser Cave, and the results made shockwaves around the world. Inside the cave, archaeologists Rhys Jones and Don Ranson dug a small one-metre pit and revealed one of the richest finds in human paleology.¹¹ Seventy-five thousand human artefacts and over two hundred and fifty thousand animal bones emerged – the traces of the Ice Age people of Sahul.¹² People had lived in the cave over a five-thousand-year timespan, until approximately fourteen and a half thousand years ago. The Franklin Valley was now not only an important wilderness, but it was also a significant site for all of human history. In 1982, as archaeologists from the Australian National University and Tasmania Parks and Wildlife Service continued excavations, Tasmanian Aboriginal leaders Rosalind Langford and Mike Mansell visited Fraser Cave, becoming the first Indigenous people to enter the cave since it was abandoned over fourteen thousand years before. At their suggestion, the cave was renamed Kutikina, or ‘spirit’.¹³



FIGURE 12: ENTRANCE TO KUTIKINA CAVE, PHOTO: WWW.OURTASMANIA.COM.AU/NATURAL-TAS-CAVES.HTML

The rediscovery of Kutikina Cave complicated the protest against the Franklin Dam. Conservationists had been arguing for the ‘timeless wilderness’, preserving the primeval forests and trees of the valley. This image was overturned by archaeologists, who demonstrated that the ancient landmass, Sahul, was in fact not a rainforest, but an icy tundra.¹⁴ It was, however, inhabited by archaeologically significant populations of humans. Several members of the Senate Committee flew into the Franklin Valley to see the archaeological excavations and it presented its report on the *Future Demand and Supply of Electricity for Tasmania and Other Matters*, the ‘other matters’ was primarily archaeology, concluding ‘the caves are of such importance that the

Franklin River be not inundated.¹⁵ The archaeological significance of Kutikina Cave, and the importance of its ‘prehistoric’ status, was not however good news to everyone. undermined the continued presence of the Indigenous people in Tasmania. Tasmanian Aboriginal activists began arguing for their own version of preservation – no dams, and no archaeology.

Tasmanian Aboriginal leader and activist Rosalind Langford became instrumental in the Franklin Dam controversy. She had been elected the Secretary of the Tasmanian Aboriginal Centre in 1982, and was keenly aware of the significance of the Franklin Valley and Kutikina Cave for the living population of Indigenous people, who still faced discrimination and disadvantage in Tasmania. In a massive moment for Indigenous rights and recognition, she took on the conservationists, archaeologists, industrialists, and politicians with her powerful words:

‘You have come as invaders, you have tried to destroy our culture, you have built fortunes on the bodies of our people and now, having said sorry, want a share in picking out the bones of what you regard as a dead past.’¹⁶

Kutikina Cave was declared a sacred Aboriginal site. Excavation work at the site was stopped, forever. This declaration, while frustrating for scientists and conservationists who had garnered support for the ‘no-dam’ campaign with the archaeological finds, proved to be one of the defining moments in swaying the campaign. For as the turbulent year of 1982 unfolded, the natural importance of the Tasmanian Wilderness became combined with its significant cultural heritage. It was heritage that resonated with not only growing Indigenous rights in other places, but also for all of humanity, for the inhabitants of southern Sahul represented the prehistoric ancestors of a significant portion of the global population that migrated over the land bridges during the glaciation, one of the fabled ‘missing links’ in the human past. This meant that applications could be made to UNESCO, for inscribing the Southwest Wilderness on the World Heritage List.

At the national level, meanwhile, Kutikina’s initial namesake, Prime Minister Malcolm Fraser, openly agreed that the Franklin Dam should not be built but declined to formally intervene in a state-level matter, when the Tasmanian government, now lead by pro-industry Robin Gray, overrode all protest yet again to give the green light to the Franklin Dam construction in March 1982. With the famous words ‘we will get on with the job!’, Gray’s government ignored the pending applications to UNESCO World Heritage, and gave the Hydro legal permission to start work, which they did in earnest from July. This put a real sense of urgency on the protestor’s cause. The Tasmanian Wilderness Society began to plan more drastic action, and organised a blockade of the Franklin River, to halt the machinery entering the area. On 14 December 1982, while setting up the blockade at in the remote valley, the Wilderness Society received the news from Paris that their application to UNESCO had been successful. The Tasmanian Wilderness was now inscribed on the World Heritage List.

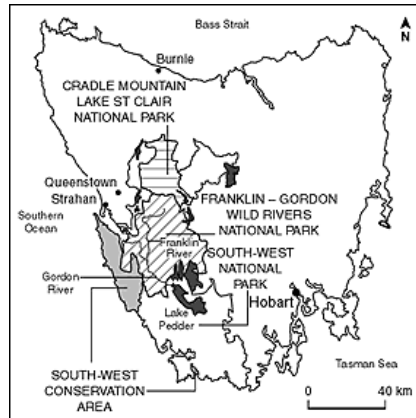


FIGURE 13: MAP OF TASMANIAN WILDERNESS CONSERVATION AREA, 1980S, PHOTO: WWW1.CURRICULUM.EDU.AU

Now armed with a World Heritage Listing and site ‘in danger’, the protestors mounted their ‘blockade’ of the Franklin River from December 1982 until March 1983. This enraged and frustrated the Hydro and the government. By the time it ended, 1272 protestors had been arrested, and 450 of them served sentences. These included renowned British botanist and television celebrity David Bellamy, which brought the blockade to the world’s attention. Furthermore, the Tasmanian Aboriginal leaders, Mansell and Langford, were arrested and charged with ‘trespassing’ at Kutikina.¹⁷



FIGURE 14: POSTER FOR THE FRANKLIN RIVER BLOCKADE: PHOTO: TASMANIAN WILDERNESS SOCIETY/NATIONAL ARCHIVES OF AUSTRALIA OBJ-138236381



FIGURE 15: LINE OF RAFTS AT THE BLOCKADE ON THE FRANKLIN, PHOTO: JOHN KRUTOP FOR THE SYDNEY MORNING HERALD, 14 JAN 1983, REPRODUCED AT [HTTPS://WWW.SMH.COM.AU/NATIONAL/FROM-THE-ARCHIVES-1983-FRANKLIN-DAM-PROTESTS-TURN-UGLY-20200110-P53QFT.HTML](https://www.smh.com.au/national/from-the-archives-1983-franklin-dam-protests-turn-ugly-20200110-p53qft.html)

This dramatic conflict between development and conservation was publicised nationally and internationally. With jaw-dropping scenery and wild vigilante protests, this story captured the imaginations of audiences widely. This time, the push to industrialise the area violated international agreements, as it was a World Heritage protected area, and at stake was an Aboriginal sacred site. These were two elements of the Franklin Dam controversy that changed its outcome. At the national level, the Australian government did not want to violate the UNESCO ruling, and importantly, it wanted to retain control over Indigenous affairs at the federal level. As a federal election loomed, Malcolm Fraser was ousted, and on 5 March 1983, the incoming Labour Prime Minister Bob Hawke took a strong stand on the issue of the Franklin Dam. Hawke's government wanted to demonstrate Federal power over state governments, and the Franklin was the ideal opportunity to do so. He passed new legislation to stop the dam. The Tasmanian Government challenged, leading to a hearing, *Tasmania vs Commonwealth*. Meanwhile, Hydro construction continued into the site, and the protestors continued to frustrate progress. A road through the forest to the Franklin Valley was being bulldozed, but on 1 July 1983, the Australian High Court issued its verdict: there would be no dam on the Franklin.



FIGURE 16: NEWSPAPER REPORT ON THE HIGH COURT VERDICT IN TASMANIA V COMMONWEALTH, PHOTO: THE EXAMINER, REPRODUCED AT WWW.WILDERNESS.ORG.AU/ABOUT/STORY/FRANKLIN-MADE

Conclusion: Renewable Energy Returns to the Great Lake

Tasmania is an island, and as such has geographical limits for expansion of any kind. In the aftermath of the Franklin Dam controversy and High Court ruling in favour of the ‘no-dam’ campaign, the Hydro needed to reinvent itself. In agreement with environmentalists and scientists, the Hydro could recognise that opportunities to increase hydroelectric power production were running out. It built two further hydropower schemes in the wake of the Franklin, at the Henty and King Rivers, but these represented the final efforts in the Hydro’s dam-building enterprise, begun at Waddamana seventy years earlier. Hydroelectricity, however, was undergoing an image makeover. Traditionally associated with providing cost-efficient power to heavy industries, hydroelectricity in Tasmania and other places was hardly a ‘green’ cause: while it was sustainable, its production contributed to environmental destruction, and it powered industries that polluted, deforested, and extracted from natural environments. Prior to the 1980s, the language of ‘sustainability’ was largely one reserved for company and government balance sheets – sustainable costs. As ‘environmental sustainability’ began to enter the vocabulary of business in the 1980s, it provided a compelling tool for rebranding industries such as hydroelectricity for a new generation. The Hydro in Tasmania saw an opportunity:



FIGURE 17: HYDRO TASMANIA LOGO, FROM THE 1980S

With a cleaner, more modern publicity campaign, the Hydro was able to explore other opportunities to diversify its operations, to counteract the limits of dam-based hydroelectricity systems. This was becoming urgently necessary. While the limits of production had been reached, the demand for energy was increasing rapidly, far outstripping long term supply. One of the reasons for the Franklin scheme expansion had been to offset the diminishing demand-and-supply relationship. By the 1990s, Tasmania faced severe energy shortages. In another ill-fated expansion plan, the Hydro implemented the Basslink project – a cable to connect Tasmania to mainland Australia, to receive coal-based power from Victoria, and ostensibly to send ‘green’ hydropower back when the situation improved. With the grand failure of this scheme, however, the energy crisis only deepened, as water levels in the dams reduced to their lowest-ever levels.

As a longstanding provider of renewable energy, however, the Hydro attracted a new generation of engineers to help solve the problems facing Tasmanian energy needs. To address the shortages, the Hydro had begun to invest in another of Tasmania’s abundant resources – wind. In 1998, Huxley Hill Wind Farm had begun operating on the remote King Island, followed soon by two more at Woolnorth and Musselroe on the far rocky capes of the Tasmanian island. Meanwhile, the protected area of the Tasmanian Wilderness was growing, eventually expanding to cover 1.58 million hectares, almost a quarter of Tasmania’s area.¹⁸ In 2018, the Hydro returned to Great Lake, where it had begun its expansion in 1914. This time, with no conflict with environmental groups, it was there to connect its transmission lines to Cattle Hill Wind Farm, in a joint venture with Goldwind Australia, a subsidiary of China’s Goldwind Science & Technology, and two years later, in 2020, Tasmania became 100% powered by renewable energy.¹⁹ But as energy needs continue to rise, can Tasmania and its hydroelectricity production maintain this status, (see Figures 19 and 20 in appendix)?



FIGURE 18: CATTLE HILL WIND FARM, PHOTO: ENERGY MAGAZINE, 9 DEC. 2019

Appendix

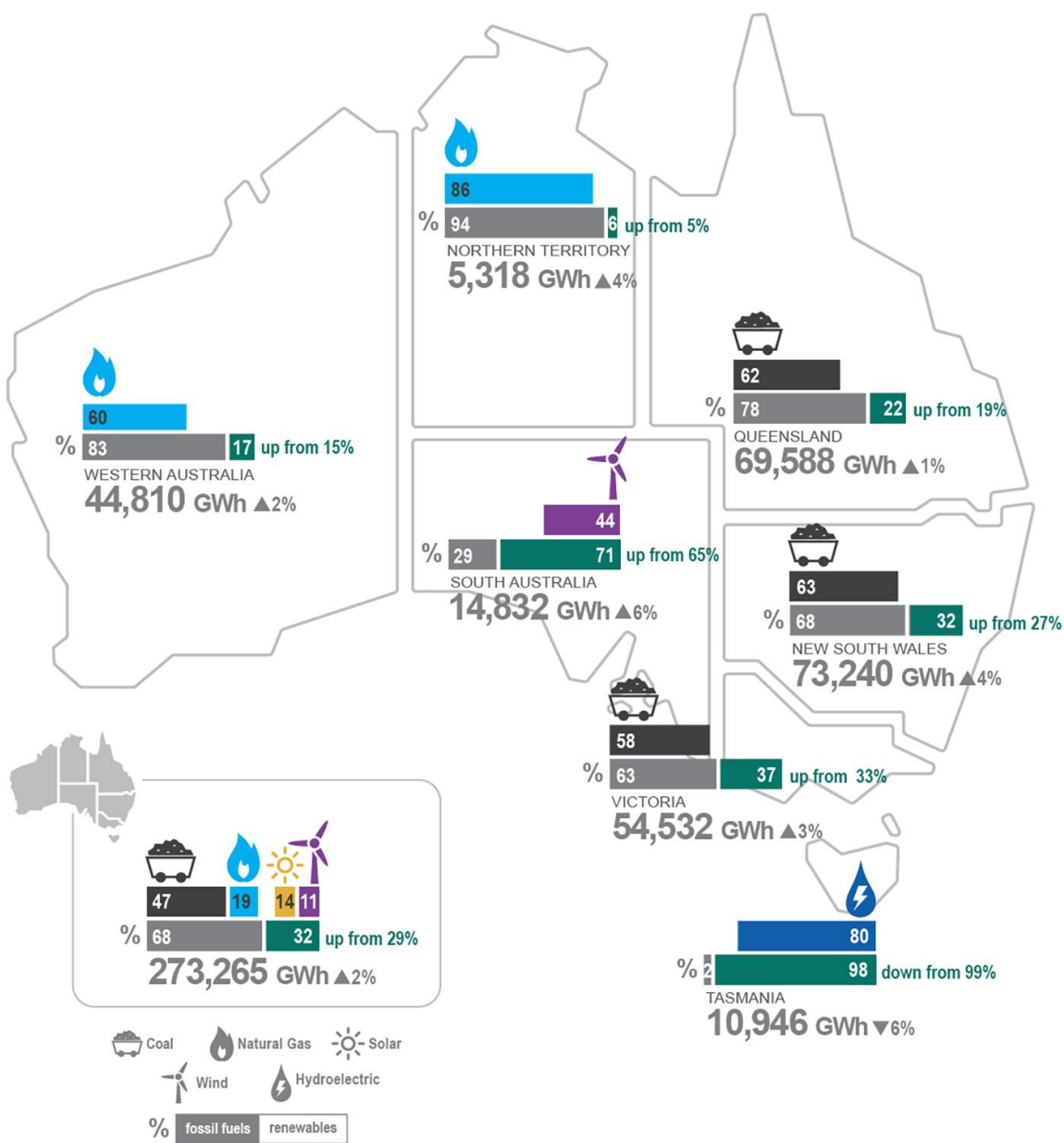
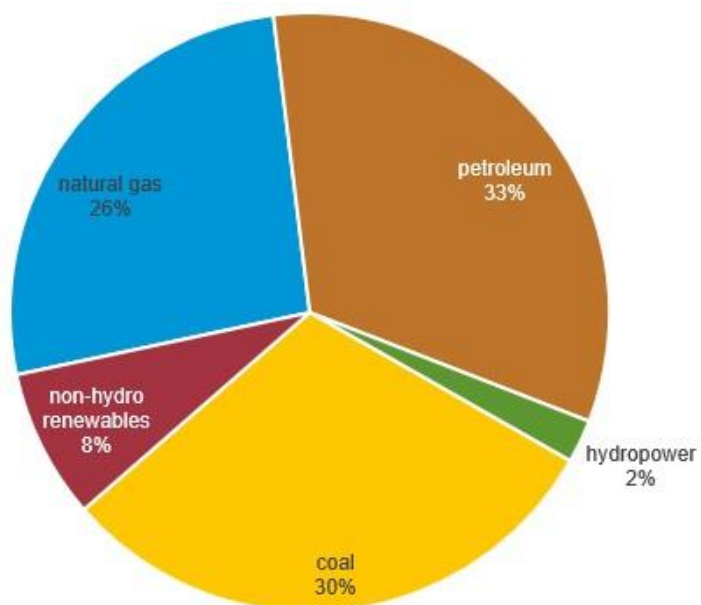


FIGURE 19: ELECTRICITY MAP OF AUSTRALIA, 2021-2022, SOURCE: AUSTRALIAN ENERGY STATISTICS, TABLE O, [HTTPS://WWW.ENERGY.GOV.AU/PUBLICATIONS/AUSTRALIAN-ENERGY-STATISTICS-TABLE-O-ELECTRICITY-GENERATION-FUEL-TYPE-2021-22-AND-2022](https://www.energy.gov.au/publications/australian-energy-statistics-table-o-electricity-generation-fuel-type-2021-22-and-2022)



 Source: Graph by U.S. Energy Information Administration, based on data from BP Statistical Review of World Energy 2021

FIGURE 20: TOTAL ENERGY CONSUMPTION IN AUSTRALIA BY FUEL TYPE, 2020, SOURCE: U.S. ENERGY INFORMATION ADMINISTRATION, AT [HTTPS://WWW.CLEANTECHGRID.COM/AUSTRALIA/OVERVIEW](https://www.cleantechgrid.com/australia/overview)



FIGURE 21: MAP OF AUSTRALIA, SOURCE: [HTTPS://WWW.WORLDDATLAS.COM/MAPS/AUSTRALIA](https://www.worldatlas.com/maps/australia)

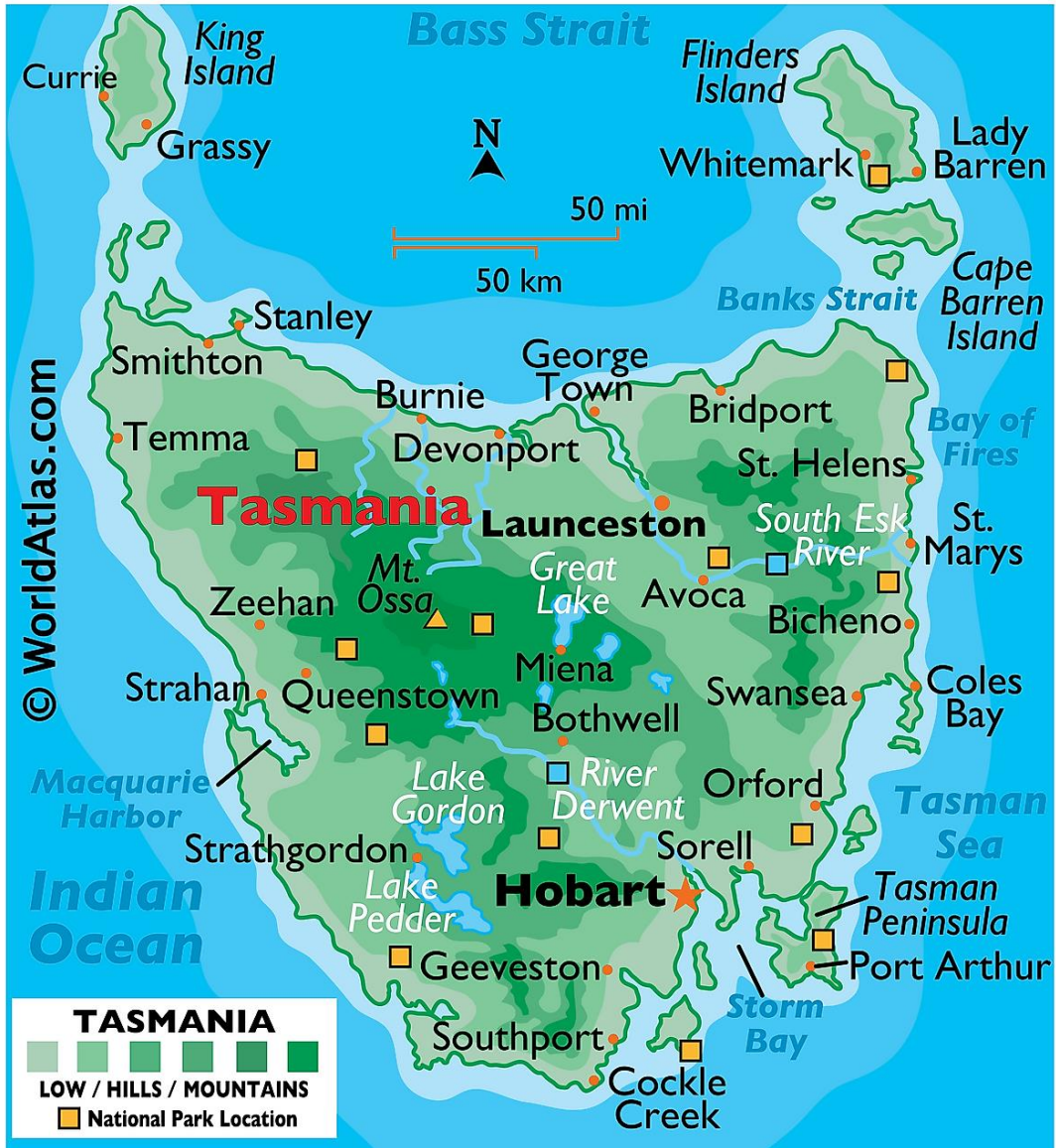


FIGURE 22: MAP OF TASMANIA, SOURCE: [HTTPS://WWW.WORLDDATLAS.COM/MAPS/AUSTRALIA/TASMANIA](https://www.worldatlas.com/maps/australia/tasmania)

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- ¹² Extract from Billy Griffiths *Deep Time Dreaming: Uncovering Ancient Australia* (Black Inc., 2018), in The Conversation, 1 March, 2018, <https://theconversation.com/friday-essay-how-archaeology-helped-save-the-franklin-river-92510>
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- ¹⁵ Extract from Billy Griffiths *Deep Time Dreaming: Uncovering Ancient Australia* (Black Inc., 2018), in The Conversation, 1 March, 2018, <https://theconversation.com/friday-essay-how-archaeology-helped-save-the-franklin-river-92510>
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