BHP submission to South Australia's Green Paper on the energy transition

BHP welcomes the opportunity to contribute to the consultation about South Australia's Green Paper on the energy transition (the **Green Paper**). This submission discusses our positions and feedback regarding a number of interconnected elements of the energy transition in South Australia that are of importance to BHP and our stakeholders, as opposed to responding to the specific questions raised in the paper.

BHP recognises South Australia's significant progress in its energy transition and the work of successive governments in establishing policy settings which are among the world's most leading. We also recognise the South Australian Government's recent declaration of copper as a critical mineral for the state, country and world as economies seek to decarbonise[1]. BHP has a long and proud history of operations in South Australia, which continue to depend on cost-effective, reliable and secure electricity, with an increasingly low greenhouse gas (GHG) emissions profile. Our Olympic Dam asset, which includes mining, processing, and metal production operations, is a significant industrial user of energy, playing a key role in the State's energy system and mining value chain. In May this year, we acquired OZ Minerals, bringing together a shared culture of innovation and performance to progress growth options to establish a copper province in South Australia. Energy is a fundamental element of our ambitious growth plans in the State, as well as our ability to reduce our own GHG emissions and provide copper needed for the global energy transition. As a significant energy user and producer of minerals the world needs, we welcome the opportunity to contribute to the State's thinking for a leading energy transition.

The local industry, the communities, government, and the Traditional Owners of the lands where BHP is establishing our copper province, are all important partners in bringing our plans to reality. By unlocking resources in a more sustainable way, South Australia has the potential to be a major supplier to help meet the world's increasing demand for copper, bringing new jobs, skills, local business opportunities, and economic growth for the State. Energy is fundamental to us and our stakeholders.

BHP supports the aims of the Paris Agreement to limit the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the increase to 1.5°C. The world must work toward these aims with increased levels of national and global ambition to limit the potential impacts of climate change. We recognise and support South Australia's GHG emissions reduction and renewable energy generation goals, in line with the State's contribution to Australia's national commitments and the aims of the Paris Agreement.

Essential resources we produce at BHP are not only fundamental to the way we live now, they are fundamental to the transition required to enable the way we will live in the future. Based on our climate change scenario analysis, we believe that the more action the world takes to limit climate change, the better it will be for BHP and our stakeholders.

We encourage collaboration between government, business, finance, and the scientific community to find, develop and deploy solutions to reduce GHG emissions. Cost-effective, reliable, secure, and low GHG emissions energy is fundamental to delivering the large-scale emissions reductions required to achieve the world's collective climate goals and producing the commodities to drive the transition.

As one of the world's largest mining companies, we operate in jurisdictions across the world and are subject to a variety of policy settings and regulations. Many jurisdictions are working to establish regulatory frameworks to support decarbonisation and capture the opportunities of the energy transition. It is important

[1] https://www.energymining.sa.gov.au/home/news/latest/critical-mass-sa-government-declares-copper-a-critical-mineral

to emphasise the need for coherence and consistency across policy frameworks, including across different levels of government, particularly as it relates to the energy system and its participants.

Again, BHP welcomes the Government's Green Paper and the collaborative opportunity it presents for a clear understanding of collective responsibility and shared commitment.

As a member of the South Australian Chamber of Mines and Energy (SACOME), we recognise SACOME is also making a submission and support the recommendations made.

The State's energy transition and the energy needs of industry

BHP's operations in South Australia include Olympic Dam, one of the world's largest copper and uranium deposits, and, following the acquisition of OZ Minerals, the nearby Carrapateena and Prominent Hill copper operations. We also operate the fully integrated processing facility at Olympic Dam, meaning the copper value chain – from mining to metal – occurs within BHP in South Australia. Taken together, our operations are among the State's highest electricity users.

In November 2022, BHP signed a renewable Power Purchase Agreement (PPA) which is expected to supply 70 MW of electricity to Olympic Dam. The PPA will support the construction of the 203MW Goyder 1b Wind Farm, which is to form part of the larger Goyder Renewables Zone in South Australia. In addition, a large-scale battery energy storage system in Blyth, South Australia is to be constructed to support the PPA. Successful competition of the projects will introduce new renewable generation into the South Australian electricity grid and assist in improving its stability. This builds on an earlier agreement with Iberdrola for half of Olympic Dam's electricity supply until FY25 from the 317MW Port Augusta Renewable Energy Park in South Australia, Australia's largest solar-wind hybrid plant.

While BHP, and South Australia as a whole, have made positive progress in the renewable energy transition, the need for a multitude of zero-GHG emissions technologies to ensure a stable and secure energy system is increasingly clear. The high levels of solar and wind generation, especially during the daytime, deliver periods where the State approaches (or in some cases exceeds) 100 per cent renewable energy generation. This supports lower electricity prices during these times. In contrast, South Australia experiences high levels of demand during the morning and evening periods (the 'duck curve' referenced in the Green Paper), which frequently coincide with low levels of renewable generation. This results in significant increases in electricity prices during these periods as the State's energy demand is supplemented with imports from interstate. As other states continue to commission renewable energy generation, it is likely peak demand periods will extend across National Electricity Market (NEM) states, partially due to time-zone differences, potentially increasing the incidence of shortages of supply in South Australia during these periods.

The changed nature of the demand and generation profiles resulting from the renewable energy transition in South Australia highlights the need for a technology agnostic approach to continue to deliver zero GHG-emissions generation, while addressing the challenges encountered during periods of low generation and high demand. Battery technology, especially short-term duration battery storage, is maturing and we have seen these technologies deployed successfully at scale in South Australia. It is important this trend continues, but with a focus on long-duration storage and transmission to ensure supply and stability of the South Australian grid during times of high demand and low renewable generation.

Consideration of other zero GHG-emissions technologies that make use of the State's own natural resources and potentially leverage existing infrastructure are important to consider. This includes building on South Australia's global importance as a producer of uranium by supporting research and development to further safe and reliable nuclear power technologies. Support is also needed to consider the role of additional zero emissions energy sources, including exploring the potential of options such as renewable gas (biomethane) as a direct replacement for conventional natural gas delivered via existing gas infrastructure, to power industrial applications and provide firm capacity via gas thermal generation in the energy system.

The Government has a key role in increasing policy support for decarbonisation and the energy transition through cost-effective incentives for industry to adopt renewable and other low to zero GHG-emissions energy, including for both electrical and thermal power, as well as energy and operational efficiency technologies.

Mining

Australia is a world leader in mining exports. Our success as an industry and as a nation is the result of the result of decades of industry investment in constructive partnership with state and federal governments. Over 1 million full-time-equivalent jobs are held by Australians in the mining sector[2], with the sector paying the highest average wages of any sector[3] and supporting a higher rate of Aboriginal and Torres Strait Islander employment than other sectors[4]).

The energy transition and decarbonisation are shifting demand growth towards key commodities including copper, nickel, and lithium. A massive wave of capital investment will be required to meet demand for these minerals. The global competition to ensure competing and partnering jurisdictions have the right policy settings and industry actions in place to capture these opportunities is intense and growing. Major additional investments in infrastructure, including energy infrastructure, will be required to unlock the more remote regions where commodities critical to the energy transition are typically found, including South Australia's Gawler Craton.

South Australia is home to some of the world's – and Australia's – best copper resources. BHP acknowledges the South Australian Government's recognition of the importance of copper through the Copper Strategy, establishment of a Copper Taskforce, and recent declaration of copper as a critical mineral for the state, country, and the world[5]. With the acquisition of OZ Minerals in May this year, BHP is working to create a tier one copper province in South Australia. The combination of Olympic Dam, Prominent Hill, and Carrapateena, together with the potential of Oak Dam, offer longer-term opportunities and potential synergies to build a copper province of global significance. Operations proximate to one another can bring substantial benefits, including the leveraging of shared infrastructure and relationships to enable better productivity and longer-term opportunities.

Our focus is on building scale and optionality across this new province. Conceptually though, our aspiration is for our South Australian copper assets to grow, over time, to 500,000 tonnes per annum of copper cathode or more. Realising this aspiration will require significantly more energy than we consume today. There is significant value in considering our energy demands with those of adjacent industries, both existing and new, to inform whole of system thinking regarding the energy transition.

Many aspects of mining and minerals processing operations require constant energy supply, while other industries and technologies may have more flexibility to shift with the variable generation profile of renewable energy. Hydrogen is one such example. BHP recognises the importance of the Government's Hydrogen Jobs Plan and the efforts working to establish a hydrogen hub in the Upper Spencer Gulf. This in turn presents opportunity to support energy interconnectivity between industries whereby hydrogen production may be able to absorb periods of surplus supply in the energy system, while providing firming capacity to cost-effectively sustain less flexible operations, such as mining and minerals processing, during periods of high system demand. In the same frame, a systems approach may allow greater renewable penetration of the grid, reducing energy costs and providing mutual benefit to energy users. In turn, the competitiveness of the region and the State may be improved, facilitating greater investment in extracting the minerals crucial to the energy transition.

[2] METS Ignited, accessed 26 June 2023 states "METS-Mining Sector…supports over 1.1 Million jobs"
[3] https://minerals.org.au/resources/permanent-mining-rates-are-high-and-increasing/
[4] Excludes Indigenous employment which is based on 2016 census data
[5] https://www.energymining.sa.gov.au/home/news/latest/critical-mass-sa-government-declares-copper-a-critical-mineral

The demand for minerals that are central to the energy transition is increasing, bringing new investment supported by policies focused on critical minerals. It is important policies are sufficiently broad to recognise both minerals critical to specific technologies and those that are of strategic significance in the electrification of transport, renewable energy, and infrastructure development. It is also important to distinguish between minerals that are critical due to risk of supply disruption, and those that are crucial for the energy transition and general economic development. Copper, nickel and uranium should be included on key lists, with policy makers seeking alignment with international best practice to facilitate consistency in designation of minerals as critical or strategic. Again, we support the South Australian Government's recent declaration of copper as a critical mineral.

Furthermore, it is essential that the push for critical minerals also ensures respect and opportunity for local communities and Indigenous peoples, and considers commitments to preserving healthy environments and nature. Engagement with local communities and mutual benefit from resource extraction will be important for new critical mineral projects to succeed. Engagement can be supported through transparent and streamlined permitting processes that safeguard strong environmental and social outcomes.

The increasing complexity of approvals at state and federal levels is leading to longer wait-times for permitting and risking additional cost pressures, potentially impacting investment in and construction of energy infrastructure to maintain pace of the energy transition. Approvals and permitting processes also present barriers to existing and new mining operations supplying the decarbonisation minerals the world needs. The regulatory landscape is often confusing and presents challenges in identifying sequencing of approval activities[6].

High standards in environmental and social permitting are welcome and essential. The recent developments at state and federal levels to support more effective environmental laws and enhance recognition and protection of Indigenous heritage are positive shifts to deliver these standards. However, it is important these aims are achieved without increasing complexity and leading to significant permitting delays.

Industry and governments can work together to significantly improve alignment in federal and state approvals processes for major energy infrastructure and mining projects. This includes pursuing a cohesive and streamlined national policy framework on social and environmental issues to reduce duplication and identify efficiencies (such as parallel rather than linear processes) to reduce the long timeframes associated with obtaining requisite approvals. Further, consideration could be given to risk-based approaches to permitting with a focus on decision speed, without reducing the appropriate level of rigour, and to maximising alignment between federal and state approvals, including greater collaboration to consider statutory assessments concurrently and avoid duplication. This should extend to providing adequate support and resources to Indigenous stakeholders and ensuring coordination between Indigenous heritage protection laws and the overall permitting process.

Zero GHG-emissions electricity is a cross-cutting enabler of the low emissions transition and South Australia's competitiveness in it. Not only is energy critical to powering essential electrification technologies required to underpin the global economic transition, but zero emissions technology, supported by the right government policy settings, can enhance access to reliable and affordable energy, enhancing the State's position among global competition to produce of the minerals that underpin electrification. Responsibly producing commodities essential for the energy transition, including copper, presents a huge opportunity for BHP and South Australia as the transition accelerates.

As the Green Paper indicates, there is significant opportunity for South Australia to attract new industries across the mining and minerals value chain through low-cost, secure, and low GHG-emissions energy. However, it is important to emphasise not only the opportunities for the new, but also opportunities for supporting existing operations and industries to build on decades of success and learnings to continue to be part of the future.

[6] https://www.sapc.sa.gov.au/__data/assets/pdf_file/0007/847348/Renewable-Energy-Competitiveness-Final-Report-Website-Version.pdf

Considering the role of existing operations creates opportunities for leveraging existing infrastructure and established sovereign capability housed within existing value chains. While establishing policy and economic conditions to attract new industries to South Australia is important, equal consideration should be given to bolstering and expanding existing onshore mineral value chains. These considerations are also critical to increasing processing capacity and supply of transition minerals, many of which, such as copper, are forecast to face supply challenges in the future, potentially slowing the speed of the energy transition. In addition, existing value chains have established workforces and social value, much of which is in regional areas. Continuing to ensure these operations are part of the energy transition will be an important part of supporting local communities to continue to thrive in a decarbonised world.

In an increasingly automated and decarbonised world, Australia's mining and energy sectors will need new skillsets and capabilities to prosper. Decarbonisation will radically increase the demand for electrical and trade skills and implementing more technology in the continued shift towards automation will require higher order capabilities across analytics and data science.

In South Australia, the vast wave of infrastructure investment across transport, energy and mining is building a foundation for long-term economic prosperity for the State. Realising this prosperity will require a significant skilled workforce. Similar – if not the same – skillsets are sough across infrastructure, energy, and mining, creating the potential for competition between these sectors and risks to progressing the projects on time and on budget. A range of options to combat this looming shortage are required, including training, transitioning, and migration.

Social value

We recognise that pathways for delivery of reliable and affordable zero GHG-emissions electricity in the transition to a low emissions future must also consider interactions with a broad range of stakeholders. BHP highlights the importance of equitable change and transition and supporting communities, Traditional Owners, and other affected partners and stakeholders to prepare for, and manage, change. We also note the significant opportunities for stakeholders presented by the energy transition and support efforts to enhance inclusions and enable mutual benefit.

Operating on or near Indigenous traditional lands brings with it responsibility and opportunity. BHP policies are designed to set out the expectation of our conduct and our commitment to respecting Indigenous peoples, listening to Indigenous voices and perspectives, and ensuring early engagement and meaningful dialogue for active participation in plans that impact Indigenous peoples. It is through this commitment that we aim to support reconciliation with Indigenous peoples and contribute to improved social, economic and environmental outcomes. The energy transition and the opportunities that arise from renewable projects on Indigenous-held land must be undertaken with the integration of Indigenous voices, knowledge, values and perspectives about cultural heritage and environment values. The opportunities to co-develop plans and designs, and for participation in the construction of assets hold far reaching economic potential for Indigenous regional and remote communities.

BHP's new Elevate Reconciliation Action[7] Plan (RAP) is guided by the aims of the United Nations Declaration on the Rights of Indigenous Peoples as set out in our Indigenous Peoples Policy Statement[8]. It reflects our intention to work together to mitigate the potential impacts of our activities and identify social, economic, and environmental opportunities beyond the life of our operations through agreement-making and benefit distribution. BHP continues to contribute to intergenerational wealth creation opportunities for Traditional Owners and Aboriginal and Torres Strait Islander peoples through employment, training, procurement, and business support. Our RAP targets spending A$1.5 billion across the FY2023-2027 period

[7] BHP Reconciliation Action Plan 1 July 2023- 30 June 2027, available at https://www.bhp.com/-/media/project/bhp1ip/bhp-com-en/documents/careers/indigenous-peoples-and-bhp/200921_bhpreconciliationactionplan.pdf
[8] BHP Indigenous Peoples Policy Statement, 9 November 2022, available at https://www.bhp.com/-/media/documents/ourapproach/operatingwithintegrity/indigenouspeoples/221110_indigenouspeoplespolicystatement_2022

with Traditional Owner and Indigenous businesses through strategic and sustainable initiatives that are designed to deliver long term economic development and enduring partnerships. We also commit to support the growth of Traditional Owner and Indigenous businesses through initiatives that enhance capability and provide holistic business support.

BHP supports the Green Paper's emphasis on Aboriginal and Torres Strait Islander peoples' interests and rights. We also note the intention of the Hydrogen and Renewable Energy Bill (HRE Bill) to create a platform to maximise the benefits for South Australians as a whole, whilst ensuring that any adverse environmental, economic, public safety and social and cultural impacts associated with hydrogen and renewable energy developments are understood and minimised. Both the Green Paper and HRE Bill are promising examples from which to consider policy and legislative settings to enhance social value outcomes from the energy transition in South Australia.

Conclusion

The energy transition presents a once-in-a-generation opportunity for South Australia and the nation more broadly. Much of the mining sector's past success has been enabled by the productive partnerships that governments and industry have forged, defined by clear, aligned, and strategic interest objectives. Such an approach has served stakeholders well in the past and can again provide a foundation to capture the new opportunities that exist today and into the future.

BHP welcomes the opportunity to contribute to the discussion shaping South Australia's energy transition through the Green Paper process. As a significant operator in the State, the opportunity offered by the energy transition is a fundamental enabler of our operations today and growth plans for the future.