Polluters pay?: The cost of South Australia's algal bloom and who should pay

Briefing Report - February 2026

Image credit - Stefan Andrews, Great Southern Reef Foundation

Executive Summary

South Australia's climate-driven harmful algal bloom is causing $100s of millions worth of economic damage.

Cost to tourism industry	Cost to fisheries	Cost to Governments
		
$46.8 million+	$100 million+	$102.5 million+

South Australia's fossil fuel producers are generating almost 6.5 million tonnes of carbon pollution every year[1]—pollution that is driving climate change and associated impacts such as the South Australian Harmful Algal Bloom that has devastated the state's marine environment.

However, it is local South Australian businesses, including tourism operators, the fishing industry, and accommodation providers, that are bearing the costs of this

[1] https://www.energymining.sa.gov.au/industry/energy-resources/data-centre/production-and-statistics production quantities provided and emission values estimated using https://www.dcceew.gov.au/sites/default/files/documents/national-greenhouse-accounts-factors-2022.pdf

ongoing disaster. The Harmful Algal Bloom has likely already caused at least $250 million[2,3,4] in economic damage—plus extensive damage to the natural environment.

The biggest fossil fuel producers in South Australia profit from the sale of polluting oil and gas products that are driving the disaster—making more than $10 billion in revenue last financial year.[5] According to the Australian Taxation Office (ATO), local fossil fuel producers, despite the multi-billion dollar revenue, paid income tax equivalent to just 0.9% of income.[6] Similarly, annual royalties paid by the sector to the SA government are unlikely to cover even half the cost of the damage incurred. While there are no State or Federal government policy measures in place to ensure oil and gas producers pay for the damage their polluting products are causing to the marine environment and affected industries, the sector has the wherewithal to compensate those affected.

The 'polluter pays' principle is an accepted framework for considering who should pay for the costs of environmental damage[7]. In the case of damage caused by climate-linked events—such as those associated with the Harmful Algal Bloom—there is a credible case for South Australia's largest gas and oil polluters to contribute to the costs of clean up and economic relief to affected industries.

An Algal Disaster Charge of $2.50 per GJ of fossil fuel production in South Australia or a charge of 15% of the assessed value of fossil fuels extracted from the state could raise between $254 million and $275 million per annum. This would compensate for the economic damage and public costs caused so far by the algal bloom.

South Australia's algal bloom: An economic and environmental disaster

South Australia's ongoing harmful algal bloom has resulted in widespread marine life mortality, public health impacts, and significant disruption to coastal communities.

The 2025 event represents a marine disaster of unprecedented scale in South Australian waters, linked to climate-driven marine heatwaves and elevated nutrient loads[8]. The bloom is estimated to have affected more than 4,000 km² of coastal waters, with severe impacts on marine ecosystems: however, the full extent of the damage—including depth, duration and longer-term ecological consequences—remains uncertain. There is a risk that the bloom could persist for decades under a boom-bust cycle.[9]

---

[2] Cost to fisheries - https://www.themonthly.com.au/december-2025-january-2026/essays/fatal-shore
[3] Government costs - https://www.algalbloom.sa.gov.au/news/backing-our-fishing-industry-key-focus-of-100-million-summer-plan
[4] Tourism costs - https://ticsa.com.au/media-release/financial-impact-of-harmful-algal-bloom-on-south-australian-tourism-businesses/
[5] https://data.gov.au/data/dataset/corporate-transparency/resource/491b366b-aa6f-4b1c-b39d-cebaeeb6f874
[6] https://data.gov.au/data/dataset/corporate-transparency
[7] https://www.lse.ac.uk/granthaminstitute/explainers/what-is-the-polluter-pays-principle/
[8] https://www.aph.gov.au/DocumentStore.ashx?id=4b2de385-8166-415b-ad3f-533aea1116c0&subId=777713
[9] https://www.indailysa.com.au/news/just-in/2025/10/08/alglal-bloom-will-persist-for-decades-under-worst-case-scenario-modelling

The rolling nature of the disaster means that costs are still accumulating, early analysis suggests current economic impacts have already exceeded a quarter of a billion dollars accounting for both direct economic impacts on businesses as well as the $102.5 million *Algal Bloom Summer Plan* government response package.[10]

Fishing, aquaculture and tourism, especially recreational and sport fishing, have been particularly affected,with early estimates suggesting economic losses of more than $146.8 million[11] so far with impacts extending through hospitality, local services and regional employment. These costs will grow as the algal bloom continues. The precise economic costs will continue to evolve as the event unfolds.

Climate change is driving algal blooms

"Harmful Algal Blooms are set to increase in frequency, severity, spatial occurrence, and longevity, as human activities are increasingly polluting aquatic environments with nutrients and changing the climate in ways that favour algal blooms." - Professor of Marine Ecology Ivan Nagelkerken, University of Adelaide[12]

Warm ocean temperatures, fuelled by climate change, have created ideal conditions for algal growth.[13,14] Scientific evidence indicates that harmful algal blooms are a growing material and recurring economic risk due to climate change — one that is increasingly borne by communities and governments, rather than by the industries most responsible for the underlying drivers of climate change.

The Intergovernmental Panel on Climate Change's (IPCC) *Special Report on the Ocean and Cryosphere in a Changing Climate* (SROCC)[15], was the first IPCC assessment to explicitly identify harmful algal blooms as being linked to climate change. Coastal waters have and are experiencing acidification, deoxygenation and progressive warming.[16]

Climate change is causing a range of changes that are increasing the occurrence, intensity and duration of harmful algal blooms, such as:

- Ocean warming
- Intensifying storms and floods that flush pulses of nutrients into our coastal waters, encouraging algal growth
- Changes to coastal upwelling patterns[17][18]

[10]https://www.algalbloom.sa.gov.au/news/backing-our-fishing-industry-key-focus-of-100-million-summer-plan
[11]https://ticsa.com.au/media-release/financial-impact-of-harmful-algal-bloom-on-south-australian-tourism-businesses/
[12] https://biodiversitycouncil.org.au/news/experts-outline-human-drivers-of-harmful-sa-algal-bloom
[13] Biodiversity Council (2025). Key actions needed to respond to South Australia's catastrophic toxic algal bloom. July 2025 https://biodiversitycouncil.org.au/admin/uploads/Biodiversity_Council_2025_Key_actions_for_response_to_SA_Algal_bloom_v2_e9f89ff535.pdf
[14] Prof Caitlin Byrt, Australian National University, and Dr Ben Long , University of Newcastle, (2025) Feeding the bloom: the role of CO2, nutrients and heat in algae proliferation. https://www.aph.gov.au/DocumentStore.ashx?id=db075688-89aa-4cdd-b0dc-ebaf8e6f7016&subId=777541
[15] https://www.ipcc.ch/srocc/
[16] https://www.sciencedirect.com/science/article/pii/S1568988319302045
[17] https://www.sciencedirect.com/science/article/pii/S1568988319302045
[18] https://www.themonthly.com.au/december-2025-january-2026/essays/fatal-shore

The link between harmful algal blooms and climate change is well established by recent scientific research, as is the link between the fossil fuels accelerating climate change and their consequent impacts.

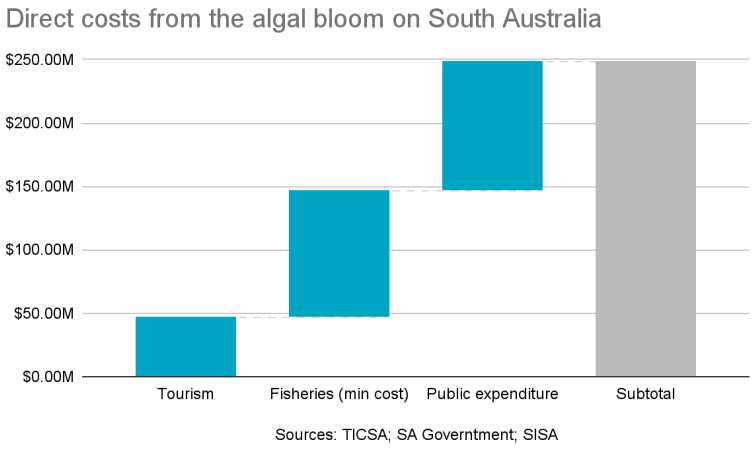
Ultimately, it is coal, oil and gas production that are contributing to occurrences of harmful algal blooms.

Costs and impacts from the SA algal bloom

"The algal bloom off South Australia's coast is a climate emergency – an 'underwater bushfire' devastating marine ecosystems. Driven by human-caused climate change, the warming oceans, marine heatwaves, extreme weather, and nutrient flooding are a stark warning of future crises. Natural disasters could cost Australia up to $39 billion a year by 2050." - Australian Academy of Science [19]

The harmful algal bloom is inflicting sustained economic damage on businesses across South Australia's coastline, in particular the fishing industry and tourism operators, in particular those in the recreational fishing sector - which contributes $380m to the South Australian economy annually.[20]

Early impact assessment by the SA Tourism Industry Council in July 2025 found that 30 towns have been impacted and an average of 30 businesses per town were affected—especially on the Yorke Peninsula. The average financial loss per business at the time was $52,000, suggesting a minimum estimated loss of $46.8 million midway through last year.[21]



The losses have no doubt grown since then as the algal bloom has persisted and continues to inflict economic harm on South Australia's coastal communities.

Major economic damage has been sustained by the seafood industry, a sector worth $814.5 million per annum to the South Australian economy.[22] In the Gulf St Vincent/Kangaroo Island region, there has been a 100% collapse in Southern Calamari, Southern Garfish and near

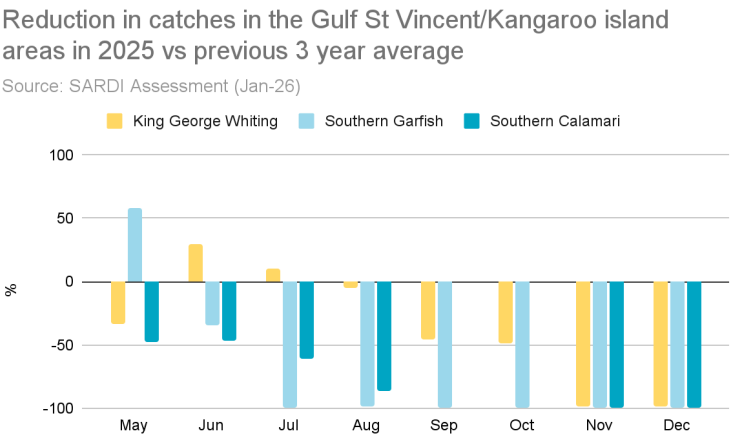
[19]Australian Academy of Science's Post (11/2025) - https://www.facebook.com/share/p/17e94Vi4dT/
[20] Recfish SA, Algal blooms in South Australia, Submission 155
[21]https://ticsa.com.au/media-release/financial-impact-of-harmful-algal-bloom-on-south-australian-tourism-businesses/
[22] https://pir.sa.gov.au/__data/assets/pdf_file/0017/401480/seafood-growth-strategy-sa.pdf

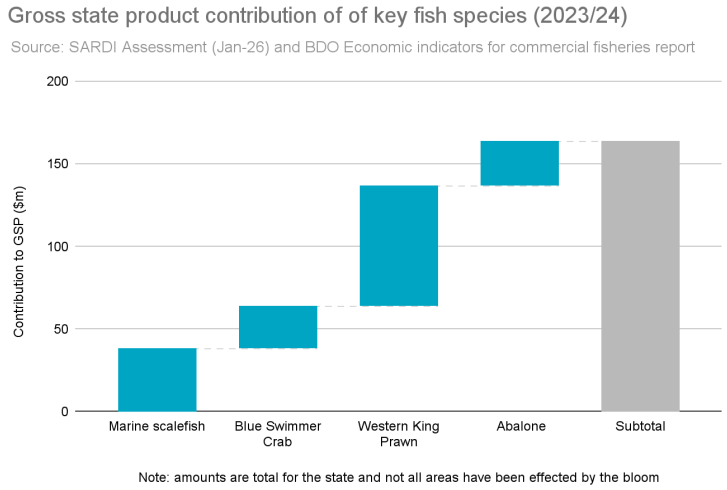
total collapse of King George Whiting catch coupled with very low catches and high mortality recorded for the Western King Prawn, Blue Swimmer Crab and Abalone catch since the bloom began.[23]

At the low end, losses of $100 million are understood to have hit the fisheries industry with costs still being counted as the disaster continues[24]—with some individual businesses having already reported losses of $5 million.[25]

Estimates from all four dive sites suggested 70% to 90% of Greenlip Abalone were unwell or dead, and almost all other abalone species were dead.
SARDI Aquatic and Livestock Sciences (13-1-26)[26]

The latest analysis from the South Australian Research and Development Institute (SARDI), shows that many commercial fish stocks have been affected by the algal bloom. In particular, the Gulf St Vincent and Kangaroo Island areas have a greater than 80% reduction in monthly catches from May to December 2025 compared to a 3-year average (see table in appendix). November and December have been some of the worst months, with a 99-100% reduction in catches. This outlines that the bloom is still having an effect, with costs and impacts likely to roll on.[27]





Stocks heavily impacted include species which make up a large share of the economic value of South Australia's fishing industry. This includes marine scalefish (King George Whiting, Southern Calamari, and Southern Garfish account for 70% of the value of scale-fish catches), Blue Crabs, Prawns and Abalone are worth $164 million in annual contribution to Gross State Products. It

[23] SARDI Aquatic and Livestock Sciences, Algal bloom impact on key fish stocks in South Australia's gulfs, January 2026, Table 1https://pir.sa.gov.au/__data/assets/pdf_file/0003/488541/summary-report-algal-bloom-impact-on-key-fish-stocks-sa-jan-2026.pdf
[24] https://www.themonthly.com.au/december-2025-january-2026/essays/fatal-shore
[25]https://www.indailysa.com.au/news/business/2025/09/08/major-sa-seafood-business-reveals-multimillion-dollar-algal-bloom-hit
[26]https://pir.sa.gov.au/__data/assets/pdf_file/0003/488541/summary-report-algal-bloom-impact-on-key-fish-stocks-sa-jan-2026.pdf
[27]https://pir.sa.gov.au/__data/assets/pdf_file/0003/488541/summary-report-algal-bloom-impact-on-key-fish-stocks-sa-jan-2026.pdbuy-backf

is not clear what percentage of these fish are caught within the Gulf St Vincent and Kangaroo Island areas.

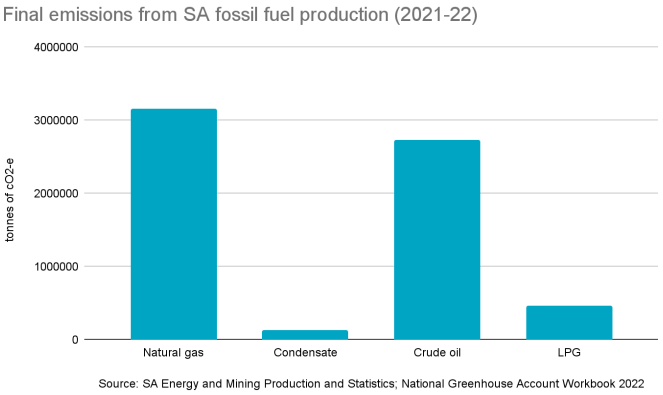
The final report of the South Australia Parliament's Joint Committee on the Harmful Algal Blooms recommends consideration of a fishery licence buy back scheme for impacted fisheries.[28] The costs of this are hard to estimate, given the voluntary nature of the buy-back, but the state opposition has suggested a $21 million scheme.[29]

In addition to the direct cost to the fishing industry, there is also the cost to the public from the $102.5 million[30] *Algal Bloom Summer Plan*, which is jointly funded by the Federal and State governments. This is taxpayer money that now can't be spent on schools, hospitals and infrastructure throughout South Australia.

On top of the direct costs, a huge volume of unpaid, volunteer labour has been deployed. More than 13,000 hours of volunteer time has been spent cleaning beaches across South Australia[31] - cleaning up a mess driven by climate change, created by pollution from gas, oil and coal producers.

South Australia's oil and gas production

The most recent figures released by Energy and Mining South Australia show that fossil fuel producers in the state extracted 61 PJ of natural gas, 974,520 kL of crude oil, 106,695 kL of condensate, and 158,327 tonnes of LPG in 2021-22. The final carbon pollution from these products will generate almost 6.5 million tonnes of CO2 per year[32]—equivalent to 41% of the state's emissions (2021-22).[33]



Oil and gas production generated more than $10 billion in revenue for the 2023-2024 financial year for the three major producers in South Australia.[34]

However, despite these big earnings data from the Australian Taxation Office shows that South Australian oil and gas producers do not contribute much in income tax, with only $92m paid—an amount equal to just 0.90% of total income.

---

[28]https://www.parliament.sa.gov.au/Search/Result?type%3Dcommittee%26id%3D445&sa=D&source=docs&ust=1771895150486959&usg=AOvVaw1urMtm3ac4PMtOPFa-TKyC

[29] https://www.abc.net.au/news/2026-02-20/sa-parliament-report-into-harmful-algal-bloom-handed-down/106363850

[30]Algal Bloom Summer Plan https://www.algalbloom.sa.gov.au/assets/documents/Algal-Bloom-Summer-Plan.pdf?v=1761521061 ; https://www.abc.net.au/news/2025-10-14/sa-summer-plan-announced-state-algal-bloom/105887504

[31] https://www.algalbloom.sa.gov.au/news/praise-for-beach-clean-up-volunteers

[32] https://www.energymining.sa.gov.au/industry/energy-resources/data-centre/production-and-statistics

[33]https://www.dcceew.gov.au/climate-change/publications/national-greenhouse-accounts-2023/state-and-territory-greenhouse-gas-inventories-data-tables-methodology

[34]Australian Tax Office, Corporate Tax Transparency data set, https://data.gov.au/data/dataset/corporate-transparency

The tax paid by South Australia's producers would only cover 37% ($92 million) of the current estimated economic damage the industry is causing to the rest of South Australia's economy via the harmful algal bloom ($250 million).

In addition, South Australia's fossil fuel producers are earning more income but the amount of tax income paid has been decreasing over the last 3 years. The effective tax rate relative to revenue has fallen from 1.5% in 2021-22 ($99 million) to 0.9% in 2023-24 $92 million —while revenues have grown from $6.6bn to $10.2 billion.[35]

Similarly, the current royalty rate paid by fossil fuel producers is vastly inadequate to cover even the economic damage the industry is fueling in the state from the harmful algal bloom. Royalties in the 2022-23 budget were only $106.3 million,[36] while the Mid Year Economic Update of 2024 stated that "downward revisions in petroleum royalties" were expected out to 2026-27.[37]

If a royalty rate of $106 million is still being received, that would only cover 43% of the economic damage that has been caused by the harmful algal bloom.

Applying the polluter pays principle to the South Australian algal bloom

The 'polluter pays' principle is a long accepted framework for considering who should pay for the costs of environmental damage. In the case of damage caused by climate-linked events—such as those associated with the algal bloom—there is a credible case for South Australia's largest gas and oil polluters to significantly contribute to the costs of clean up and economic relief to affected industries.

Following this principle, South Australia's gas and oil companies would pay to fix damage their polluting products are doing to the local economy and environment—not local businesses and the public. Can the polluter pays responsibility framework be applied in the context of South Australia's harmful algal bloom?

Applying an Algal Bloom Charge on oil and gas producers in South Australia would help ensure the industry whose pollution is driving the problems also pay to fix the damage.

One method is to apply a charge based on the volume of fossil fuels extracted from South Australia each year. Applying a charge of $2.50 per gigajoule would raise $275 million per annum based on 2021-2022 production volumes. This would help cover the current known costs of the algal bloom.

[35] Australian Tax Office, Corporate Tax Transparency data set, https://data.gov.au/data/dataset/corporate-transparency
[36] SA Government (2023) Budget Paper 3, Table 3.2 and p 105
[37] https://www.treasury.sa.gov.au/__data/assets/pdf_file/0004/1098454/Mid-Year-Budget-Review-2024-25.pdf

	Oil and gas GJ (2021-22)	Charge of $2.50/GJ
Natural gas	61190000	$153M
Condensate	1913959	$5M
Crude oil	39177412	$98M
LPG	7649727	$19M
Total	**109,931,098**	**$274.8M**

Alternatively, an Algal Bloom Charge could be applied based on the value of fossil fuels extracted in South Australia each year. A charge of 15% based on the value of oil and gas products extracted in South Australia would have raised $254 million based on 2021-22 values—just enough to cover the current known costs from the algal bloom.

	Value ($) 2021-22[38]	15% of the Value
Natural gas	$526M	$79M
Condensate	$131M	$20M
Crude oil	$848M	$127M
LPG	$189M	$28M
Total	**$1,694M**	**$254M**

A higher charge in either method would help contribute towards the algal bloom impacts as well as other climate-fueled disasters like the fires, intense storms and droughts that are hitting the state.

Conclusion

Pollution generated by fossil fuel producers is a key driver of the algal bloom. In the absence of polluter pays policies in place, companies are able to damage the environment South Australians rely on without paying to fix the damage.

South Australia's oil and gas producers are extracting oil and gas each year that will generate almost 6.5 million tonnes in carbon dioxide pollution. By applying the polluter pays principle, governments can ensure fossil fuel producers take responsibility for the costs associated with climate-linked disasters, such as the ongoing algal bloom—rather than the public.

An Algal Bloom Charge is a fair approach and will ensure that the companies creating the damage are the ones that pay the bill.

[38]https://www.energymining.sa.gov.au/industry/energy-resources/data-centre/production-and-statistics

Appendix

Estimate of costs

Tourism costs calculated by the South Australia Industry Tourism study

average loss per business	number of towns affected	number of businesses per town	total businesses affected	Total estimated loss
52,000	30	30	900	$46.80M

Source:https://ticsa.com.au/media-release/financial-impact-of-harmful-algal-bloom-on-south-australian-tourism-businesses/

Other costs

	Costs to the Seafood Industry	Costs to the government
Amount	Costs are estimated at $100 million as per quote, "It's in excess of a hundred million."	$102.5 million program
Source	https://www.themonthly.com.au/december-2025-january-2026/essays/fatal-shore	https://www.algalbloom.sa.gov.au/news/backing-our-fishing-industry-key-focus-of-100-million-summer-plan

South Australia's fossil fuel revenue

income year	Total income $	Tax payable $	% of income paid as tax
2021-22	$6.6B	$99M	1.52%
2022-23	$8.0B	$72M	0.91%
2023-24	$10.2B	$92M	0.90%

Source: https://data.gov.au/data/dataset/corporate-transparency

Inclusions and exclusions

The same data set as The Australian Institute in their report, *The oil and gas industry in South Australia* (2024) has been utilised for this analysis; the same limitations apply.
This data does not refer specifically to South Australian operations of these companies. This data includes operations elsewhere:

- Data for Santos Limited appears to include South Australian operations as well as Santos' operations in Queensland and New South Wales. This data does not include Santos' northern Australian offshore operations and operations between Australia and Timor Leste, or the Darwin LNG terminal;
- Data for Beach Energy includes its Victorian and Western Australian operations. According to its company reports, around two thirds of Beach Energy's production is from South Australia;
- Data for Cooper Energy includes its Victorian operations.

Source: https://australiainstitute.org.au/wp-content/uploads/2024/07/P1692-Oil-anAustraliand-gas-in-SA-Web.pd.monitoring

Fish catches affected by the algal bloom

	Zone	Reduction in monthly catches compared 3 year average	Month period (2025)
King George Whiting	Gulf St Vincent /Kangaroo Island	->80%	September to December
Southern Garfish	Gulf St Vincent /Kangaroo Island	->80%	May–December
Southern Calamari	Gulf St Vincent /Kangaroo Island	->80%	July to December
Blue Swimmer Crab	Gulf St Vincent	->80%	August to October
Western King Prawn	Gulf St Vincent	->80%	October catch

	Dive site surveys, no. unwell or dead	location
Abalone	70-80%	Stansbury and Edithburgh

Species	Zone	Reduction in monthly catches compared 3 year average	Month period (2025)
King George Whiting	Spencer Gulf	-27%	Nov
Southern Garfish	Spencer Gulf	-8.53%	Oct-Nov
Southern Calamari	Spencer Gulf	-59.62%	September-Dec
Blue Swimmer Crab	Spencer Gulf	Confidential	
Western King Prawn	Spencer Gulf	Confidential	

Source:https://pir.sa.gov.au/__data/assets/pdf_file/0003/488541/summary-report-algal-bloom-impact-on-key-fish-stocks-sa-jan-2026.pdf

This document is intended for general informational purposes only. The analysis in this report was commissioned by the Conservation Council of South Australia and prepared by Springmount Advisory. All data and information is correct as of 20 February 2026. Views and opinions expressed in this document are prepared in good faith and

based upon publicly available information and datasets..

Springmount Advisory is a specialist practice that provides data and analytical insights alongside precision solutions that address root causes and deliver systemic change with a deep focus on industrial decarbonisation. Opinions expressed herein are subject to change without notice.

No part of this document may be reproduced in any manner without the written permission of Springmount Advisory. © March 2026