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Presentation to the IPC
18 February 2022

Narrabri Underground
Mine Stage 3 Extension
Project (SSD-10269)

Acknowledgement

Climate Energy Finance (CEF) has been engaged by Environmental Defenders Office (EDO) on behalf of Lock the Gate to prepare an independent expert witness report covering the global policy, market and financial landscape relating to the energy sector with respect to climate change and technology developments, and how they relate to the Narrabri Underground Mine Stage 3 Extension Project (SSD-10269 (Project)).

As author I, Tim Buckley, acknowledge that I have read the Expert Witness Code of Conduct in Schedule 7 of the Uniform Civil Procedure Rules 2005 (NSW) and that I agree to be bound by it.

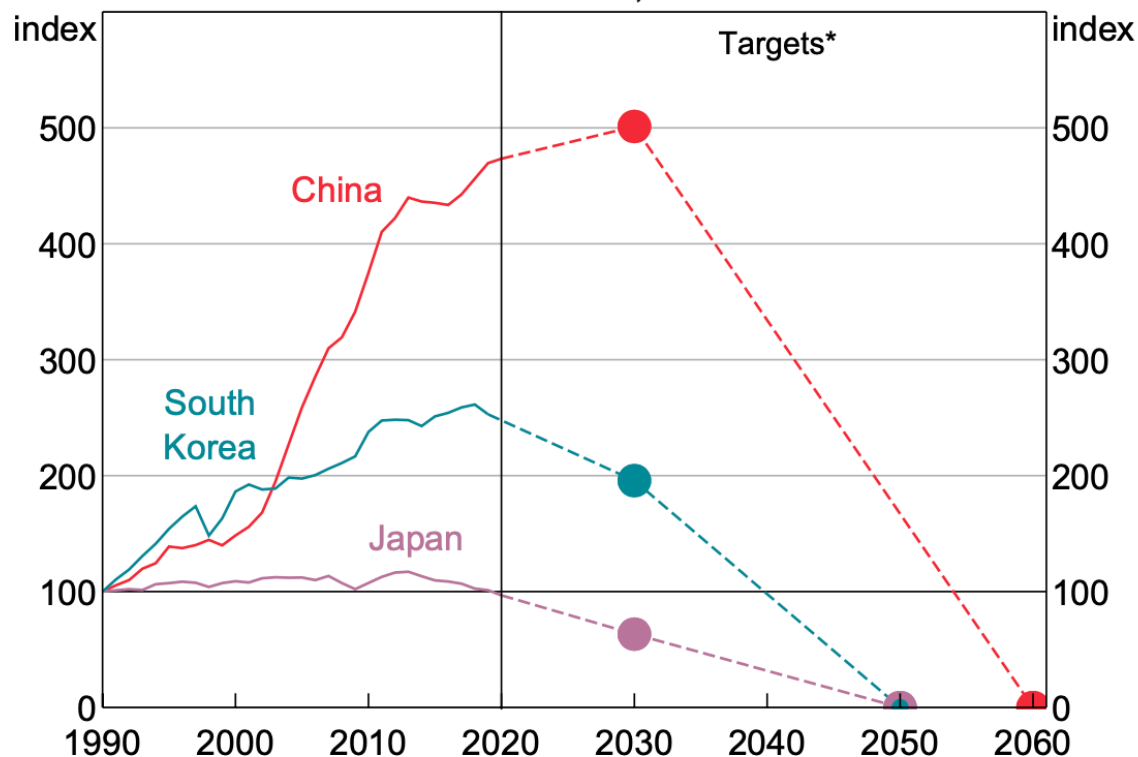
Agenda

- Global Policy Developments in Decarbonisation
- Technology-Driven Deflation in Renewables
- Global Finance Zero Emissions Pledges –US\$130 trillion
- The Structural Decline of Coal (the IEA, NSW Treasury)
- An Entirely Flawed Net Benefits Analysis from the Proponent
 - The Net Benefit Analysis forgets to deduct interest expense
 - The Net Benefit Analysis assumes Whitehaven pays cash tax
 - The Net Benefit Analysis dismisses CO₂ pricing on scope 1&2
 - Adjusting for these flaws gives a clear negative Net Benefit

Global Policy Developments

Carbon Dioxide Emissions

Selected economies, 1990 = 100



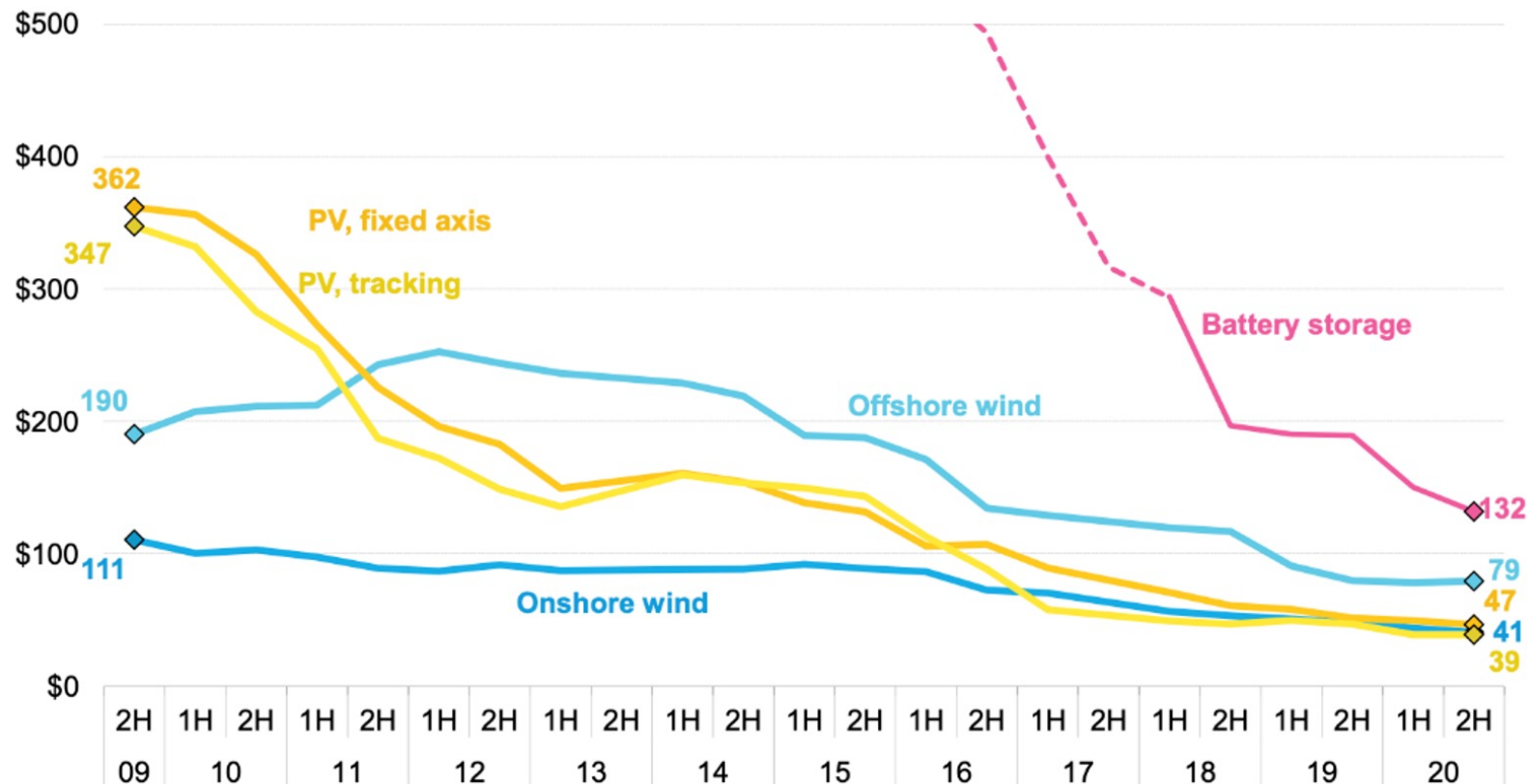
* Bubbles show targets; dashed lines show indicative paths to achieve them; Japan and South Korea's greenhouse gas targets are shown in terms of carbon dioxide; China's 2030 target is authors' estimate based on carbon intensity target for 2030 and authorities' desire for GDP growth to 2035

Sources: CEIC Data; International Energy Agency; RBA

Technology-Driven Deflation

Ongoing Renewable Energy and Battery Deflation

LCOE (\$/MWh, 2019 real)



Technology-Driven Deflation

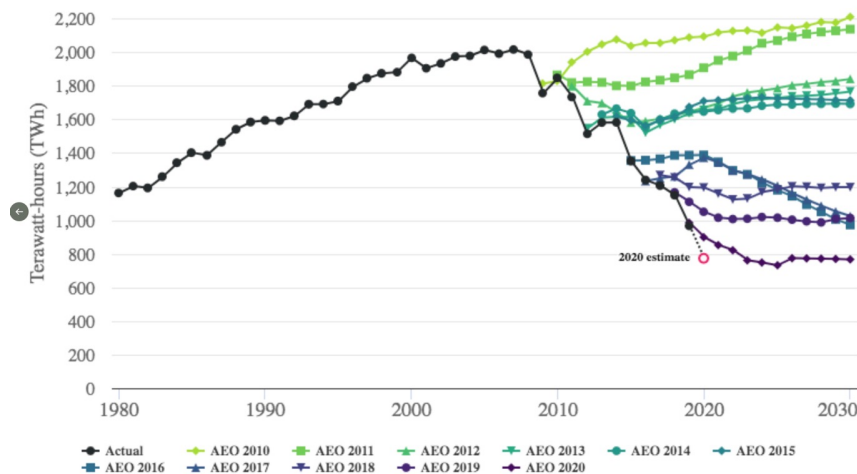
Coal Power Plants Are Becoming Stranded Assets

U.S. Coal Capacity Closures by Year (MW)



Source: S&P Global Market Intelligence, 10 February 2022

EIA Coal Demand Projections against Actual Outcomes (2010-2020)



Source: U.S. Energy Information Administration Annual Energy Outlook (2010-2020)

Global Finance Zero Emissions Pledges

UN Net Zero Finance Alliance 1.5°C

New Financial Alliance for Net Zero Emissions Launches



PRESS RELEASE ISSUED ON BEHALF OF THE COP25 and COP26 CLIMATE CHAMPIONS

Industry-led and UN-convened Net Zero Banking Alliance also announced today, co-launched by the UNEP Finance Initiative and the Financial Services Taskforce of the Sustainable Markets Initiative

- The Glasgow Financial Alliance for Net Zero (GFANZ), chaired by Mark Carney, UN Special Envoy on Climate Action and Finance, brings together over 160 firms (together responsible for assets in excess of \$70 trillion¹) from the leading net zero initiatives across the financial system to accelerate the transition to net zero emissions by 2050 at the latest.
- All GFANZ member alliances must be accredited by the UN Race to Zero campaign. They must use science-based guidelines to reach net zero emissions, cover all emission scopes, include 2030 interim target setting, and commit to transparent reporting and accounting in line with the UN Race to Zero criteria.
- 43 banks from 23 countries (with assets of \$28.5 trillion) form the Net-Zero Banking Alliance (NZBA) today – which joins GFANZ – with its members committing to align operational and attributable emissions from their portfolios with pathways to net-zero by 2050 or sooner.

US\$130 trillion by Nov 2021 (+90% in 6 months)

A Tectonic Shift Accelerates

In January of last year, I wrote that climate risk is investment risk. I said then that as markets started to price climate risk into the value of securities, it would spark a fundamental reallocation of capital. Then the pandemic took hold – and in March, the conventional wisdom was the crisis would divert attention from climate. **But just the opposite took place, and the reallocation of capital accelerated even faster than I anticipated.**

From January through November 2020, investors in mutual funds and ETFs invested \$288 billion globally in sustainable assets, a 96% increase over the whole of 2019.¹ I believe that this is the beginning of a **long but rapidly accelerating transition** – one that will unfold over many years and reshape asset prices of every type. **We know that climate risk is investment risk. But we also believe the climate transition presents a historic investment opportunity.**

BlackRock (AuM US\$10 trillion)
[Larry Fink 2021 CEO Letter](#)

The Structural Decline of Coal

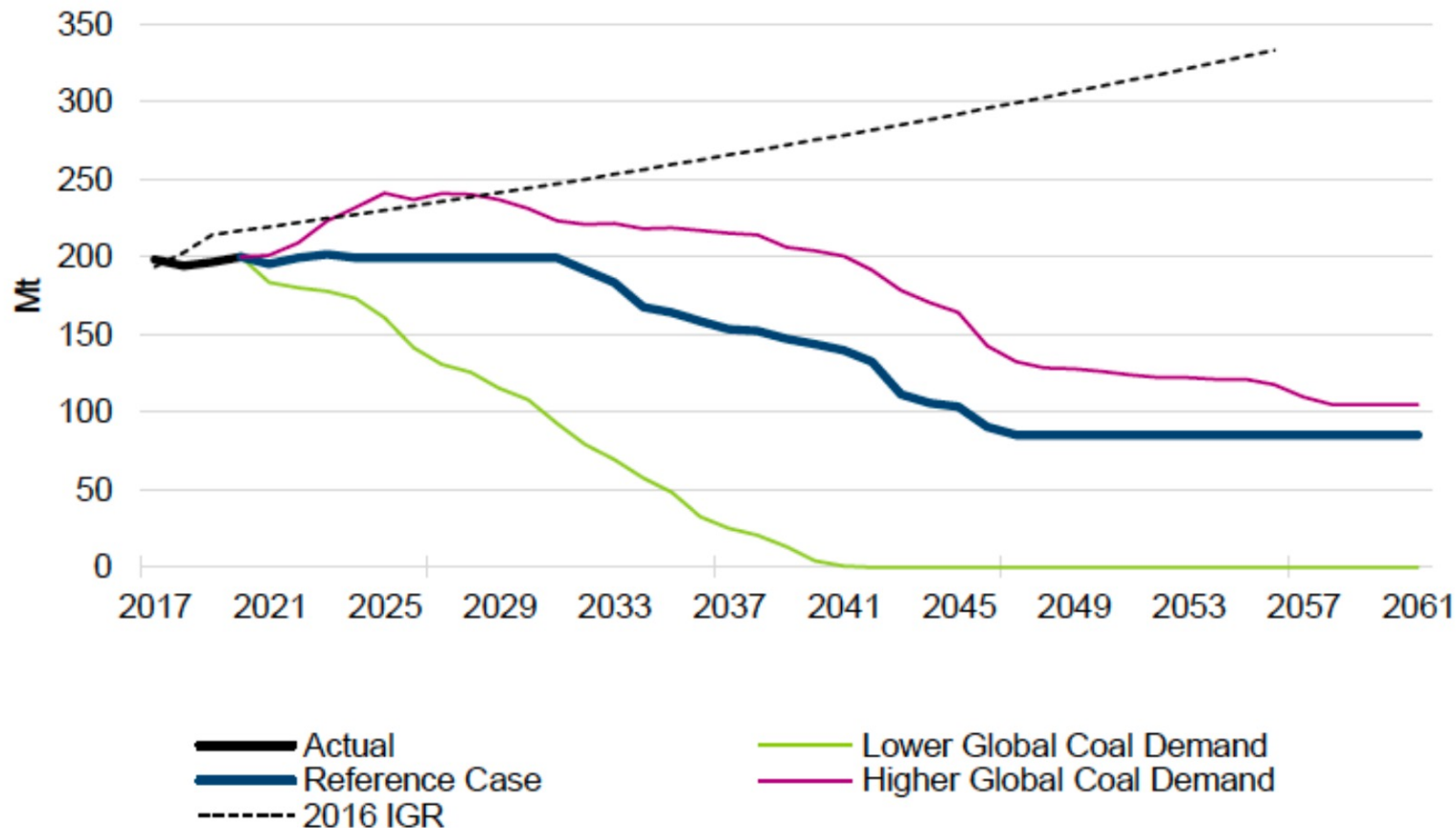
	2014	2015	2016	2017	2019	2020	Decline	SDS	SDS
	Mtce	Mtce	Mtce	Mtce	Mtce	Mtce	2020 vs 2014	2050	2050 vs 2020
							% Change	Mtce	% Change
Total Coal	5,680	5,531	5,271	5,360	5,717	5,462	-3.8%	1,189	-78.2%
Coking Coal	1,016	994	967	960	973	940	-7.5%	406	-56.8%
Thermal Coal	4,374	4,254	3,979	4,134	4,485	4,296	-1.8%	771	-82.1%

Source: IEA WEO2017 page 644-645, WEO 2021 page 318, CEF calculations

The Structural Decline of Coal

"The NSW Government recognises the need for urgent and deep reductions in GHG emissions."

NSW Treasury projected coal volumes 2021 vs 2016 (Mt)



Source: NSW Treasury. The Sensitivity of the NSW Economic and Fiscal Outlook to Global Coal Demand and the Broader Energy Transition for the 2021 NSW Intergenerational Report. May 2021

Narrabri Underground Stage 3 Extension

An Entirely Flawed Net Benefits Analysis from the Proponent

Table ES-1 Incremental net benefits of the Project for NSW community (\$2020)

Incremental direct and indirect costs	NPV \$m	Incremental direct and indirect benefits	NPV \$m
External effects (GHG emissions)	\$1	Royalties	\$259
		NSW share of company income tax	\$177
		Net producer surplus	\$163
Total direct and indirect costs	\$1	Total direct and indirect benefits	\$599
Net benefits to NSW			\$599

Source: Narrabri Underground Mine Stage 3 Extension Project Environmental Impact Statement Appendix L Economic Assessment, AnalytEcon ES-2

Narrabri Underground Stage 3 Extension

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I would suggest \$2,300m is a more accurate assessment.

I would suggest \$Nil is a more accurate assessment.

Recalibrating these would provide a massive net cost to the people of NSW. This project should be REJECTED.

Narrabri Underground Stage 3 Extension

An Entirely Flawed Net Benefits Analysis from the Proponent

Whitehaven Coal has received a net cash tax refund from the ATO of \$22m in the last decade.

Year ended 30 June	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2012-2021 Total
Sales	618	622	764	774	1,173	1,781	2,264	2,492	1,725	1,564	13,777
Pretax profit	14	-115	-56	-483	28	475	759	736	42	-768	631
Tax expensed	49	33	18	141	-7	-70	-234	-208	12	-224	-491
Cash tax paid *	2	22	21	36	-42	0	0	-15	-14	12	22
Tax expensed as % of PTP	350%	-29%	-32%	-29%	-26%	-15%	-31%	-28%	29%	29%	-77.9%
Tax expensed as % of Sales	8%	5%	2%	18%	-1%	-4%	-10%	-8%	1%	-14%	-3.6%
Cast tax paid as % of PTP	17%	-19%	-37%	-7%	-153%	0%	0%	-2%	-32%	-2%	3.6%
Cast tax paid as % of Sales	0%	4%	3%	5%	-4%	0%	0%	-1%	-1%	1%	0.2%

* A positive is a cash tax refund

Source: Whitehaven Annual Reports FY2012-FY2021, Climate Energy Finance calculations

The Net Benefit analysis of corporate tax for the Project 'forgets' to include interest expense. Whitehaven Coal had an annual \$50m interest expense in the last two years.

Scope 1 & 2 Emissions – CO₂ Prices are Rocketing Up

The Five-Year EU ETS Pricing (€/t)

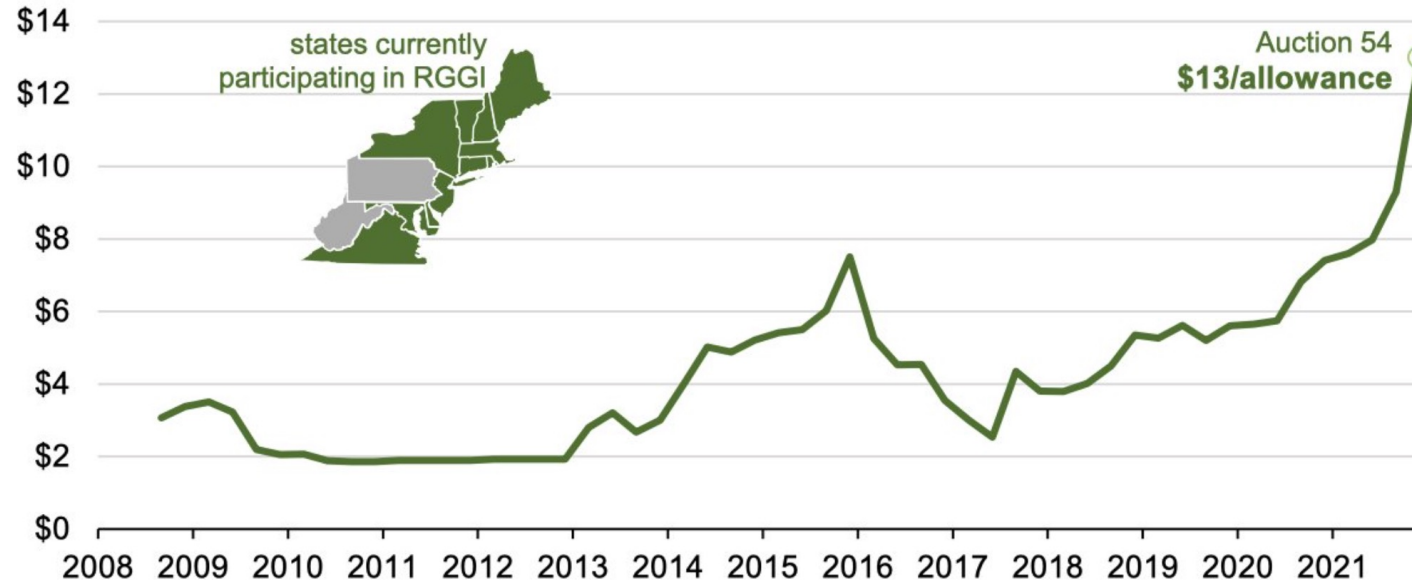


Source: [Trading Economics](https://www.tradingeconomics.com/eu-carbon-permits), Accessed 15 February 2022

Scope 1 & 2 Emissions – CO₂ Prices are Rocketing Up

The Thirteen-Year US RGGI Pricing (US\$/st)

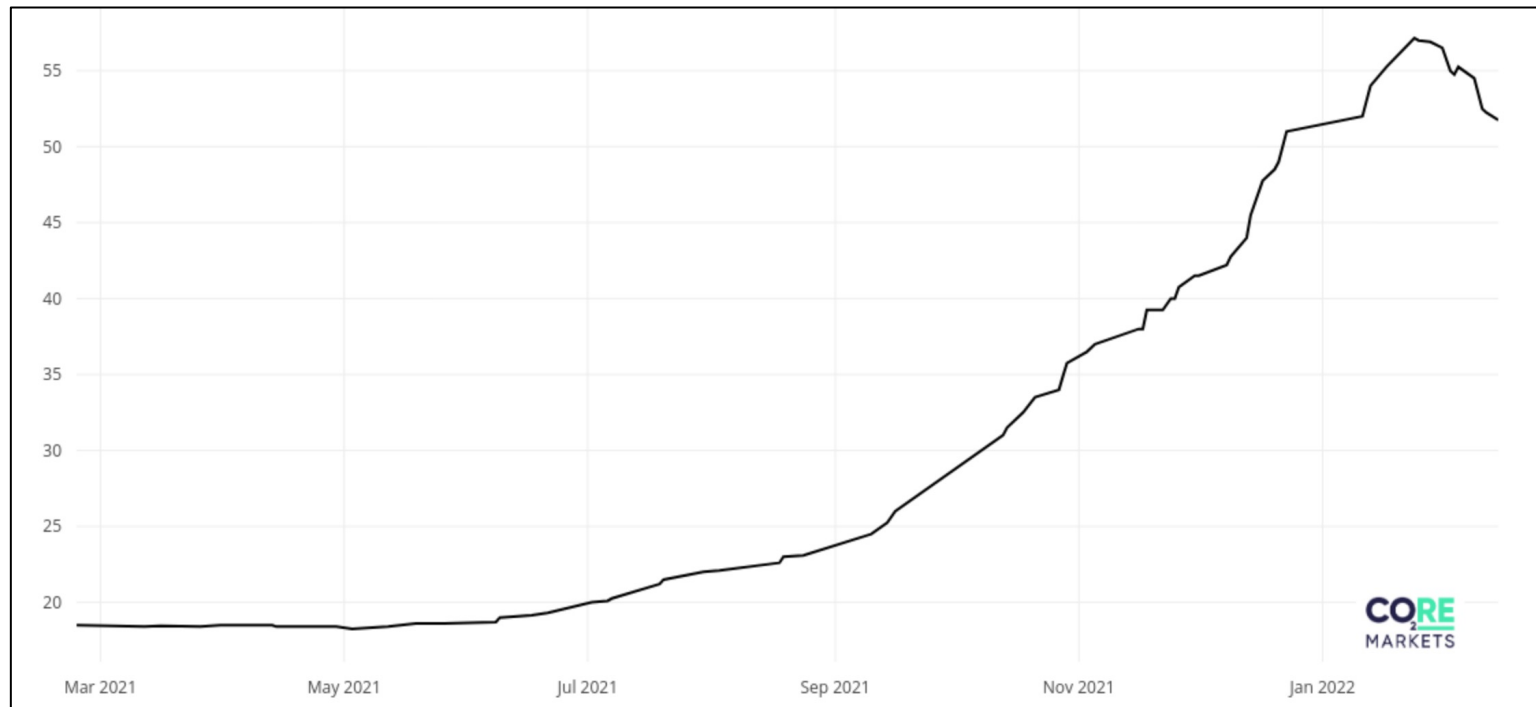
Regional Greenhouse Gas Initiative (RGGI) allowance clearing price (Sep 2008–Dec 2021)
dollars per allowance (one allowance = one short ton of carbon dioxide)



Source: Graph by the U.S. Energy Information Administration, based on [Regional Greenhouse Gas Initiative](#)

Scope 1 & 2 Emissions – CO₂ Prices are Rocketing Up

The One-Year ACCU Pricing (A\$/t)



Source: [Renewable Energy Hub](#), CORE Markets, Accessed 15 February 2022

Narrabri Underground Stage 3 Extension

An Entirely Flawed Net Benefits Analysis from the Proponent

The NPV of Scope 1&2 CO₂ emissions - Narrabri Underground Extension Stage 3

	per tonne	Exchange rate	A\$/t
Value of Emissions - ACCU/t spot			52
Value of Emissions - EU ETS (Euro/t)	92	1.59	146
Value of Emissions - RGGI (US\$/st)	13		
Value of Emissions - RGGI (US\$/t)	14	0.70	20
Value of Emissions - Woodside (US\$/t)	80	0.70	114
CO2 emissions Mt CO2-e Scope 1-2			27.627
<u>Net present value (NPV)</u>			A\$m
NPV of Emissions - ACCU/t A\$m			\$1,430
NPV of Emissions - EU ETS A\$m			\$4,044
NPV of Emissions - RGGI A\$m			\$564
NPV of Emissions - Woodside shadow price A\$m			\$3,157
Average (A\$m)			\$2,300

Note: Prices and exchange rates as of 15 February 2022

This is a real 2022 \$ value assuming spot prices remain constant till 2043

Woodside Climate Report, Feb'2022, Internal carbon price, 20 year methane life assumed.