

Market Examples from Biodiversity and Natural Capital

10am
26 July 2023

Joint Graduate School of Energy and Environment

King Mongkut's University of Technology Thonburi

Dr. Karl Nolles

Director

Aton Consulting Pty Ltd

Policy, Strategy, Due Diligence

Project Development

Biodiversity, Natural Capital

Electricity and Environmental Markets

1 Yarawini Drive, Orange NSW 2800
Australia



+61 414 807 992

karel.nolles@aton.com.au

www.aton.com.au

[LinkedIn](#)

[Google Scholar](#)

The Environmental Finance Lecture Series at JSGEE



~~Monday 26th June~~

- ~~• Challenges in the Australian Electricity Market~~

• ~~Tuesday 27th June 2023~~

- ~~• Survey of Environmental Finance~~

• ~~Thursday 29th June 2023~~

- ~~• Global energy transformation issues, and the what the IEA reports tell us~~

• ~~Wednesday 19th July 2023~~

- ~~• Introduction to the Taskforce for Nature related Financial Disclosures (TFND)~~

• **Wednesday 26th July 2023 ← THIS LECTURE.**

- Market examples from carbon/biodiversity markets

Who am I to be talking about all this ?

IN THE PAST

- Australian Financial Markets Association Electricity and Environmental Products Policy Officer
 - Developed a lot of data services and documentation
- Senior Lecturer / Founding Director University of New South Wales Centre for Energy and Environmental Markets
- Director in Macquarie Bank Climate Change team
- CEO of NextGen Brokerage

AND TODAY

- Visiting Professor JGSEE
- Founder and Director, Aton Consulting
 - Currently (among other things) advising NSW Department of Environment and Australian Grains Research Development Corporation
- Co-founder of Skjander Partners
 - Biodiversity and carbon investment management

Our Team

Dr Karl



Dr Karl (Karl) Nollies is an experienced energy and finance executive and academic, having held company directorships and CEO/COO/COO positions.

He founded Aton Consulting in 1998, and has alternated between consulting and employed roles including in the Macquarie Bank Climate Change and Utilities team and Macquarie Global Investments (2007-18), as a Senior Research Fellow in the Faculty of Business at UNSW from 2008-2007 (and as a founding director of the UNSW Centre for Energy and Environmental Markets), and with the Northern Territory Government (2019-20).

He has a PhD in Energy Economics and Electrical Engineering from the University of New South Wales.

He has been an investor/founder/inventor in six startups across peer-to-peer finance, energy trading, blockchain, and agritech, and a compliance adviser to various financial services companies.

In 2019 he was appointed as a Visiting Professor at the Joint Graduate School of Energy and Environment at King Mongkut University in Bangkok.

Since 2020 he has been a retained adviser to the NSW Department of Environment regarding ESG / Sustainable Finance and Biodiversity markets.

LinkedIn

Dr Liz



Dr. Elizabeth (Liz) Deagney is an experienced economic analyst and program manager, having held positions across the government and private sectors over the past 20 years. Before moving into consulting

Liz led the Advanced Analytics team within the New South Wales Department of Planning and the Environment, focusing on the state's natural capital agenda and helping to secure more than \$1B in funding for environmental projects.

Liz holds degrees in Advanced Science and International Economic Development, and a PhD in Statistical Ecology from the University of New South Wales.

Liz has designed and implemented large-scale projects focusing on productivity and efficiency in primary industries in Australia and the Pacific, including the farming, fisheries and forestry sectors.

She has extensive experience in delivering economic modelling, market valuation and cost benefit analysis for major programs and investments.

Liz has an appointment as an Adjunct Senior Lecturer at Southern Cross University.

Liz has received research, consultation, and performance awards from the NSW Government, the University of NSW, the Royal Zoological Society and the Australian Society for Fisheries Biology

LinkedIn

Dr Brian



Dr Brian Scott is the **Adrian Bead Associate Professor of Environmental Studies and Economics** at Washington College, Maryland, and has held a joint appointment to the Department of Economics and the Department of Environmental Science since 2007. He has a PhD in Economics from the University of Illinois, Chicago.

His teaching and research interests include institutions, rules, and assessing the viability of environmental and pollution markets, as well as volunteerism and charitable giving. He has received grants from the Illinois Environmental Protection Agency, the US Department of Agriculture, and the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO) to study the Chicago Cap and Trade using program, the viability of farmers entering in carbon sequestration markets, and farmers participating in nitrogen sequestration markets.

He has worked with Dr K in various projects and businesses since they were former PhD co-authors several years ago.

LinkedIn

[almost, but not yet a Dr] Stuart



Stuart Martin has over 20 years experience in investment management (particularly in the real estate sector), with progress such as Lead Loans, AER Asset and First State investments (London 2008-2011).

Stuart holds a Bachelor of Commerce (Land Economics), and also holds a Master of Sustainability.

Stuart's recently submitted PhD thesis examines the integration of natural capital accounting into agricultural decision making. His research was conducted in the Institute for Sustainable Futures at the University of Technology Sydney, and was part of the Food Agility CRC.

Stuart was Co-Founder of Open Resilient Funds Management (and was the Responsible Manager under the APFL), a group established to develop agricultural investments with environmental dividends.

LinkedIn

Skjander Partners



Daniel Brown, Director
San Francisco, United States & Sydney Australia.
Dual US/Australian citizen

- Macquarie Group: Global Investments Division management team focused in agriculture, environment, and real assets.
- Leadership team of OFX(Macquarie company) from post acquisition to ASX IPO.
- Principal Investment Manager for Queensland government in North America facilitating \$450mUSD in foreign direct investment.
- Deep connections to Silicon Valley and successful track record of taking growth firms to acquisition/IPO.
- Bachelors of Science Business Administration, The Citadel, USA 2003. Graduate of Law, Sydney Law School, University of Sydney, 2010. Columbia University - Graduate Private Equity & Venture Capital Program.
- FINRA / Securities Exchange licensure - Series 7, 24, 53, 6, 66, 63.



Jerry Joys, Director
Operations, Sydney, Australia. Dual US/Australian citizen

- Head of Supply Chain and Operations Red Bull North America
- COO of Fiji Water
- COO of Beyond Meat
- Head of Procurement at The Wonderful Company, the largest agriculture operation in North America
- Head of Supply Chain at Wonderful Citrus.
- MBA Rotterdam School of Management, Erasmus University, Netherlands, Bachelor of Modern Languages, The Citadel, USA. Six Sigma Black Belt Certification, fluent in Spanish and German.

SKJANDER PARTNERS



Dr. Karel (Karl) Nollies, Director
Environment & Natural Capital, Sydney, Australia

- Macquarie Group: Founding director in Macquarie Capital Utilities, Renewables and Climate Change business. Deal list of approximately \$2.4B including across Water, Renewables, Carbon/Environmental instrument trading.
- CEO of NextGen Energy/Environmental Brokerage.
- Head of Strategy for Clean Energy Derivatives Corporation.
- Senior Research Fellow & Founding Director UNSW Centre for Energy & Environmental Markets and Visiting Professor Saint Graduate School of Energy and Environment, King Mongkut University of Technology Thailand.
- Consultant with NSW Department of Environment on green finance.
- Hons. Electrical Engineering, University of Melbourne (1999) PhD (Economics & Electrical Engineering), University of New South Wales (2007).



Anthony Hogarth, Director
Legal, Sydney, Australia

- Macquarie Group - Associate Director/lawyer within Macquarie Infrastructure and Real Assets division advising on funds and asset management across the infrastructure, agriculture and cleantech/renewable energy sectors.
- Supercars Australia - General Counsel of the Supercars Group of companies under ownership of Archer Capital.
- Botany Group - current Commercial Director with responsibility for M&A, special projects, proprietary brands, and legal.
- Bachelor of Commerce (Economics & Finance) and Bachelor of Laws (First Class Honours) - University of Sydney.
- Emerging COO Program - Stanford Graduate School of Business.



“Environmental Finance” in a page

(all these dot points covered in previous lectures)

Debt defined by “Use of Proceeds”

- Green Bonds
- Blue Bonds
- Green Loans,

Debt defined by “Use of Proceeds and Achievement”

- Social Impact Bonds
- Sustainability Linked Bonds

Equity or other investments

- ESG ratings (On general or specialist funds)
- Biodiversity Funds
- Carbon Credits (Voluntary, Mandatory)
- Biodiversity Credits (Voluntary, Mandatory)
- Nature Repair Market (?)
- Impact Investors

TODAY

- Discounted loans
- Valuing Resilience
- Natural Capital Accounting
- Impacts on Valuations
- Assessment of Risks
- Changes in Management
- TNFD
- Accounting Standards

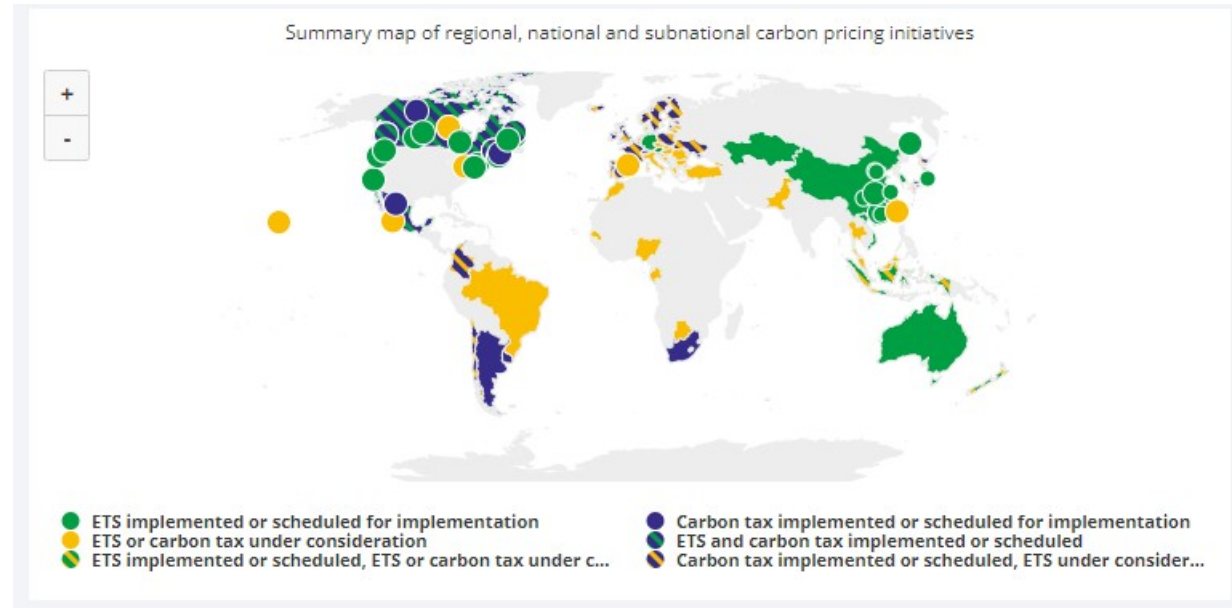


Mandatory (v's Voluntary) Markets

For carbon there are an increasing number of mandatory / government backed schemes.

Voluntary carbon remains an active market.

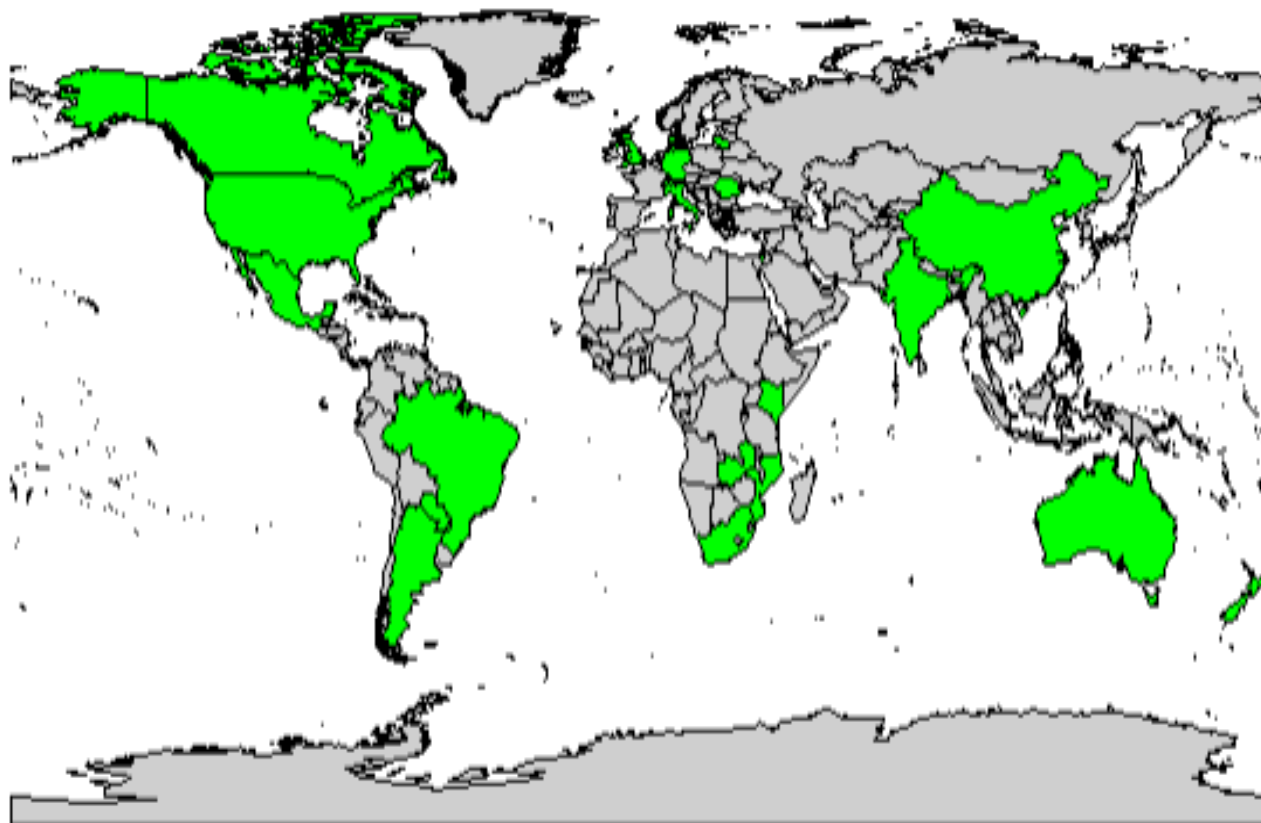
In biodiversity there are a small number of government backed schemes, and voluntary standards are less comprehensive.



<https://carbonpricingdashboard.worldbank.org/>



Voluntary markets for carbon
 Approx. 400 projects use Ag Land Management methodologies in 22 countries,
 including developed countries



Including Australia

Name	Proponent	Project_Type	AFOLU Activities	Methodolo	Status	Country_Are	Annual Emission Reductio	Region	Crediting Period Start Date	Crediting Period End Date
Ground-Truth Australian Orchards	Carbon Friendly Pty Ltd	Agriculture Forest	ALM	VM0042	Under validation	Australia	900698	Oceania	2020-02-01	2040-01-21
Ground-Truth® Australian Orchards	Carbon Friendly Pty Ltd	Agriculture Forest	ALM	VM0042	Rejected by Administratc	Australia	232924	Oceania	2018-07-01	2038-06-



Some of the most recognised carbon standards are the Verified Carbon Standard (VCS) by VERRA, the Gold Standard (GS), the American Carbon Registry (ACR), the Climate Action Reserve (CAR), the Clean Development Mechanism (CDM), Plan Vivo,²⁴ VERRA for Climate, Community and Biodiversity Standard (CCBA), the REDD+ Environmental Excellence Standard (ART/TREES), the Sustainable Development Verified Impact Standard (SD VISTa), the Gold Standard for the Global Goals (GS4GG), the Peatland Code, the Woodland Carbon Code, and ISO 14064-2.



Voluntary markets for carbon

Verra has developed several methodologies that apply to agriculture and address various aspects of sustainable land management and agricultural practices:

1. VCS Agriculture, Forestry, and Other Land Use (AFOLU) Standard: This standard provides a framework for quantifying and verifying greenhouse gas emission reductions or removals from agricultural and forestry projects. It covers activities such as agroforestry, sustainable land management, and soil carbon sequestration.
2. VCS Agriculture, Forestry, and Other Land Use (AFOLU) Module: This module provides specific guidance and requirements for accounting emissions and removals in agricultural and land use projects under the VCS framework. It addresses issues like baseline determination, additionality, leakage, and monitoring.
3. Sustainable Agriculture, Forestry, and Other Land Use (AFOLU) Practices: Verra has developed several methodologies that focus on specific sustainable practices within the agriculture sector, such as Sustainable Rice Cultivation, Improved Manure Management, and Livestock Management.
4. SD VISTa: The Sustainable Development Verified Impact Standard developed by Verra provides a framework to measure and report the social and environmental impacts of projects across various sectors, including agriculture. It can be applied to assess the sustainability performance of agricultural projects and initiatives.



Voluntary markets for carbon

Verra standards for generation of voluntary carbon credits via Ag Land Management methodologies

Code	Name	Implementation looks like	Projects
VM0022	N2O Emissions Reductions in Agricultural Crops...	Nitrogen fertilizer rate reduction	1 project in USA
VM0032	Methodology for the Adoption of Sustainable Grasslands through Adjustment of Fire and Grazing	Altering fire frequency and/or intensity, (eg, shifting from late season to early season burning or changing prescribed burn schedules from one every other year to one every five years) in ways that increase carbon inputs to soils.	1 project in Kenya
VM0042	Improved ag. land management. (replaces VM0017)	Practices include, but are not limited to, reduced tillage and improvements in fertilizer application, biomass residue and water management, cash and cover crop planting and harvesting practices.	77 projects including in USA and NZ
VM0044	Biochar utilisation on soils and non-soil applications	Conversion of waste biomass into biochar at new biochar production facilities. Eligible soil applications include crop- and grasslands.	New method - none identified
VM0046	Reducing food loss and waste	Any activity that keeps food in human supply chain. Can be applied to farms, food processing facilities, retailers, food services/hospitalities, and households.	New method - none identified
AMS-iii.AU	Methane reduction via water management in rice cultivation	Management of frequency and consistency of crop flooding. Designed to be used as small (farm) scale.	Nearly 300 projects in China and India



Growth in “biodiversity” funds

Biodiversity fund assets under management

Active funds				Closing AUM (millions)			
Company	Fund name	Launch date	Base currency	2022		2021	
				Base currency	US dollar*	Base	US dollar*
AXA IM	ACT Biodiversity Equity ETF	2022	USD	333	333	n/a	n/a
AXA IM	World Funds - ACT Biodiversity	2022	USD	125	125	n/a	n/a
Swiss Life	Equity Environment and Biodiversity Impact	2021	EUR	104.1	111.1	36.6	39.1
La Financière de l'Échiquier	Climate & Biodiversity Impact Europe	2020	EUR	86	91.8	n/a	n/a
La Banque Postale	Tocqueville Biodiversity ISR	2022	EUR	49.3	52.6	n/a	n/a
BNP Paribas	Easy ESG Eurozone Biodiversity Leaders PAB ETF	2022	USD	51.5	51.5	n/a	n/a
Piéride Asset Management	Europe Biodiversité	2008	EUR	44.5	47.5	111.9	119.5
UBP	UBAM - Biodiversity Restoration	2021	USD	42	42	86	86
Federated Hermes	Biodiversity Equity Fund	2022	USD	37.8	37.8	n/a	n/a
Ossiam	Food for Biodiversity ETF 1A USD	2020	USD	36.6	36.6	37.6	37.6
ASN	Biodiversiteit Fonds	2021	EUR	28.7	30.6	18.8	20.1
Karner	Biodiversity Impact Fund	2019	USD	8.9	8.9	10.6	10.6
HSBC	World ESG Biodiversity Screened Equity ETF	2022	USD	7.6	7.6	n/a	n/a
Fidelity International	Sustainable Biodiversity Fund A-ACC-USD	2022	USD	5	5	n/a	n/a
Robeco	RobecoSAM Biodiversity Equities	2022	EUR	3	3.2	n/a	n/a
Crédit Mutuel Arkéa	AIS Biodiversity First P	2022	EUR	0.5	0.5	n/a	n/a
				Total	984.7		312.9

*Rate on 31 December, 2022 of 1 EUR = 1.06749 USD

Source: Each institution supplied its own data except for Piéride, La Banque Postale and Crédit Mutuel Arkéa, whose information came from Morningstar Direct

[https://www.environmental-finance.com/content/analysis/biodiversity-fund-assets-triple-in-2022-to-nearly-\\$1bn.html](https://www.environmental-finance.com/content/analysis/biodiversity-fund-assets-triple-in-2022-to-nearly-$1bn.html)

These are funds with an equity screen of some kind

Environmental Finance Channels Events COP Awards Green Bonds ESG Data Natural Capital

Home / Analysis / Biodiversity fund assets triple in 2022 to nearly \$1bn

27 February 2023

Biodiversity fund assets triple in 2022 to nearly \$1bn

By Thomas Cox

in t f y p

Assets in biodiversity funds passed \$984 million at the end of 2022, with a flurry of strategy launches despite macroeconomic woes, Thomas Cox reports.

Total assets held in thematic biodiversity funds more than tripled over the course of last year, boosted by several fund launches, according to research by *Environmental Finance*.

The combined assets under management (AUM) of funds or strategies mentioning “biodiversity” in their title climbed to \$984 million from just \$313 million a year before.

New launches and inflows helped the biodiversity fund universe grow, despite a tough year for equities markets.

Of the strategies that were in operation at the start of 2022, all but one made annual returns of minus 10% or worse.



An example themed investment fund

Sustainable Business

Climate Asset Management raises \$650 mln to invest in nature projects

By Virginia Furness

December 14, 2022 7:26 AM GMT+11 · Updated 6 months ago



A bee sits on a flower budding from an almond tree, which rely on natural pollinators for fertilization in an Almonds grove in Tel Arad, southern Israel March 4, 2020. REUTERS/Amir Cohen

LONDON, Dec 13 (Reuters) - Climate Asset Management, the specialist "natural capital" investment manager formed by HSBC Asset Management ([HSBA.L](#)) and climate change advisory firm Pollination Group, said it has raised \$650 million for projects which aim to protect the environment.

The capital raised from institutional investors and corporates is one of the larger amounts to be raised in the nascent market which looks to twin improved environmental outcomes with financial or other returns by investing in nature.

Co-optimising real assets

Paying a financial OR an environmental return

(Note Pollination was involved in the Pakistan Blue Carbon Project)



Delta Blue Carbon Project Pakistan

<https://carbonmarketinstitute.org/projects/delta-blue-carbon-project-sindh/>

Buyers are claimed to be “commercial in confidence” on the CMI site, but are readily extracted from the Verra registry.

Case study: Project	Delta Blue Carbon – Pakistan, Mangroves
Target	Protect the Indus Tidal wetlands and deliver significant social health benefits to local community
Validation	Climate, Community and Biodiversity Standard, Verified Carbon Standard VERRA
Size	224,000 ha
Credits issued	3.15million
Outcomes	Environmental Finance award 2022, created 21,000 jobs, planted 86,409 hec and removed an estimated 142M/TCO ₂ . Estimated last sale price at \$USD27.80 per credit in 2022
Proponents/ Partners	Microsoft, Pollination, Carbon Growth Partners, Silverstrum

Project	Period	Purchaser	Industry Sector	Number of Credits retired
Delta Blue - Pakistan	27/10/2022	EY Global Services	Consulting/Accounting	1000
	31/10/2022	Microsoft	Technology	10000
	11/11/2022	Tom Hellebo		1
	18/12/2022	E.ON SE	Energy	30
	26/1/2023	KBC Group NV	Finance	3400
	20/2/2023	Finnair Oyj	Airline	142
	22/2/2023	Pollination Group	Consulting	196
	31/3/2023	CMA CGM	Logistics	32,866
	3/4/2023	The Ocean Cleanup	NEP	112
	3/4/2023	Sylvan Group	Impact Investor	30
	4/4/2023	Carbon Growth Partners (Australia) Pty Ltd	Investment	123
	24/4/2023	London School of Economics	Education	1037
	16/5/2023	Boston Consulting Group	Consulting	14876
	23/5/2023	Temasek Capital Management	Investment	5000
	24/5/2023	QLD Chamber of Commerce and Industry Ltd	Govt	51

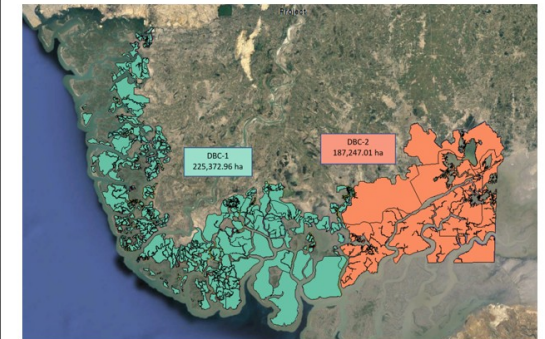
Source: Verra Register

Across two phases of implementation, the Delta Blue Carbon Project aims to restore over 300,000 hectares of degraded mangroves on the south-east coast of Pakistan. The project will rehabilitate and restore these degraded lands through assisted natural regeneration alongside active replanting. So far 86,409 Hectares have been replanted.

Project partners include the Government of Sindh, Pollination, Silverstrum, and the Climate, Community & Biodiversity Alliance who have verified the project for assurance of credit integrity.

The first issuance period results in 3.1 million voluntary carbon credits being issued to the project. The funding from these credits has contributed to greater employment opportunities in the area, as well as investment in health, water and education initiatives. In addition to social co-benefits, the project also secures habitat for 11 species on the International Union for the Conservation of Nature’s Red List, including the fishing cat, the Indus River dolphin, and the Indian pangolin.

The project aims to deliver over 250 million high-integrity blue carbon credit units over its 60-year lifetime.



The areas of the two phases of the project are shown here on this map.

Another blue carbon project (less financially successful it would appear)

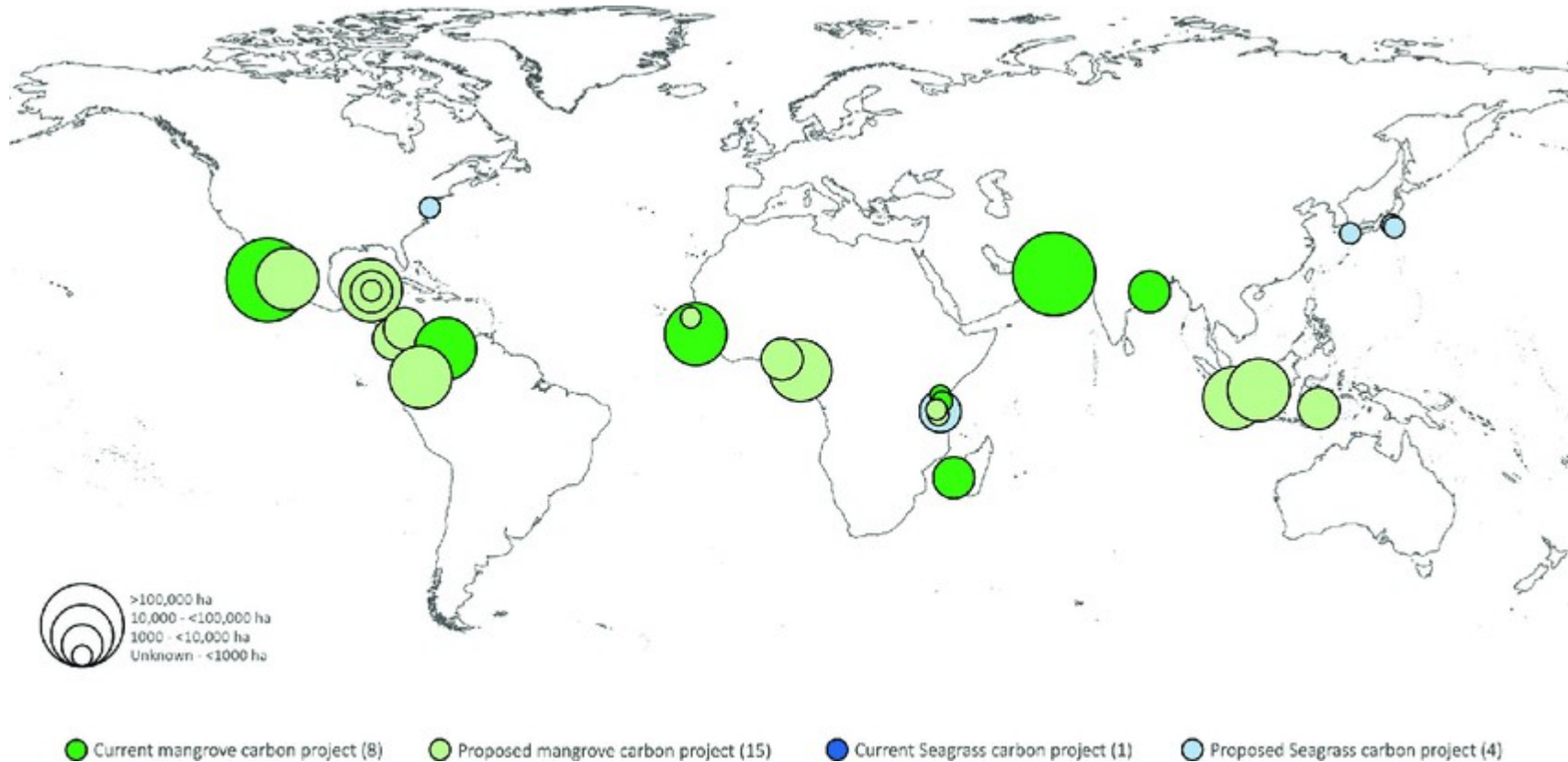


Case study: Cispata Bay

Target	Mangrove - avoided deforestation
Validation	Verified Carbon Standard
Size	11,000 ha
Credits issued	Sold all available credits on 1 st issuance above market. Total certificates issues 59,363 [34]. Even though demand for credits appears strong, the return on project development is difficult to assess due lack of data. It is notable that <u>Cispata Bay</u> credit sales currently fall short of covering project costs. The Impact report for that project notes 92% of funds raised from credit sales will be reinvested in the project. There is a risk that if funding falls short the project benefits may not evolve and community support will be lost.
Outcomes	Credit sales are not adequate to meet all project costs. Project costs 70% covered with balance provided by proponents and biodiversity loss compensation
Proponents/Partners	Apple, Conservation International and various local partners

Extracted from Verra registry

Global distribution of Blue Carbon Projects



Extracted from: D. A. Friess, J. Howard, M. Huxham, P. I. Macreadie, and F. Ross, "Capitalizing on the global financial interest in blue carbon," PLOS Climate, vol. 1, no. 8, p. e0000061, Aug. 2022, doi: 10.1371/journal.pclm.0000061.



Another example themed investment fund (Kilter Rural)

Sustainable fund kicks off raising

Larry Schlesinger

Private banks and high net worth investors have piled into the first raising of Kilter Rural's new \$500 million sustainable agricultural fund amid a wider global push by investors into "natural capital" assets – those that combine traditional farming with carbon sequestration and biodiversity initiatives.

Kilter Rural, majority owned by ASX-listed fund manager Regal Partners, kicked off the initial \$65 million raising on Thursday to fund the acquisition of 7000 hectares of high-value cropping farmland near Tocumwal in the NSW Southern Riverina.

The three farms and associated water assets will seed the new fund, which is expected to generate annual income returns of 4-5 per cent and total returns of 10-12 per cent.

Natural capital, the new buzzword in agricultural investment, refers to investments that combine the production of food and fibre with sustainable farming practices focused on carbon abatement and improving biodiversity.

Kilter Rural plans to reforest 30 per cent of the land it acquires to generate "high-integrity carbon credit units for sale in rapidly growing carbon markets" while also generating income from growing canola, wheat, fava beans, barley and corn.

"We will utilise existing and emerging technology to achieve carbon sequestration at scale in the production of sustainable food," explained Kilter Rural CEO Cullen Gunn.

Kilter plans to expand the portfolio

to 21,000 hectares across south-east Australia.

The initial raise will not close until the end of this month, and Andrew Mouat, Kilter Rural's head of growth and distribution, told *The Australian Financial Review* early interest suggested the firm would achieve its \$65 million target.

"Indications are [we will raise] above \$40 million from a couple of large private banks, [which are essentially

We're confident of raising the initial capital by the end of May.

Andrew Mouat, Kilter Rural's head of growth and distribution

high net worth advisory firms]," Mr Mouat said.

"Plus there are our existing HNW investors and family offices, so we're confident of raising the initial capital by the end of May to settle the seed assets we have already signed purchase contracts on."

Mr Mouat said investors liked the uncorrelated returns of farmland to other asset classes, the operating upside from carbon and biodiversity credits, and the positive environmental effects from revegetation of native ecosystems.

Prime farmland has delivered total returns of 12.5 per cent per annum over the past five years, according to the Australian Farmland Index.

Co-optimising real assets



Monday 8 May 2023
www.afr.com | The Australian Financial Review
commercialrealestate.com.au



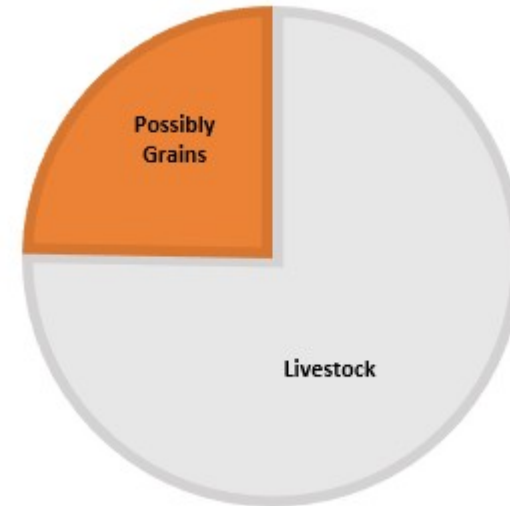
Kilter plans to expand the portfolio to 21,000 hectares across south-east Australia.

Regulatory markets for carbon in Australia related to Agriculture specifically



Activity	No. projects	No. credits
Beef Herd Management	286	1025537
Dairy Manure Management	1	0
Effluent Management	14	287468
Pasture Management	38	0
Piggery Management	10	820905
Soil C from Grazing	38	1904
Fertiliser Management	123	0
Nutrient Management	2	0
Soil C via Irrigation	1	0
Soil redistribution	1	0

Of a total of 1850 ERF registered projects, 514 employ agricultural methods, 127 possibly relate to grains:





Biodiversity Credits

- The 7-19th December 2022 UN Biodiversity Conference (COP15) concluded with global pact to protect biodiversity. Australia, the US and the EU have ratified the targets (as have many other countries).
- Includes an explicit target to have 30% of Land and Sea under some form of conservation by 2030.
- In the Australian context, compared to the current size of National Parks, this implies at least a 3x increase in conservation activity in Australia, much of which will need to be on private land.
 - (National Parks cover 8% of Australia. 55% is under some kind of private ownership)
- Plans for the further development of environmental finance to make the enormous investments required to meet these goals.
- **Biodiversity markets will likely be significantly larger than Carbon markets by 2030.**
- Australia and the United States have committed to coordinating their policies, and Australia has already announced it will launch a national biodiversity “Nature Repair Market” scheme. (Draft legislation has been released)



Australian Nature Market Repair bill

This is very much a work in progress

It is unclear where the demand side of the “Market” will be, although noting policy commitments made, it could be quite large.

Instrument appears to be a single farm-wide certification. This is unlikely to be the form that ultimately becomes a “market”

Unclear currently exactly what opportunities it directly presents for Grains producers.



Voluntary markets for biodiversity

“Verra is developing a biodiversity methodology in its [Sustainable Development Verified Impact Standard \(SD VISta\) Program](#). This new methodology will enable the independent assessment and verification of the real-world biodiversity benefits and certification of nature-positive investments. The development of this methodology will be supported by the [SD VISta Nature Framework Advisory Group](#), which includes leading conservation NGOs and biodiversity experts motivated to close the biodiversity finance gap.

Project developers will be able to use the methodology to quantify the biodiversity benefits of their conservation and restoration activities. Once a project has been verified using SD VISta’s world-leading systems, companies can purchase the resulting biodiversity credits to invest in biodiversity and progress their nature-positive commitments.”



An example Land Based Carbon Deal

Information Memorandum

Wonganoo Station | Wonganoo Road East Wiluna,
WA 6506

349,000 ha (862,000ac)

Prepared by Terry Norrish
Terry Norrish Rural Property
Nutrien Harcourts Moora

For Sale by Expressions of Interest

Area: 349,000 hectares (862,000 acres)

Rainfall: 260mm

Water storage/distribution: There are 38 water points currently either in use or to be developed. By the end of 2021 27 of these water points will be completed. Average water depth is 20metres with the quality being described as excellent. There are numerous seasonal water courses.

Cattle: The property currently runs between 2000 – 2500 head of cattle which are droughtmaster/Hereford cross. There are large areas of the property under utilized allowing for upside in this opportunity.

Carbon: The property has a current carbon agreement with Carbon Farmers Australia.

To summarize there are 1,600,000 ACCU's registered for a permanence period of 25 years. 330,000 ACCU's under contract with the Clean Energy Regulator for a 10 year contract worth \$3,291,000 at \$14.25 per ACCU.

A further 1,270,000 ACCU's are uncontracted under an Optional Delivery Contract.

Further information via a spreadsheet can be provided which in summary will provide an estimated 25 year income stream of just under \$44,000,000 net of the carbon consultant(CFA)

Property overview

Wonganoo Station is a rare opportunity to acquire a large pastoral lease in what is becoming a sought after area for many different reasons.

Originally the property was set up as a sheep station which with the onset of dog issues was transformed to a cattle property. It has been operated extensively as a cattle station for the last 20 years.

The soil is in its original state and is typical strong red clay loams and rocky outcrops. Landscapes are open plain with numerous seasonal watercourses which are typically lined with Mulga trees.

There is a mixture of grass(wire wanderrie), spinifex,mulga trees, needlebrush and various other native shrub and tree species.

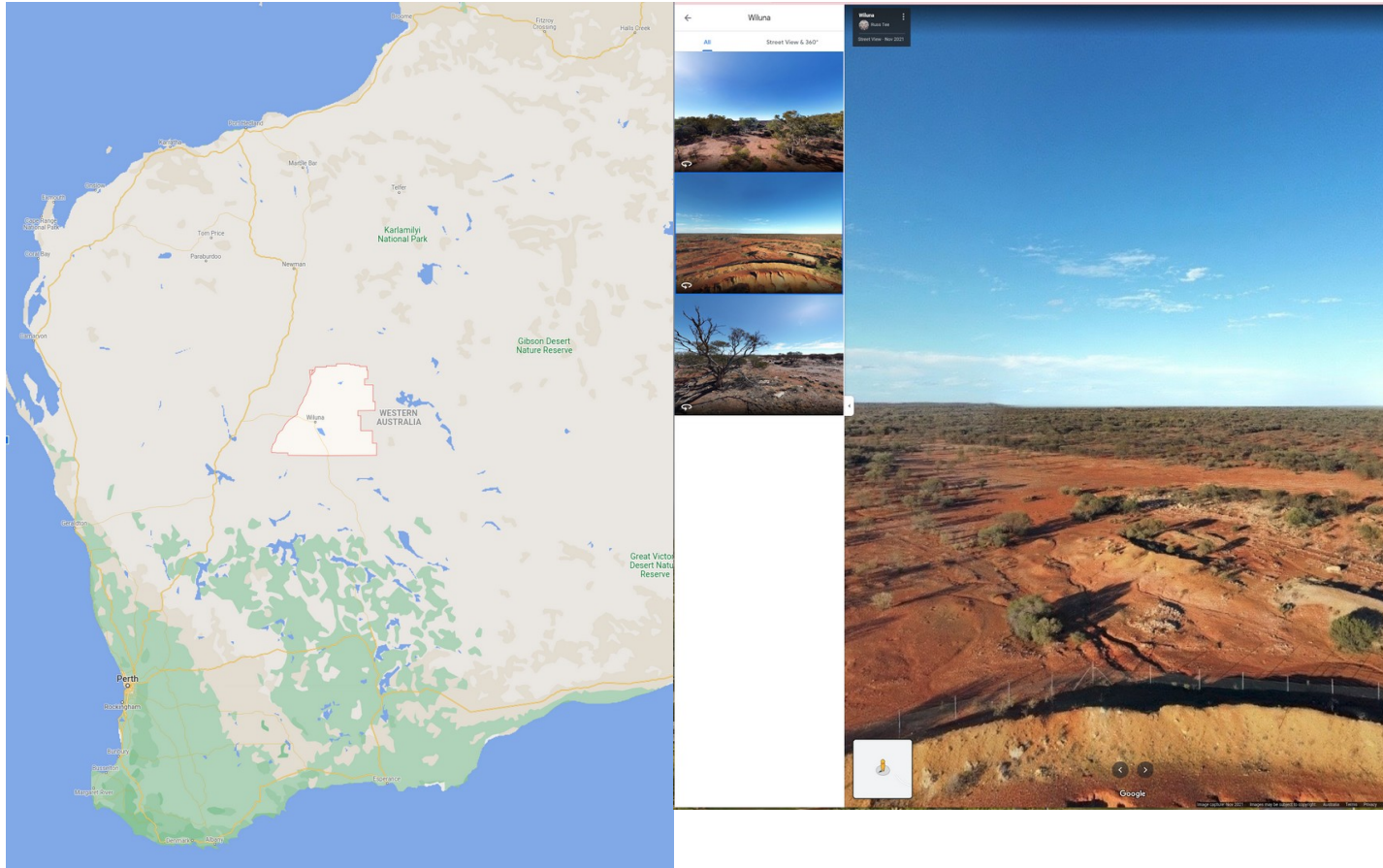
Rainfall averages in the area are 250mm which are inconsistent and dependant on seasonal lows moving down from the eastern Pilbara. Recent years have been kind to the area and the country is in good shape.

The homestead and living quarters are modest and utility improvements provide adequate service for the style of business.

Fresh water from bores is exceptional and abundant.



So where is it ???





My deal notes at the time....

1,600,000 ACCU's registered for a permanence period of 25 years.

330,000 ACCU's under contract with the Clean Energy Regulator for a 10 year contract worth \$3,291,000 at \$14.25 per ACCU.

A further 1,270,000 ACCU's are uncontracted under an Optional Delivery Contract.

It had been a sheep station for most of its agricultural existence but an accountant in Perth purchased the property recently to take advantage of the carbon market.

The highest offer received to date is \$7.5m but the vendor will not sell for less than \$10m.

The information pack suggests that the 25 year ACCU income stream could total \$44m - or \$1.76m per annum (basic straight line assumptions) which would generate a nice return for this asset.

It feels like the carbon returns for this asset are somehow more attractive than growing trees - although the capital gains on the land may not compare.



An example biodiversity credits deal...

**DRAFT:
NOT FOR CIRCULATION WITHOUT
ATON'S APPROVAL**



Policy, Strategy, Due Diligence
Project Development
Biodiversity, Natural Capital
Electricity and Environmental Markets

Thoughts on one of the Syndication Sanctuaries assets

Some analysis of one of the assets developed by Syndication
Sanctuaries

1 May 2023

Dr Karl Nolles, Director. (e) karel.nolles@aton.com.au

Some approximate turnovers

- **NSW BOS (21/22) - \$100M (almost entirely compliance)**
- **ACCU the total value of the secondary market (excluding ERF deliveries) - approximately \$200 million over 2022**
- **LGC Market (21/22 validated, at (say) \$50) – approx \$1.5B**
- **Australian Green Bond Issuance (22 YTD) – approx \$4.6B (\$6B full year) (*)**
 - The largest single use of funds being renewable energy infrastructure, along with funding of rail infrastructure.
- **Global Green Bond Issuance (22F) - \$850B**
 - (+500B Social/other bonds) (**)

(*) <https://www.bloomberg.com/news/articles/2022-08-20/climate-action-to-spur-australian-green-bonds-to-record-year>

(**) Environmental Finance Magazine, Biodiversity Insight 2021.

Market this year proving harder to transact for ESG/Natural Capital themed funds...

2023 commenced with a number of new entrant funds (and established players) attempting to launch.

Several seemed to offer a “co-optimisation” model.

- Raises interesting questions about assumed valuations on the various possible revenue streams.
- Absent liquid markets, valuations are inherently subjective.
- Wide range of “product” in the markets, which can be blended in a wide range of ways....

Natural capital opportunities 'few and far between'

Channels: IMPACT, Investment, Natural Capital

Companies: Jupiter

People: Jon Wallace, Noelle Guo

03 October 2022



Unearthing nature-related investments in innovative areas is challenging but could boost Jupiter's Green Investment Trust, its managers tell **Genevieve Redgrave**

Unearthing investable opportunities in natural capital remains a challenge, according to the managers of an environment-themed investment trust, despite the strategy's changed focus to target smaller companies.

"It's still a challenge," Jon Wallace, portfolio manager of the London-listed Jupiter Green Investment Trust tells Environmental Finance. "If we think about meaningful positive and significant steps in terms of generating real change, it [natural capital investing] still feels very early stage compared to the significance of the challenge," he says.

The fund, which has £55 million (\$64 million) in assets, posted a negative return of 21.5%



'Aussie carbon credits heading for \$US100'



Larry Schlesinger
Reporter

May 1, 2022 - 4:00pm



Veteran fund manager Tim Samway has tipped Australian carbon credits to surge to US\$100 (\$14) a unit as his cattle station and carbon farming platform Packhorse Pastoral Company acquired its third property and kicked off a \$62 million equity-raising to fund further acquisitions.

"Everything that I have read, and in meetings I have held with institutional investors, tells me the carbon price will be \$US100 a unit in years to come, not \$US30." Mr Samway, chairman of \$10 billion fund manager Hyperion Asset Management, told *The Australian Financial Review*.



Hyperion Asset Management chairman Tim Samway sees cattle and carbon farming as a winning combination. Chris Effen

His comments follow the spot price of ACCUs, which nearly tripled last year to a high of \$57, [crashing 38 per cent in March to just \\$29](#) after the federal government relaxed the rules governing its Emissions Reduction Fund, which allowed participants to flood the market with carbon offsets sought by corporate emitters.

But platform plays seem to be proceeding...

Xpansiv raises a further USD 400M (Aug 2022)

- Global carbon trading / environmental commodities platform (grew out of the H2Ox water trading platform)
- Busily making acquisitions of brokerages and other platform providers.

Aust Govt Carbon Exchange

- Ran RFP process which (according to public website) is now in evaluation stage. Public timeline anticipates contract finalisation in late 2022.

— Street Talk

Xpansiv investors green light Blackstone deal; BP in equity top-up

Anthony Macdonald, Sarah Thompson and Kanika Sood

Jul 28, 2022 - 1:00pm

Save Share

Xpansiv's investors have waved through its [US\\$400 million funding from Blackstone](#), which would allow the PE firm to become a sizeable shareholder down the line.

Equity investors and a few tranches of convertible note holders had until Wednesday to mail back approval forms on Blackstone's entry.

The carbon trading platform is understood to have rounded up the investor numbers to take the six-year term loan from Blackstone, to come good on its US\$300 million acquisition of commodity markets registry provider APX.



Xpansiv CEO Joe Madden's got its investors approval on the Blackstone deal. Peter DaSilva

A personal view

Biodiversity markets feels a lot like (early) 2007 in the carbon markets ...

Lots of talk, and active policy development but in most areas hard to actually do deals at scale.

- Having raised money, it has to be sensibly deployed

Issues around definitions, multiple competing standards, availability of data, transaction costs. Multiple groups running at all these problems, but still not clear

Issues of credibility

- ASIC and SEC both active in the “ESG Claims” space.

Issues of legitimacy

- Political pushback

Issues around how to “co-optimize” and how to “stack”.

Some parts of “ESG” markets more generally seem to be slowing as economic issues become more pressing

‘All ESG funds are not the same’

The focus by regulators on allegations of greenwashing on Wall Street is no surprise given that Gary Gensler, the SEC chairman, has made regulating ESG investing a top priority. He has pushed for a rule that would require Wall Street investment firms to give investors more information about how they are carrying out any ESG strategy. Another SEC proposal would require any fund that calls itself “socially responsible”, “sustainable”, or “green” to invest 80 per cent of its assets in ways that are consistent with that strategy.