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Demand for low-quality offsets by major companies undermines climate integrity of the voluntary carbon market

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KEY FINDINGS

We find that companies have predominantly sourced low-quality, cheap offsets:

- 87% carry a high risk of not providing real and additional emissions reductions
- Most offsets (79%) originate from REDD+ and renewable energy projects
- 16 of the 20 companies obtained the greatest share of their credits from the cheapest kinds of offset projects

Most offsets do not meet industry standards regarding age and country of implementation

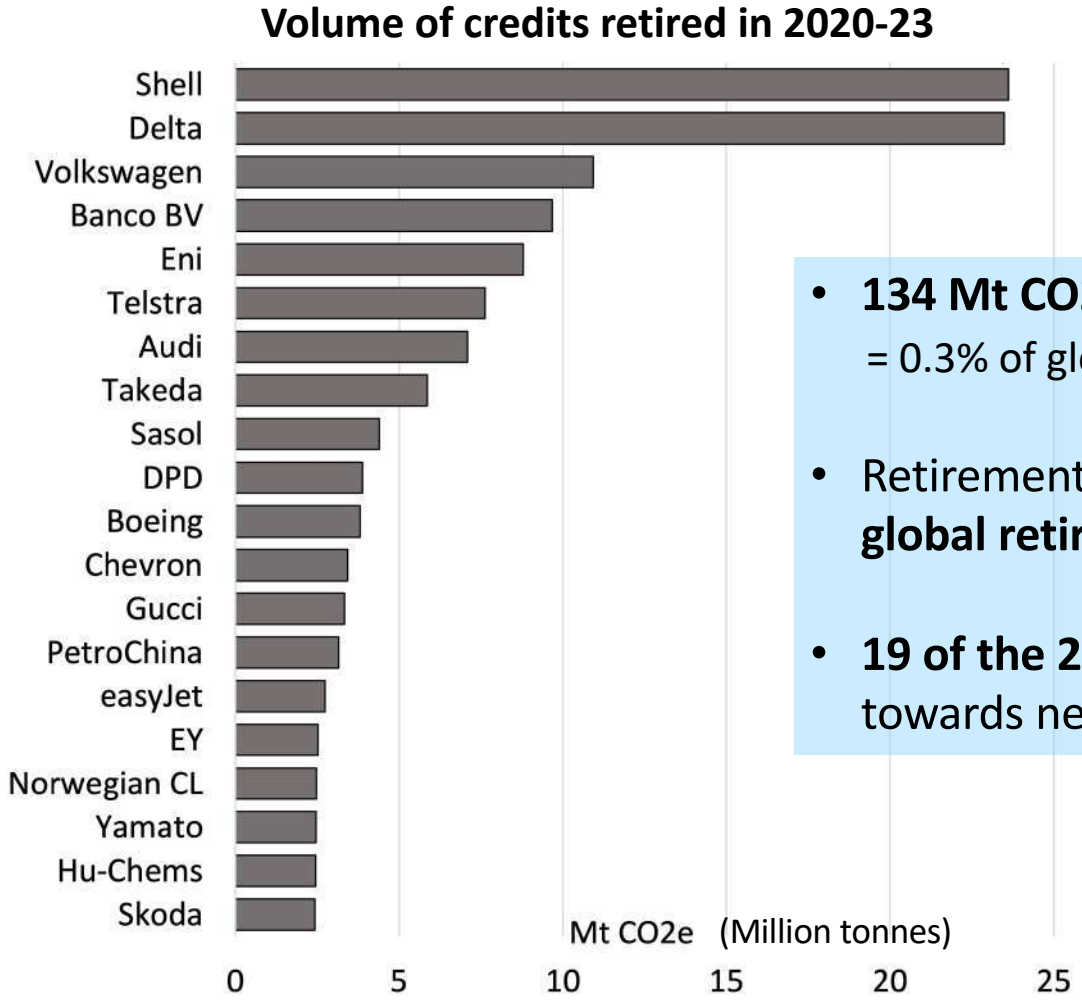
- 75% of credits come from old projects that do not meet the post-2016 CORSIA standard
- Only 38% of renewables credits come from countries meeting additionality rules set by GS and VCS

We also find that only 2.5% of offsets support carbon removal activities

Findings provide further evidence that the VCM is not supporting effective climate mitigation

METHOD & DATA SOURCES

20 COMPANIES EXAMINED



- **134 Mt CO2e** retired over 2020-23
  = 0.3% of global CO2 emissions in 2022
- Retirements from 20 companies **represent 21% of all global retirements** on VCS, GS and CDM over 2020-23
- **19 of the 20 companies** use offsets to claim progress towards net-zero

METHOD & DATA SOURCES

RESEARCH DESIGN AND QUALITY EVALUATION FRAMEWORK (SIMPLIFIED)

Mitigation approach

Determine focus of mitigation activities supported by offset retirements

Avoidance | Removals

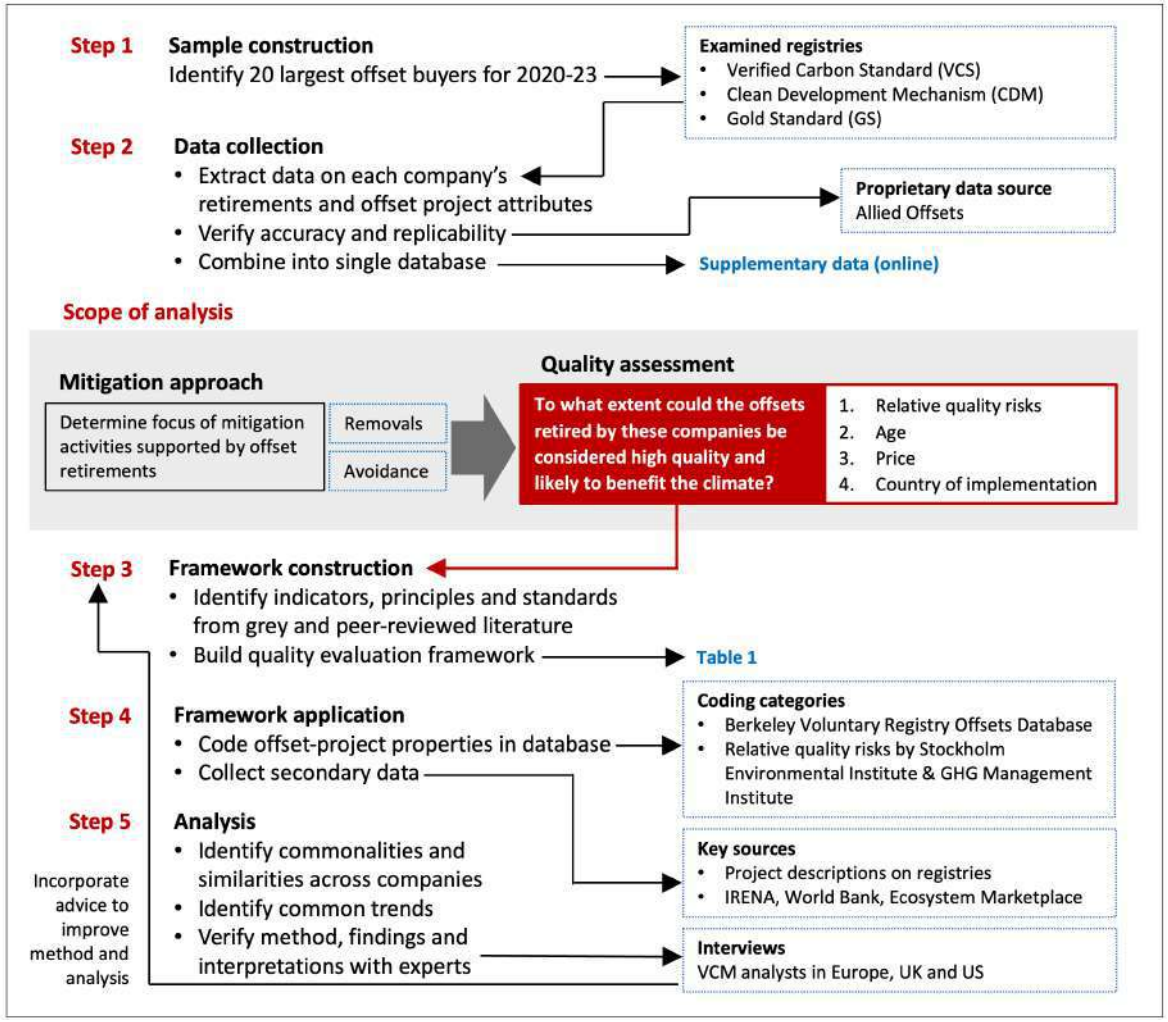
Quality assessment

To what extent could the offsets retired by these companies be considered high quality and likely to benefit the climate?

		References
Relative quality risks	Some projects carry higher risk of overestimating GHG reduction or of lacking additionality	SEI 2019
Age	Investments should support new projects and recent actions	SBTI, 2024
Price	Low price usually reflects low quality	World Bank 2023
Country of implementation (renewables)	Projects should target countries with high obstacles to renewable energy	Lo et al 2023

METHOD & DATA SOURCES

RESEARCH DESIGN (DETAILED)

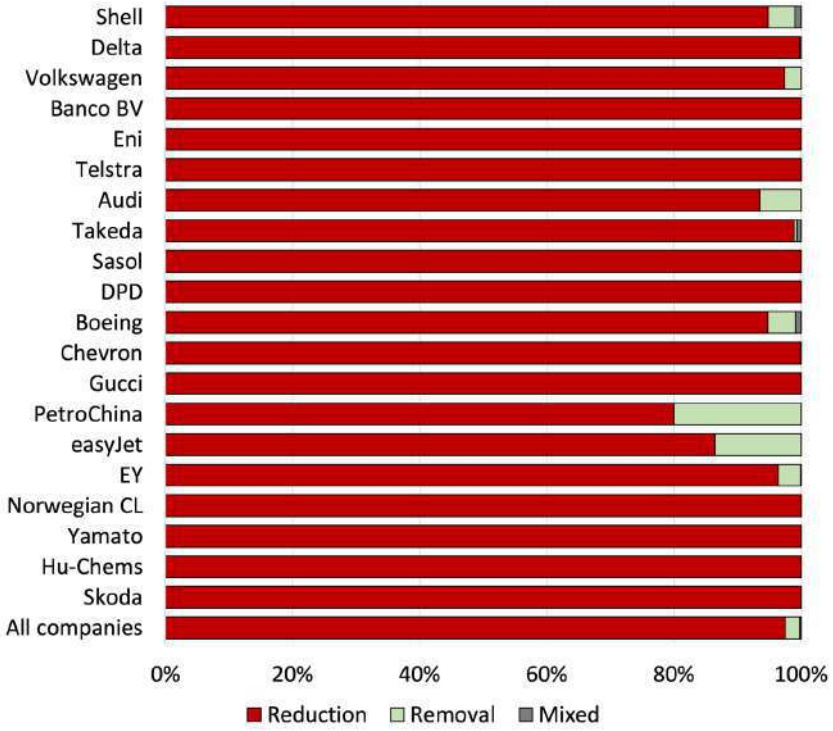


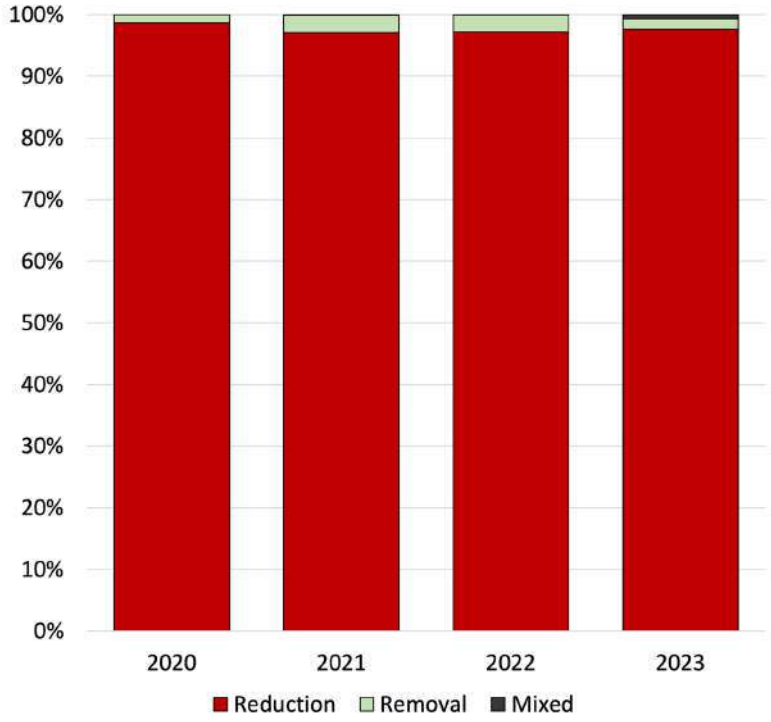
Key points

- Our database was verified for accuracy with third-party data (Allied Offsets)
- To objectively evaluate quality and climate impact, we used indicators based on rules, standards and principles advocated on the VCM
- We verified our method and findings with expert analysts working in the VCM

RESULTS

AVOIDANCE VS REMOVAL (RELATIVE SHARE)

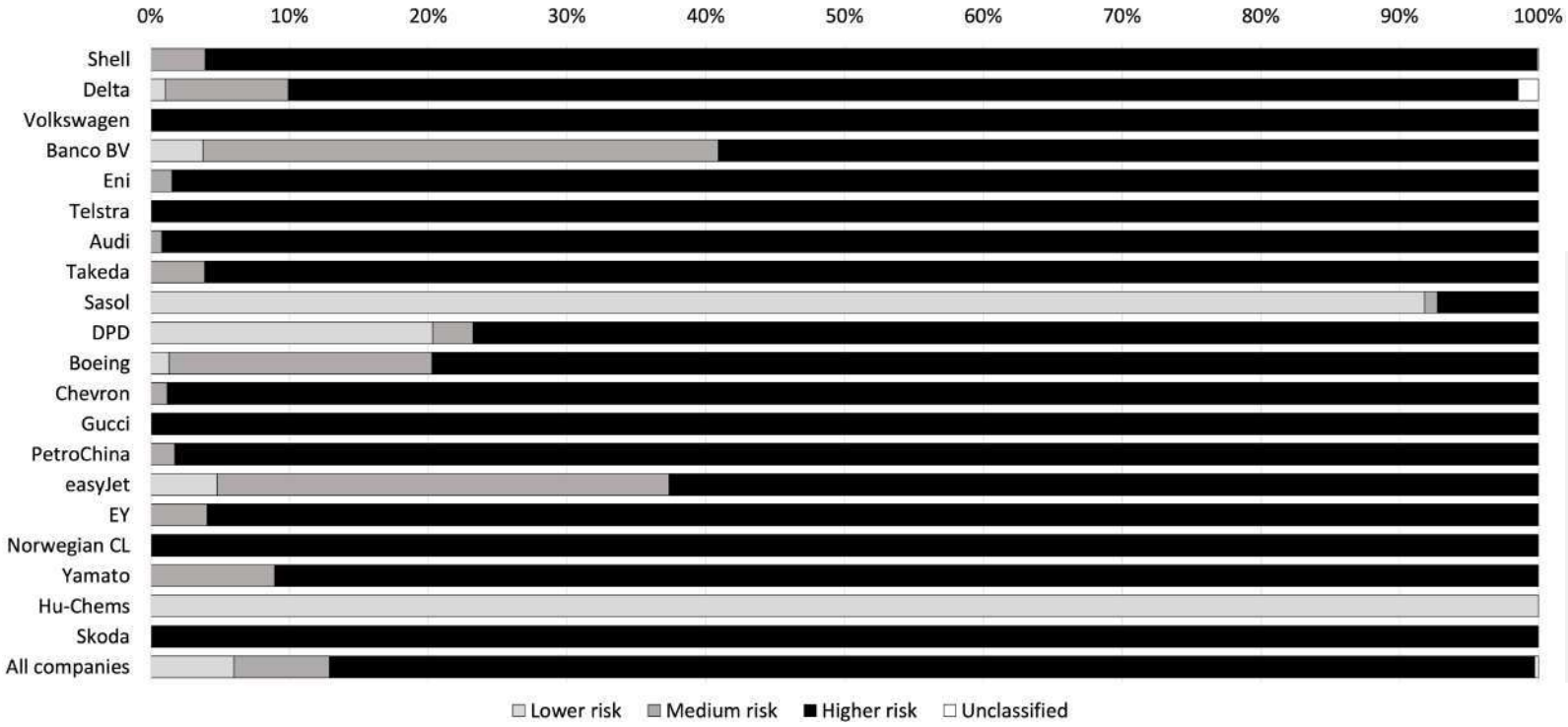




- Avoidance credits make up 97% of all retirements
- The Oxford Principles has called for a shift away from avoidance offsets to removals
- Yet we find no evidence of a marked shift towards removal credits

RESULTS

DOMINATION OF HIGH-RISK PROJECTS



Explanation
This figure shows the share of credits from offset project types with different quality risks.

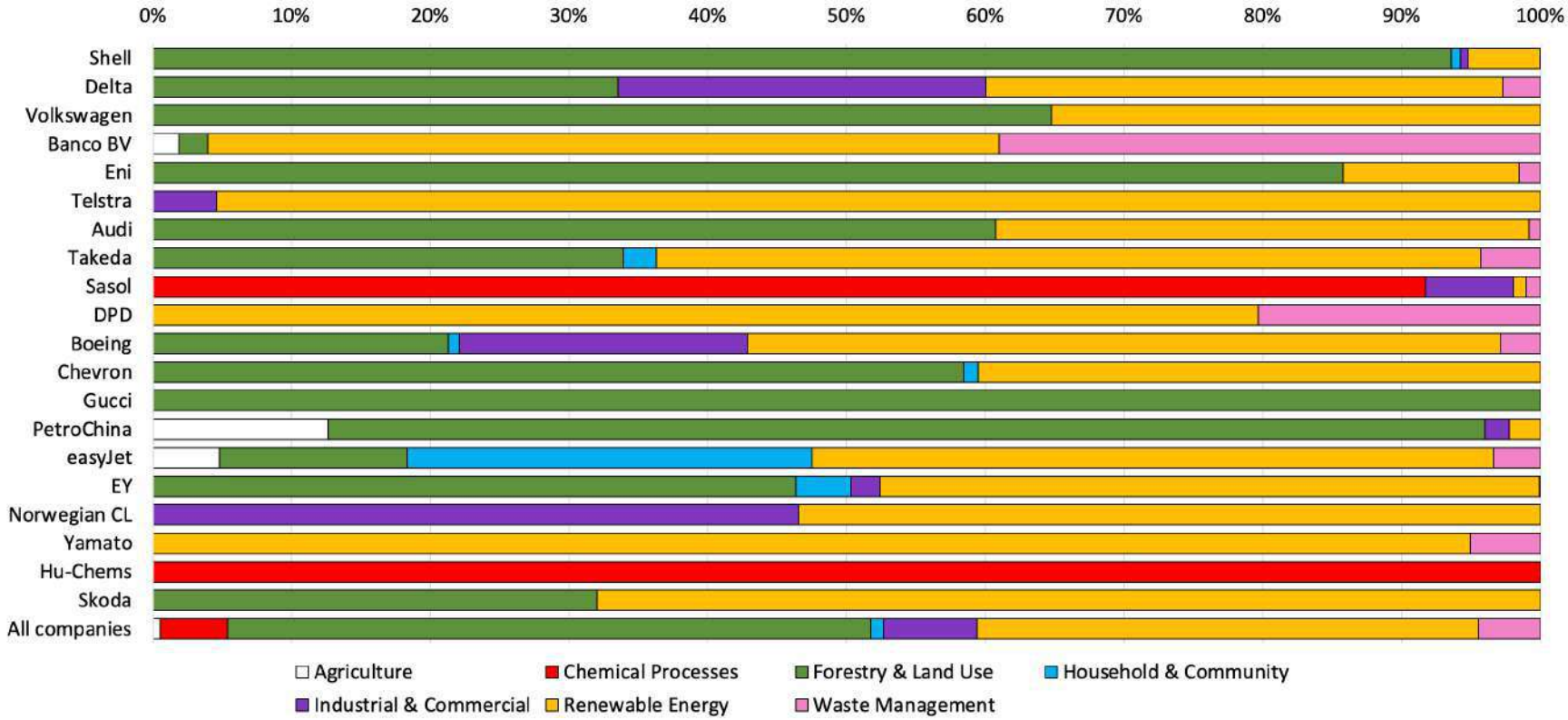
Projects were classified into different risk categories using a framework from the "Carbon Offset Guide" by the Stockholm Environmental Institute & GHG Management Institute (2019)

Companies have overwhelmingly sourced high-risk offsets

- 87% of credits fall into a high-risk category, meaning that they have a high likelihood of overestimating emissions reductions or lacking additionality
- Conversely, credits with a low-risk profile make up only 6% of all retirements.

RESULTS

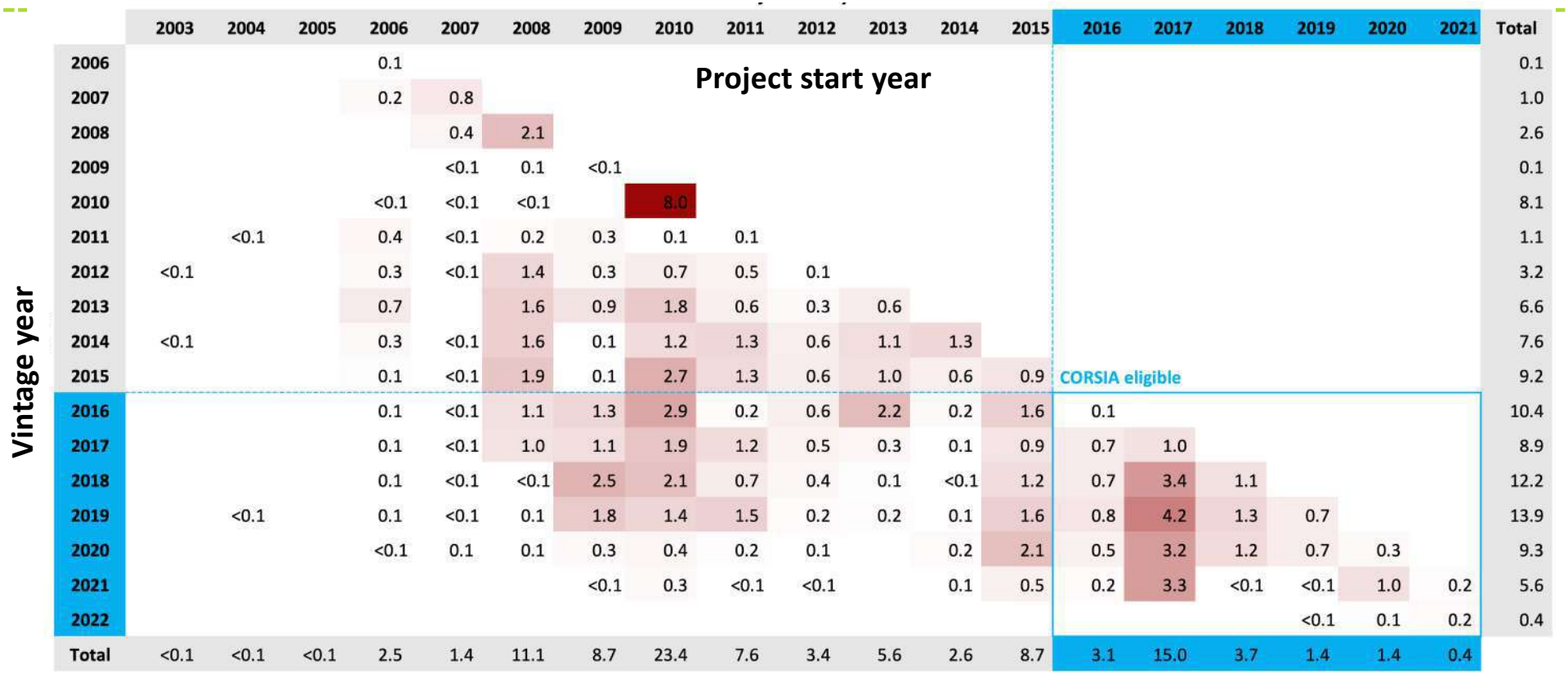
DOMINATION OF FORESTRY (REDD+) AND RENEWABLE ENERGY



- **REDD+,** classified as high-risk, is **most common offset**, making up **43% of all credits** retired
- **Renewable energy** is the next most sourced offset type, **comprising 36%**
  Most renewables projects are large-scale (>15 MWe), classified by aforementioned framework as high risk

RESULTS

AGE OF OFFSETS (PROJECT START & VINTAGE YEARS)



Project start year

Vintage year

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
2006				0.1																0.1
2007				0.2	0.8															1.0
2008					0.4	2.1														2.6
2009					<0.1	0.1	<0.1													0.1
2010				<0.1	<0.1	<0.1		8.0												8.1
2011		<0.1		0.4	<0.1	0.2	0.3	0.1	0.1											1.1
2012	<0.1			0.3	<0.1	1.4	0.3	0.7	0.5	0.1										3.2
2013				0.7		1.6	0.9	1.8	0.6	0.3	0.6									6.6
2014	<0.1			0.3	<0.1	1.6	0.1	1.2	1.3	0.6	1.1	1.3								7.6
2015				0.1	<0.1	1.9	0.1	2.7	1.3	0.6	1.0	0.6	0.9	CORSIA eligible						9.2
2016				0.1	<0.1	1.1	1.3	2.9	0.2	0.6	2.2	0.2	1.6	0.1						10.4
2017				0.1	<0.1	1.0	1.1	1.9	1.2	0.5	0.3	0.1	0.9	0.7	1.0					8.9
2018				0.1	<0.1	<0.1	2.5	2.1	0.7	0.4	0.1	<0.1	1.2	0.7	3.4	1.1				12.2
2019		<0.1		0.1	<0.1	0.1	1.8	1.4	1.5	0.2	0.2	0.1	1.6	0.8	4.2	1.3	0.7			13.9
2020				<0.1	0.1	0.1	0.3	0.4	0.2	0.1		0.2	2.1	0.5	3.2	1.2	0.7	0.3		9.3
2021							<0.1	0.3	<0.1	<0.1		0.1	0.5	0.2	3.3	<0.1	<0.1	1.0	0.2	5.6
2022																	<0.1	0.1	0.2	0.4
Total	<0.1	<0.1	<0.1	2.5	1.4	11.1	8.7	23.4	7.6	3.4	5.6	2.6	8.7	3.1	15.0	3.7	1.4	1.4	0.4	

- Though many companies have actively sourced recent vintages, **most offsets come from old projects that started a decade or more ago**
  As such, 75% of credits would not qualify for UN-CORSIA standard (post-2016)

RESULTS

AGE OF OFFSETS (PROJECT START & VINTAGE YEARS)

- The Paris Agreement has established stricter rules than CORSIA for crediting periods. Offsets traded under its Article 6.4 mechanism (designed to replace the CDM) must come from mitigation activities that started in 2021 or later. SBTI also advocates this standard.

- We do not expect the twenty companies in our dataset to have adhered to this rule during the period of analysis (2020-23). Yet it is notable that **only 0.4% of offsets** come from **projects with post-2021 start years**

- This further illustrates how the offsets purchased by the twenty companies fall considerably short of contemporary quality standards.

RESULTS

BUYING BEHAVIOUR

	Q1 Lowest	Q2 Mid-low	Q3 Average	Q4 Mid-high	Q5 Highest
Shell	5.7		18.0	20.1	56.2
Delta	41.3	22.5	34.0	1.5	0.7
Volkswagen	35.2		21.8	16.4	26.6
Banco BV	57.0		41.1		1.9
Eni	12.7		11.4	66.5	9.4
Telstra	100.0				<0.1
Audi	38.4		34.9	0.6	26.1
Takeda	59.4		8.6	30.9	1.1
Sasol	44.3	54.6	1.0		
DPD	79.7		20.3		
Boeing	59.5	15.5	5.7	3.5	15.7
Chevron	40.5		28.1	31.3	0.1
Gucci			27.0	73.0	
PetroChina	2.3	1.7	24.5	11.3	60.2
easyJet	49.1		32.6		18.3
EY	49.6		15.2	25.2	10.0
Norwegian CL	58.5	41.5		<0.1	<0.1
Yamato	95.0		5.0		
Hu-Chems		100.0			
Skoda	68.0		8.2	12.5	11.2
All companies	38.9	8.8	20.8	14.6	17.0
No. of companies sourcing their largest share of credits from that quintile	**14**	**2**	**0**	**2**	**2**

The preference for low-quality credits can be explained by their price

16 companies sourced the largest share of credits from the two lowest price categories, which traded for $1-5 per tonne CO2e over 2020-23

- Renewable energy
- Waste management
- Chemical processes

The preference for cheap credits is persistent over 2020-23

Explanation
Because companies do not disclose how much they actually paid for offsets, we used yearly estimations of average prices for different kinds of offset projects (renewable energy, forestry [avoidance] etc.) by Ecosystem Marketplace. We organized the average prices from nine kinds of projects into 5 price categories (quintiles), from lowest to highest, and then determined what share of credits from each company fell into each.

RESULTS

COUNTRY OF IMPLEMENTATION (RENEWABLES)

Test 1

Only **0.2% of offsets** come from projects implemented in a least developed country

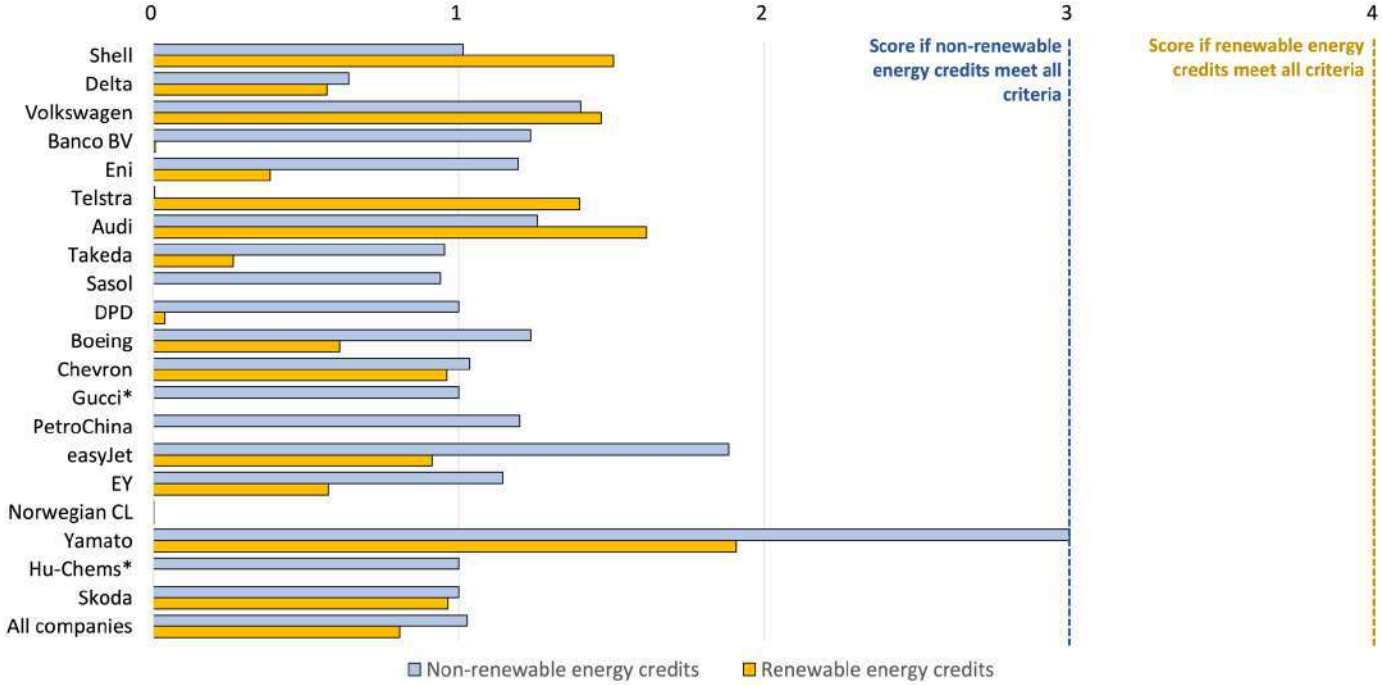
Test 2

Only 38% of offsets come from projects implemented in a low-income or lower-middle income country where the penetration rate for the renewable energy technology was <5%

	Share of RE credits (%)	Tests with additionality criteria: Test 1 Least Developed Country (LDC) status during 2005-21?	Test 2: Years with status as Low-Income Country (LIC) or Lower-Middle Income Country (LMIC) during 2005-2021 (2005–2021)	Test 2: Share of RE credits (%) in years with LIC/LMIC status and <5% penetration for respective RE technology
Brazil	14.6			0.0
Bulgaria	0.4			0.0
Chile	0.2			0.0
China	15.6			14.2
Colombia	2.9			0.0
Dominican R.	1.1			0.0
El Salvador	0.7			0.0
Guatemala	0.4			100.0
India	54.2			58.0
Indonesia	1.1			58.0
Jamaica	0.2			0.0
Mauritania	0.0	✓		0.0
Mauritius	0.0			0.0
Namibia	0.1			0.0
Nicaragua	1.4			4.9
Pakistan	0.3			100.0
Philippines	0.2			100.0
S. Korea	0.0			0.0
S. Africa	0.1			0.0
Taiwan	0.4			0.0
Thailand	0.7			85.7
Turkey	4.5			0.0
Uganda	0.2	✓		0.0
United States	0.0			0.0
Uruguay	0.1			0.0
Vietnam	0.7			0.0
Total credits (%)	**100.0**	**0.2**		**37.8**

RESULTS

SUMMARY OF QUALITY INDICATORS



Applying all indicators at once shows that few credits pass multiple quality indicators

Non-renewable energy offsets

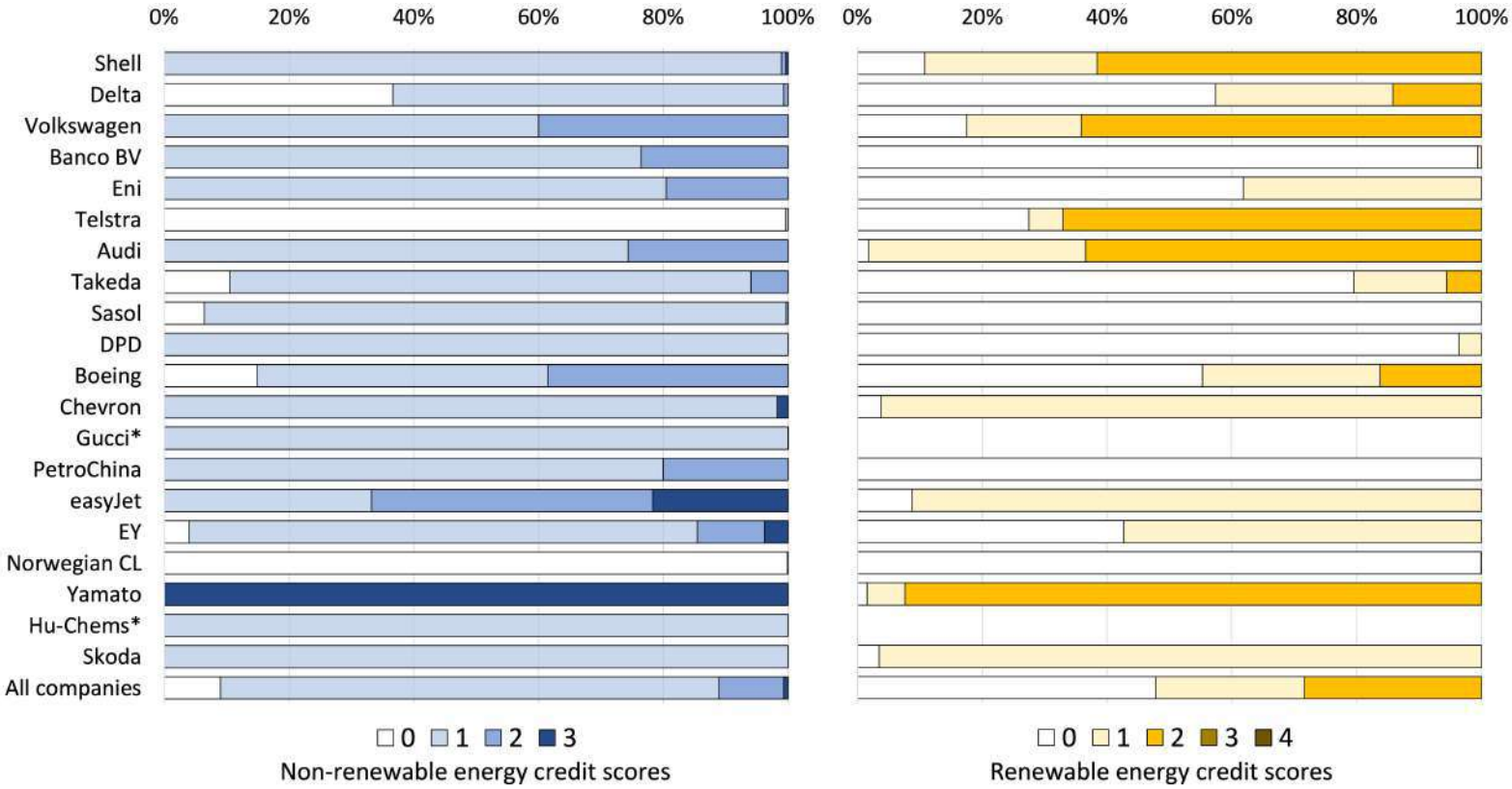
- Average score of 1.03 out of 3 for all companies combined
- 9% of these offsets meet none of the three indicators
- 79% meet only one indicator

Renewable energy offsets

- Average score for all companies is 0.81 out of 4.
- This indicates even lower quality than non-renewable energy offsets
- Around half (48%) of renewables credits do not meet any of the four indicators
- One quarter (24%) meet only one indicator

RESULTS

SUMMARY OF QUALITY INDICATORS



Renewable energy credits are particularly low quality

- 48% fail to meet any of the four indicators
- 24% meet only one

- Scores for most companies are concentrated between 0 and 2
- This means that most of their offsets meet only half or less of the quality indicators