Comment

Supplementary information to:

Carbon credits are failing to help with climate change — here's why

A Comment published in *Nature* **646**, 543–546 (2025)
https://doi.org/10.1038/d41586-025-03313-z

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This Supplementary information comprises:

1. Supplementary Figure S1
2. Supplementary Table S1

Offsets impede decarbonisation by weakening carbon pricing schemes

Supplementary Materials

Figure S1. Carbon price (2025 US$), coverage of global emissions and offset use in carbon pricing schemes*

* Carbon prices current as at April 2025, in US$. Relative coverage of global emissions by scheme reflected in size of circles. Light green area shows carbon prices aligned with keeping warming well below 2°C, as recommended by High-Level Commission on Carbon Prices. CT = carbon tax. TIER = Technology Innovation and Emissions Reduction. OBPS = Output-Based Pricing System. PSS = Performance Standards System. EPS = Emissions Performance Standards. ETS = Emissions Trading Scheme. CCA = Climate Commitment Act. CaT = Cap-and-Trade. RGGI = Regional Greenhouse Gas Initiative. CPS = Carbon Price Support. SGM = Safeguard Mechanism. Note: Switzerland CT has a mandatory offset requirement on fuel producers and importers that operates in addition to (not as a substitute for) the CT liability.

Sources: World Bank (2025) 'State and Trends of Carbon Pricing Dashboard'. https://carbonpricingdashboard.worldbank.org/; High-Level Commission on Carbon Prices (2017) Report of the High-Level Commission on Carbon Prices. World Bank, Washington, DC.

Table S1. Carbon price (2025 US$), coverage of global emissions and offset use in carbon pricing schemes*

Carbon Pricing Scheme	2025 carbon price (US$)	Coverage of global emissions (%)	Allows offsets
Uruguay CT	$158.76	0.00	No
Sweden CT	$144.62	0.04	No
Liechtenstein CT	$136.04	0.00	No
Switzerland CT**	$136.04	0.03	No
Norway CT	$133.92	0.04	No
Denmark CT	$108.43	0.03	No
Netherlands CT	$94.83	0.00	No
Portugal CT	$72.70	0.04	No
EU ETS	$70.37	2.48	No
Ireland CT	$68.50	0.03	No
Finland CT	$66.89	0.03	No
Alberta TIER	$66.21	0.29	Yes
BC OBPS	$66.21	0.03	Yes
Canada federal OBPS	$66.21	0.04	Yes
New Brunswick OBPS	$66.21	0.01	No
Newfoundland/Labrador PSS	$66.21	0.01	No
Nova Scotia OBPS	$66.21	0.01	No
Ontario EPS	$66.21	0.07	No
Switzerland ETS	$64.75	0.01	No
Iceland CT	$60.06	0.00	No
Luxembourg CT	$58.55	0.01	No
UK ETS	$57.23	0.19	No
Washington CCA	$50.00	0.12	Yes
Austria ETS	$48.55	0.05	No
Germany ETS	$48.55	0.50	No
France CT	$48.11	0.30	No
Quebec CaT	$41.54	0.11	Yes
Slovenia CT	$33.28	0.01	No
New Zealand ETS	$32.01	0.07	No
California CaT	$29.27	0.56	Yes
Estonia CT	$26.97	0.00	No
Montenegro ETS	$25.89	0.00	No
RGGI	$23.32	0.17	Yes
UK CPS	$23.24	0.08	No
Australia SGM	$21.82	0.28	Yes
Singapore CT	$18.62	0.10	Yes
Latvia CT	$16.18	0.00	No
Spain CT	$16.18	0.01	No
Albania CT	$13.69	0.01	No
South Africa CT	$12.85	0.81	Yes

Beijing pilot ETS	$12.15	0.05	Yes
China national ETS	$11.76	15.29	Yes
Shanghai pilot ETS	$10.80	0.10	Yes
Colombia CT	$6.54	0.08	Yes
Shenzhen pilot ETS	$6.53	0.04	Yes
Korea ETS	$6.45	0.98	Yes
Chongqing pilot ETS	$5.51	0.06	Yes
Guangdong pilot ETS	$5.41	0.18	Yes
Argentina CT	$5.33	0.26	No
Tianjin pilot ETS	$5.30	0.07	Yes
Hubei pilot ETS	$5.27	0.14	Yes
Chile CT	$5.00	0.13	Yes
Fujian pilot ETS	$4.73	0.10	Yes
Tokyo CaT	$4.01	0.02	Yes
Mexico CT	$3.94	0.17	Yes
Japan CT	$1.93	1.57	No
Israel CT	$1.51	0.12	No
Saitama ETS	$0.96	0.01	Yes
Kazakhstan ETS	$0.93	0.26	Yes
Ukraine CT	$0.73	0.13	No
Indonesia ETS	$0.72	0.54	Yes
Poland CT	$0.10	0.16	No

* Carbon prices current as at April 2025, in US$. CT = carbon tax. TIER = Technology Innovation and Emissions Reduction. OBPS = Output-Based Pricing System. PSS = Performance Standards System. EPS = Emissions Performance Standards. ETS = Emissions Trading Scheme. CCA = Climate Commitment Act. CaT = Cap-and-Trade. RGGI = Regional Greenhouse Gas Initiative. CPS = Carbon Price Support. SGM = Safeguard Mechanism.

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