METHANE ALERT AND RESPONSE SYSTEM

SNAPSHOT: TOP 50 EMITTERS, COUNTRY RESPONSES AND MITIGATION

April 2026 Update

UNEP's Methane Alert and Response System (MARS) integrates data from more than 30 satellites to alert countries of major methane emissions and enable action.

This snapshot provides information on mitigation cases enabled and confirmed via MARS, country response rates to alerts, and the world's 50 largest methane sources across sectors, as detected by satellites.

MITIGATION

To date, MARS has enabled and confirmed mitigation of 41 major methane sources. Each mitigation involved issuing a MARS notification, evaluating the response for technical accuracy and confirming through subsequent satellite data that no further emissions have been detected.

Together, the sources mitigated following MARS notifications are estimated to have released 1,200,000 tonnes of methane. This is comparable in climate impact to nearly 24 million gasoline-powered cars driven for one year.

Figure 1 shows where the mitigation cases have occurred, alongside information on each country's overall responsiveness to MARS alerts and whether a country has designated a focal point. The vast majority of mitigation occurs in countries with focal points who actively direct information to where it can be used to enable action.

Further information on each mitigation case is available here.

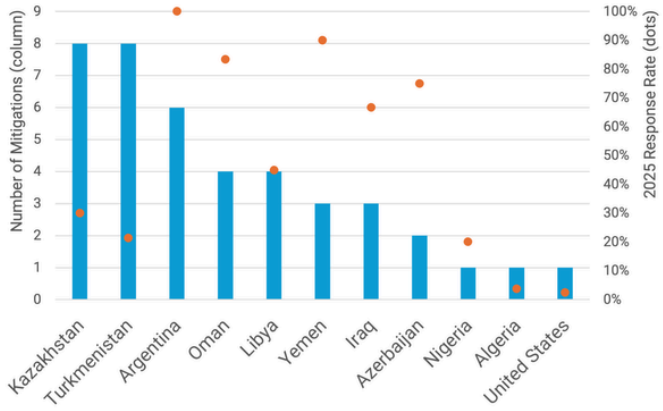


Figure 1
Number of confirmed mitigated sources by country, alongside country response rate for all MARS notified sources

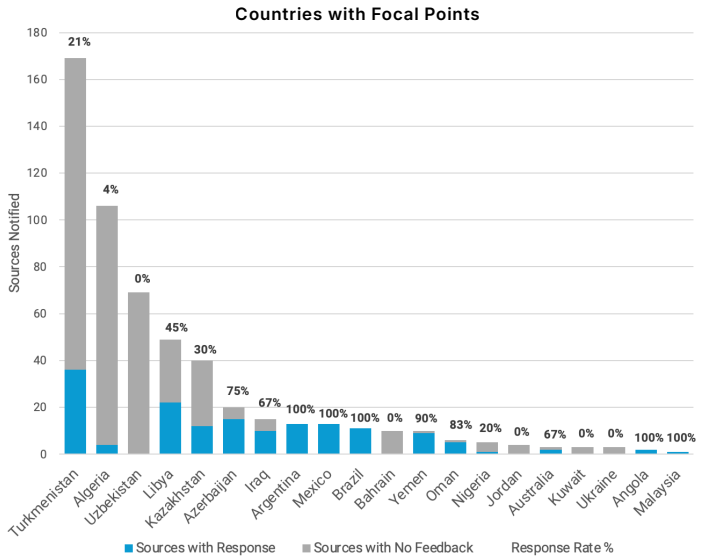
COUNTRY RESPONSES

Recipients of MARS alerts are asked to respond to UNEP with emission status, the underlying cause of emissions and any mitigation action taken or planned.

Figure 2 depicts the total number of sources notified by country, as well as the fraction of sources for which a response was received, across countries which have or have not designated a MARS focal point.

Response is a critical step towards methane mitigation, as it requires the investigation of a MARS-detected emission source. Responses may be submitted by governments or operators.

Country response rates vary, with some countries exceeding 80 per cent, demonstrating strong engagement and effective follow-through. Others—including countries with many emission sources—are making progress as they scale their response capacity. Countries that have designated a MARS focal point are linked to higher response rates.



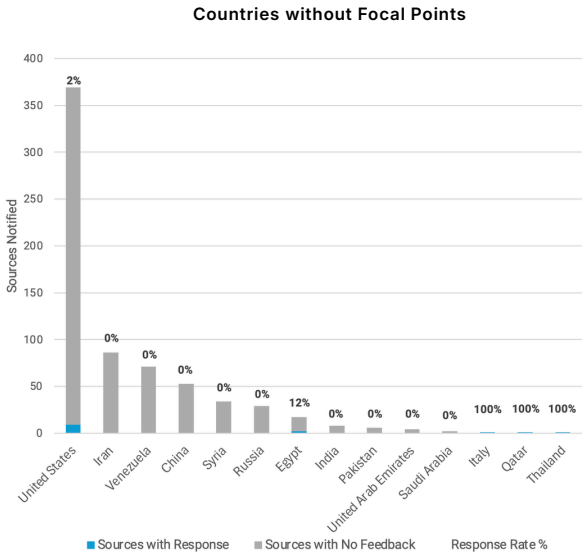


Figure 2
Response rate by country (1 January – 31 December 2025)

TOP 50 METHANE SOURCES

The map and table below present the 50 largest methane emission sources detected via satellite, based on a six-month rolling period to reflect changes over time. These are significant emitters across the oil and gas, coal, and waste sectors that emit either continuously or frequently.

Satellites detect only the largest methane emissions. While the top 50 sources identified here reflect a small share of total global emissions, they represent priorities for mitigation.

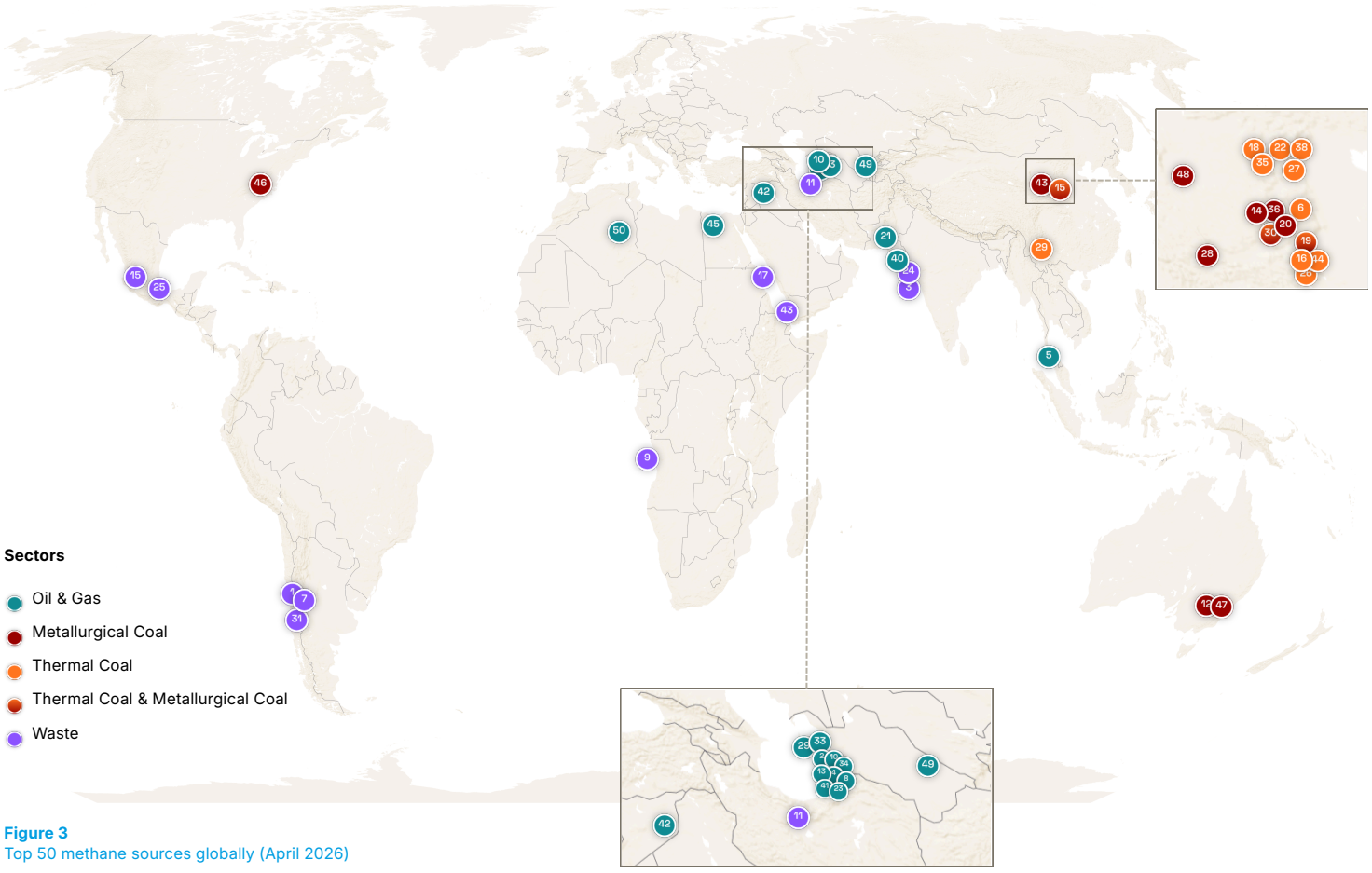


Figure 3
Top 50 methane sources globally (April 2026)

Table 1
List of top 50 methane sources

#	Country	Sector	Potential Source Type	Source ID	Coordinates	Feedback Received	Estimated Annual Emissions (tonnes CH_4)
1	Chile	Waste	Landfill	CHL_S_001	-32.95405, -70.79594	—	102,667
2	Turkmenistan	Oil and gas	Oil and gas facility (generic)	TKM_S_047	38.64869, 54.28269	N	86,748
3	India	Waste	Landfill	IND_S_042	19.12256, 72.95102	—	67,802
4	Turkmenistan	Oil and gas	Gas disposal facility	TKM_S_022	38.33075, 54.02815	Y	65,987
5	Thailand	Oil and gas	Production offshore	THA_S_008	7.49474, 102.61433	N	49,669
6	China	Thermal coal	Venting shaft	CHN_S_088	36.23247, 112.94554	—	47,917
7	Chile	Waste	Landfill	CHL_S_002	-33.69123, -70.79734	—	43,286
8	Turkmenistan	Oil and gas	Flare	TKM_S_024	37.90823, 53.89861	Y	42,580
9	Angola	Waste	Landfill	AGO_S_007	-8.8426, 13.36049	—	41,697
10	Turkmenistan	Oil and gas	Abandoned wells	TKM_S_018	38.85321, 54.23678	Y	41,456
11	Iran	Waste	Landfill	IRN_S_052	35.45736, 51.33346	—	40,471
12	Australia	Metallurgical coal	Venting shaft	AUS_S_014	-34.18144, 150.72	—	40,208
13	Turkmenistan	Oil and gas	Flare	TKM_S_026	37.92912, 53.92428	Y	40,095
14	China	Metallurgical coal	Venting shaft	CHN_S_072	36.41495, 112.9372	—	38,631
15	Mexico	Waste	Landfill	MEX_S_074	20.91518, -103.45535	—	37,755
16	China	Thermal coal	Venting shaft	CHN_S_192	35.63986, 112.65204	—	36,879
17	Saudi Arabia	Waste	Landfill	SAU_S_011	21.65043, 39.40224	—	36,792
18	China	Thermal coal	Venting shaft	CHN_S_033	37.938, 113.02297	—	35,653
19	China	Thermal and metallurgical coal	Coal mine facility (generic)	CHN_S_182	35.99206, 112.89036	—	35,467
20	China	Metallurgical coal	Venting shaft	CHN_S_098	36.24638, 112.99023	—	33,302
21	Pakistan	Oil and gas	Gathering and boosting facilities	PAK_S_001	27.96851, 69.80955	N	32,499
22	China	Thermal coal	Venting shaft	CHN_S_131	37.96728, 113.43696	—	28,470
23	Turkmenistan	Oil and gas	Gas disposal facility	TKM_S_367	37.76777, 53.9164	N	27,096
24	India	Waste	Landfill	IND_S_017	22.98321, 72.56738	—	25,053
25	Mexico	Waste	Landfill	MEX_S_099	19.40711, -98.84907	—	24,615
26	China	Thermal coal	Coal mine facility (generic)	CHN_S_060	35.56438, 112.6019	—	24,090
27	China	Thermal coal	Venting shaft	CHN_S_103	37.84215, 113.46146	—	24,002

Sectors: Oil & Gas · Metallurgical Coal · Thermal Coal · Thermal Coal & Metallurgical Coal · Waste

Note: IMEO currently provides MARS notifications for sources detected in the oil and gas sector.

#	Country	Sector	Potential Source Type	Source ID	Coordinates	Feedback Received	Estimated Annual Emissions (tonnes CH_4)
28	China	Metallurgical coal	Coal mine facility (generic)	CHN_S_229	35.80337, 110.60152	—	22,338
29	China	Thermal coal	Venting shaft	CHN_S_830	25.69842, 104.94445	—	21,900
30	China	Thermal and metallurgical coal	Venting shaft	CHN_S_157	36.38906, 112.87599	—	21,405
31	Chile	Waste	Landfill	CHL_S_009	-36.69538, -72.16774	—	20,323
32	China	Thermal coal	Drainage station	CHN_S_532	37.89092, 113.24192	—	19,841
33	Turkmenistan	Oil and gas	Gas disposal facility	TKM_S_203	39.46577, 53.78864	N	19,769
34	Turkmenistan	Oil and gas	Gas disposal facility	TKM_S_045	38.68051, 54.31604	Y	19,644
35	China	Thermal coal	Venting shaft	CHN_S_132	37.88456, 113.37895	—	19,622
36	China	Metallurgical coal	Venting shaft	CHN_S_205	36.48175, 112.98714	—	17,537
37	China	Thermal coal	Venting shaft	CHN_S_328	36.25226, 112.88337	—	17,082
38	China	Thermal coal	Venting shaft	CHN_S_136	37.89321, 113.42197	—	16,994
39	Turkmenistan	Oil and gas	Transmission pipelines	TKM_S_029	39.46192, 53.77668	N	16,198
40	India	Oil and gas	Flare	IND_S_014	23.48031, 72.27994	N	15,804
41	Turkmenistan	Oil and gas	Oil and gas facility (generic)	TKM_S_438	38.09913, 54.02161	N	14,651
42	Syrian Arab Republic	Oil and gas	Gas disposal facility	SYR_S_015	35.0404, 40.69655	N	13,134
43	Yemen	Waste	Landfill	YEM_S_019	15.47439, 44.15514	—	11,752
44	China	Thermal coal	Venting shaft	CHN_S_195	35.60638, 112.64465	—	11,650
45	Egypt	Oil and gas	Gas disposal facility	EGY_S_055	29.78652, 28.15206	N	11,471
46	United States of America	Metallurgical coal	Venting shaft	USA_S_270	37.87696, -81.8263	—	10,792
47	Australia	Metallurgical coal	Venting shaft	AUS_S_010	-34.20724, 150.77088	—	10,774
48	China	Metallurgical coal	Venting shaft	CHN_S_387	37.37779, 110.92137	—	10,212
49	Turkmenistan	Oil and gas	Transmission pipelines	TKM_S_406	38.66006, 62.8912	Y	9,378
50	Algeria	Oil and gas	Flare	DZA_S_027	28.60143, 7.2589	Y	7,820

Sectors: Oil & Gas · Metallurgical Coal · Thermal Coal · Thermal Coal & Metallurgical Coal · Waste

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