METHANE ALERT AND RESPONSE SYSTEM

SNAPSHOT: TOP 50 EMITTERS, COUNTRY RESPONSES AND MITIGATION

May 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.

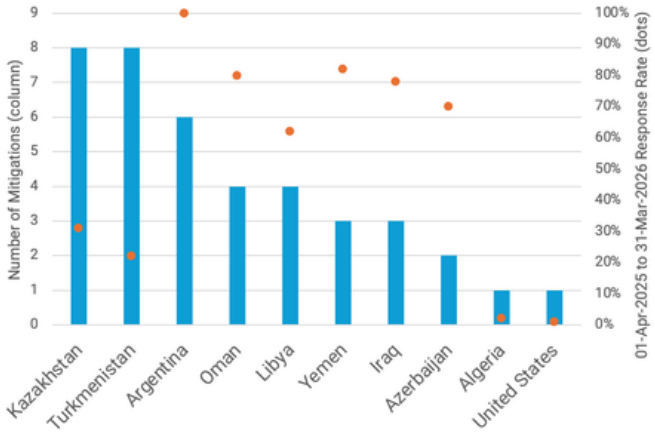

Figure 1
Number of confirmed mitigated sources by country from the launch of MARS, alongside country response rate for all MARS notified sources between 01-Apr-2025 and 31-Mar-2026

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.

Data is provided over a rolling 12-month period, with a two-month lag to allow stakeholders time to provide a robust response.

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.

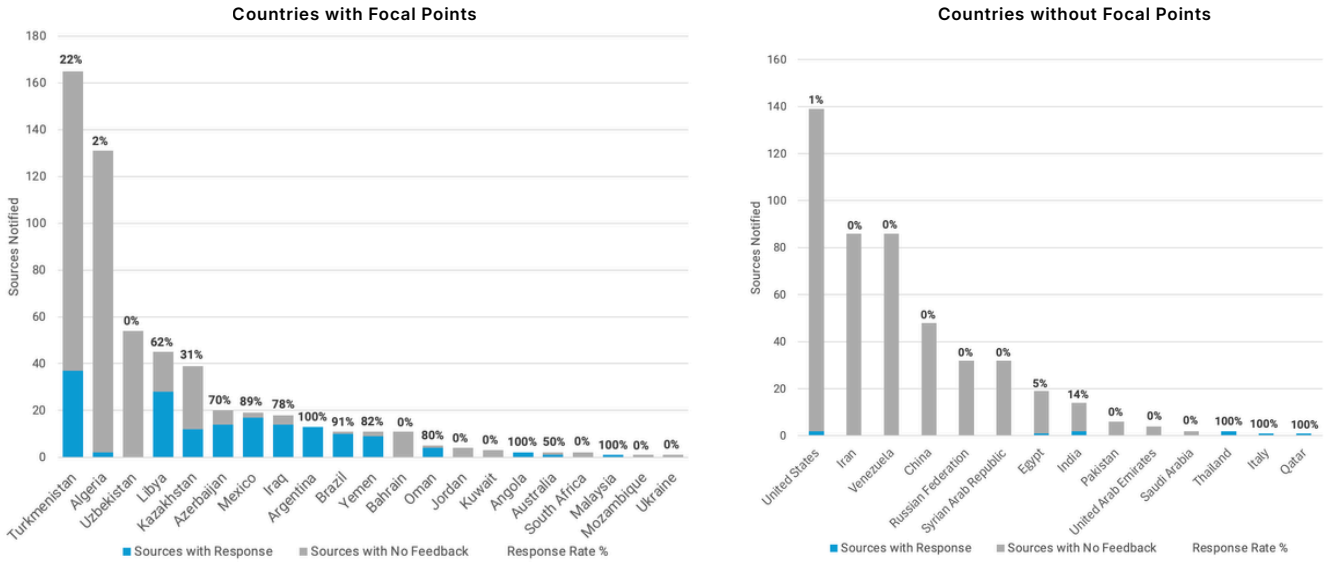

Figure 2
Response rate by country (1 April 2025 – 31 March 2026)

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.

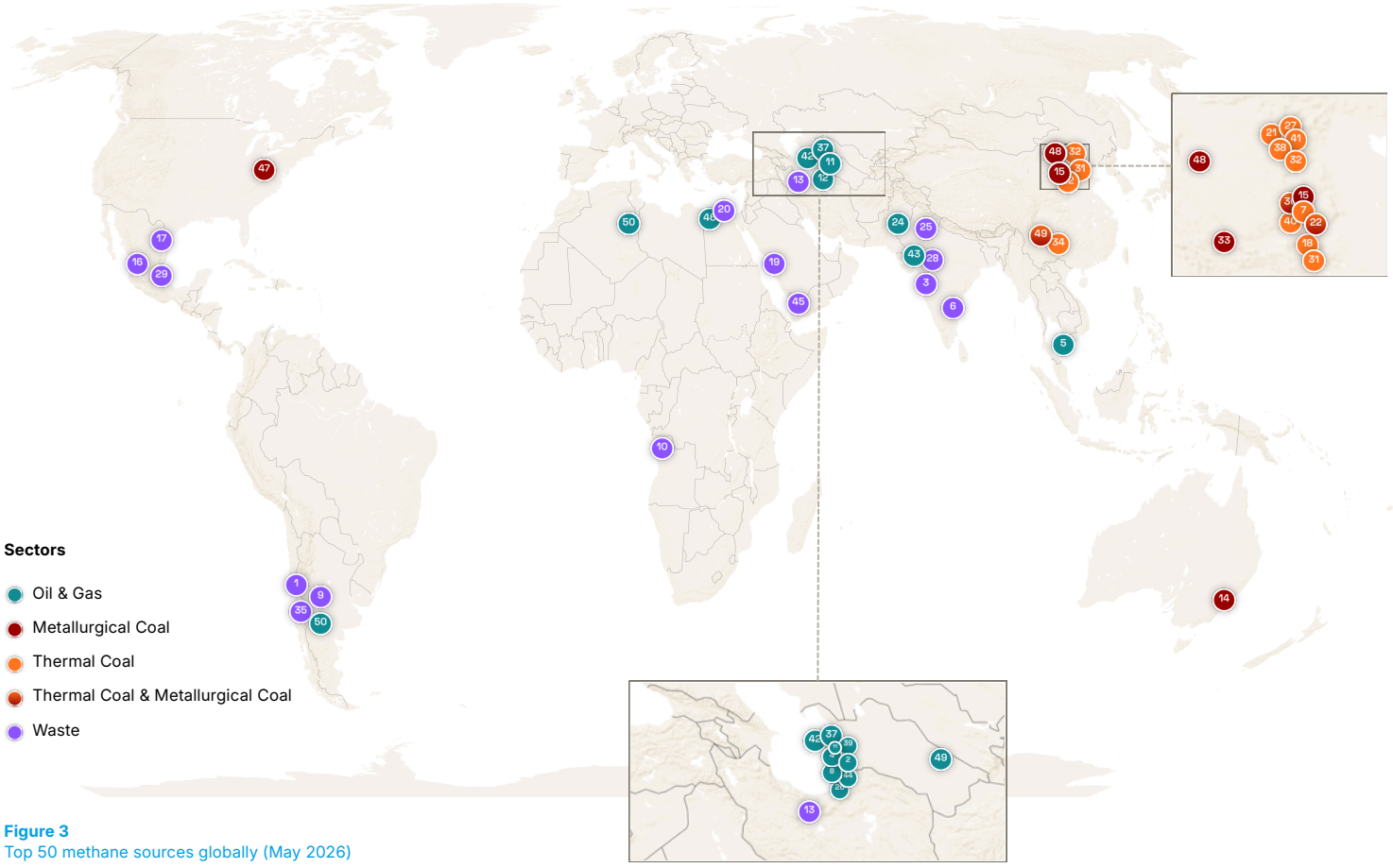

Figure 3
Top 50 methane sources globally (May 2026)

Table 1
List of top 50 methane sources (May 2026)

#		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	—	102667
2		Turkmenistan	Oil and gas	Flare	TKM_S_047	38.64869, 54.28269	N	87214
3		India	Waste	Landfill	IND_S_042	19.12256, 72.95102	—	67802
4		Turkmenistan	Oil and gas	Gas disposal facility	TKM_S_022	38.33075, 54.02815	Y	66737
5		Thailand	Oil and gas	Production offshore	THA_S_008	7.49474, 102.61433	Y	52980
6	NEW	India	Waste	Landfill	IND_S_024	13.10912, 77.65866	—	50107
7	▼1	China	Thermal coal	Venting shaft	CHN_S_088	36.23247, 112.94554	—	47917
8		Turkmenistan	Oil and gas	Flare	TKM_S_024	37.90823, 53.89861	Y	44318
9	▼2	Chile	Waste	Landfill	CHL_S_002	-33.69123, -70.79734	—	43286
10	▼1	Angola	Waste	Landfill	AGO_S_007	-8.8426, 13.36049	—	41697
11	▼1	Turkmenistan	Oil and gas	Flare	TKM_S_018	38.85321, 54.23678	Y	41456
12	▲1	Turkmenistan	Oil and gas	Flare	TKM_S_026	37.92912, 53.92428	Y	40644
13	▼2	Iran (Islamic Republic of)	Waste	Landfill	IRN_S_052	35.45736, 51.33346	—	40471
14	▼2	Australia	Metallurgical coal	Venting shaft	AUS_S_014	-34.18144, 150.72	—	40208
15	▼1	China	Metallurgical coal	Venting shaft	CHN_S_072	36.41495, 112.9372	—	38631
16	▼1	Mexico	Waste	Landfill	MEX_S_074	20.91518, -103.45535	—	37755
17	NEW	Mexico	Waste	Landfill	MEX_S_055	25.87236, -100.29812	—	37230
18	▼2	China	Thermal coal	Venting shaft	CHN_S_192	35.63986, 112.65204	—	36879
19	▼2	Saudi Arabia	Waste	Landfill	SAU_S_011	21.65043, 39.40224	—	36792
20	NEW	Egypt	Waste	Landfill	EGY_S_028	30.74885, 29.42444	—	35916
21	▼3	China	Thermal coal	Venting shaft	CHN_S_033	37.938 113.02297	—	35653
22	▼3	China	Thermal and metallurgical coal	Coal mine facility (generic)	CHN_S_182	35.99206, 112.89036	—	35467
23	▼3	China	Metallurgical coal	Venting shaft	CHN_S_098	36.24638, 112.99023	—	33302
24	▼3	Pakistan	Oil and gas	Gathering and boosting facilities	PAK_S_001	27.96851, 69.80955	N	32499
25	NEW	India	Waste	Landfill	IND_S_022	28.74244, 77.1562	—	31974
26	▼3	Turkmenistan	Oil and gas	Gas disposal facility	TKM_S_367	37.76777, 53.9164	N	30390
27	▼5	China	Thermal coal	Venting shaft	CHN_S_131	37.96728, 113.43696	—	28470

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. In May 2026, IMEO announced the launch of a pilot phase for rapid alerts in the coal and waste sectors.

#		Country	Sector	Potential Source Type	Source ID	Coordinates	Feedback Received	Estimated Annual Emissions (tonnes CH_4)
28	▼ 4	India	Waste	Landfill	IND_S_017	22.98321, 72.56738	—	25053
29	▼ 4	Mexico	Waste	Landfill	MEX_S_099	19.40711, -98.84907	—	24615
30		China	Thermal and metallurgical coal	Venting shaft	CHN_S_157	36.38906, 112.87599	—	24393
31	▼ 5	China	Thermal coal	Coal mine facility (generic)	CHN_S_060	35.56438, 112.6019	—	24090
32	▼ 5	China	Thermal coal	Venting shaft	CHN_S_103	37.84215, 113.46146	—	24002
33	▼ 5	China	Metallurgical coal	Venting shaft	CHN_S_229	35.80303, 110.60104	—	22338
34	▼ 5	China	Thermal coal	Venting shaft	CHN_S_830	25.69842, 104.94445	—	21900
35	▼ 4	Chile	Waste	Landfill	CHL_S_009	-36.69538, -72.16774	—	20323
36	▼ 4	China	Thermal coal	Drainage station	CHN_S_532	37.89092, 113.24192	—	19841
37	▼ 4	Turkmenistan	Oil and gas	Gas disposal facility	TKM_S_203	39.46577, 53.78864	N	19769
38	▼ 3	China	Thermal coal	Venting shaft	CHN_S_132	37.88456, 113.37895	—	19622
39	▼ 5	Turkmenistan	Oil and gas	Gas disposal facility	TKM_S_045	38.68051, 54.31604	Y	19359
40	▼ 3	China	Thermal coal	Venting shaft	CHN_S_328	36.25226, 112.88337	—	17082
41	▼ 3	China	Thermal coal	Venting shaft	CHN_S_136	37.89321, 113.42197	—	16994
42	▼ 3	Turkmenistan	Oil and gas	Transmission pipelines	TKM_S_029	39.46192, 53.77668	Y	16198
43	▼ 3	India	Oil and gas	Flare	IND_S_014	23.48031, 72.27994	N	15804
44	▼ 3	Turkmenistan	Oil and gas	Oil and gas facility (generic)	TKM_S_438	38.09913, 54.02161	N	14651
45	▼ 2	Yemen	Waste	Landfill	YEM_S_019	15.47439, 44.15514	—	11752
46	▼ 1	Egypt	Oil and gas	Gas disposal facility	EGY_S_055	29.78652, 28.15206	N	11471
47	▼ 1	United States of America	Metallurgical coal	Venting shaft	USA_S_270	37.87696, -81.8263	—	10792
48		China	Metallurgical coal	Venting shaft	CHN_S_387	37.37779, 110.92137	—	10212
49	NEW	China	Thermal and metallurgical coal	Coal mine facility (generic)	CHN_S_840	26.34904, 104.67365	—	10183
50	NEW	Argentina	Oil and gas	Tank batteries	ARG_S_053	-38.76047, -68.83698	Y	9247

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. In May 2026, IMEO announced the launch of a pilot phase for rapid alerts in the coal and waste sectors.