

## COUNTRY

### CONTEXT

CCAC Methane Country Profiles are stand-alone briefings designed as tools for communication and advocacy, as well as discussion starters in the context of the Global Methane Pledge. They are designed to show the scale of potential reductions and high priority targets in each country, and to help guide strategic decision-making by Global Methane Pledge partners. The data used for Country Profiles is taken from international data used in the 2021 Global Methane Assessment, not from national inventories. This allows the Country Profiles to be internally consistent and comparable between countries, regions and global assessments. The country profiles do not replace nationally generated data or assessments. The profiles are made available to ODA-eligible countries, and upon request, beyond. They will not be made public unless the respective country wishes to do so. *Note* that all numbers are rounded to two significant digits.

### TOP-LINE NUMBERS

Projected national anthropogenic methane emissions in 2030 under a business-as-usual scenario (kt/yr):

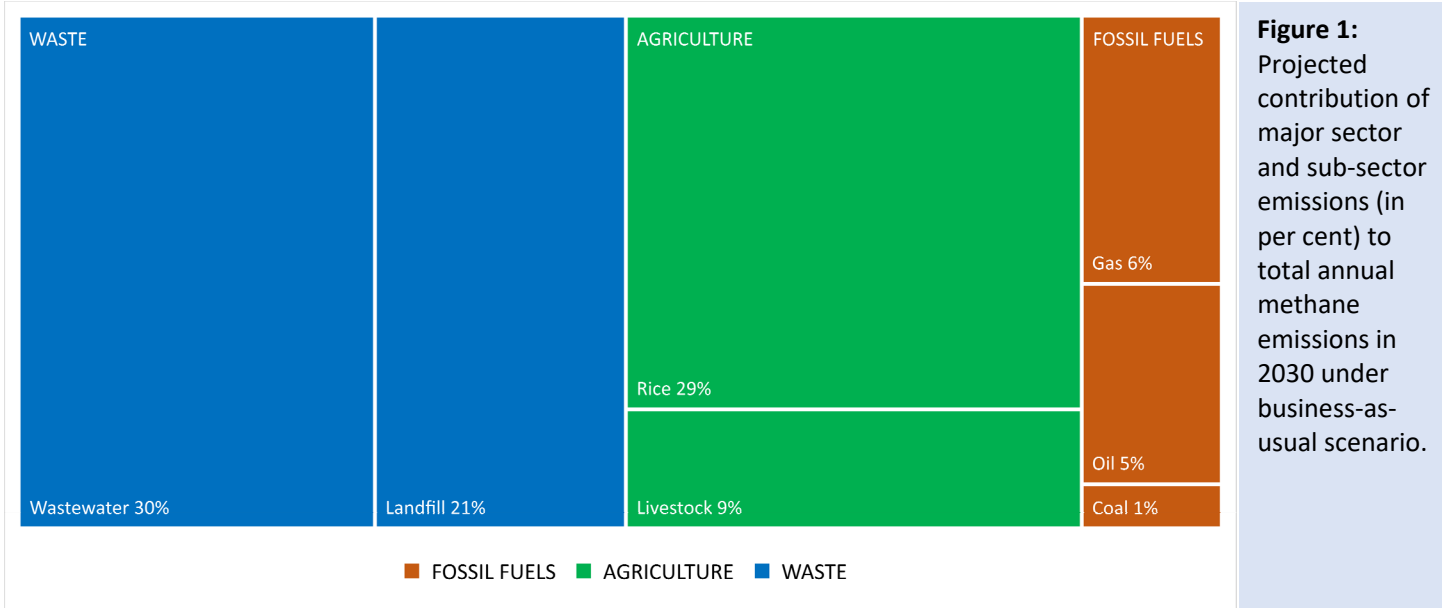
**12,000**

	2030 Abatement Potential (kt/yr)	Per cent reduction from business-as-usual
Fossil Fuels	630	47%
Agriculture	1300	30%
Waste	1700	30%
<b>TOTAL</b>	<b>3700</b>	<b>32%</b>

**Table 1 – 2030 methane mitigation potential by sector and total.** All numbers are rounded to two significant digits.

### 2030 EMISSIONS SOURCES

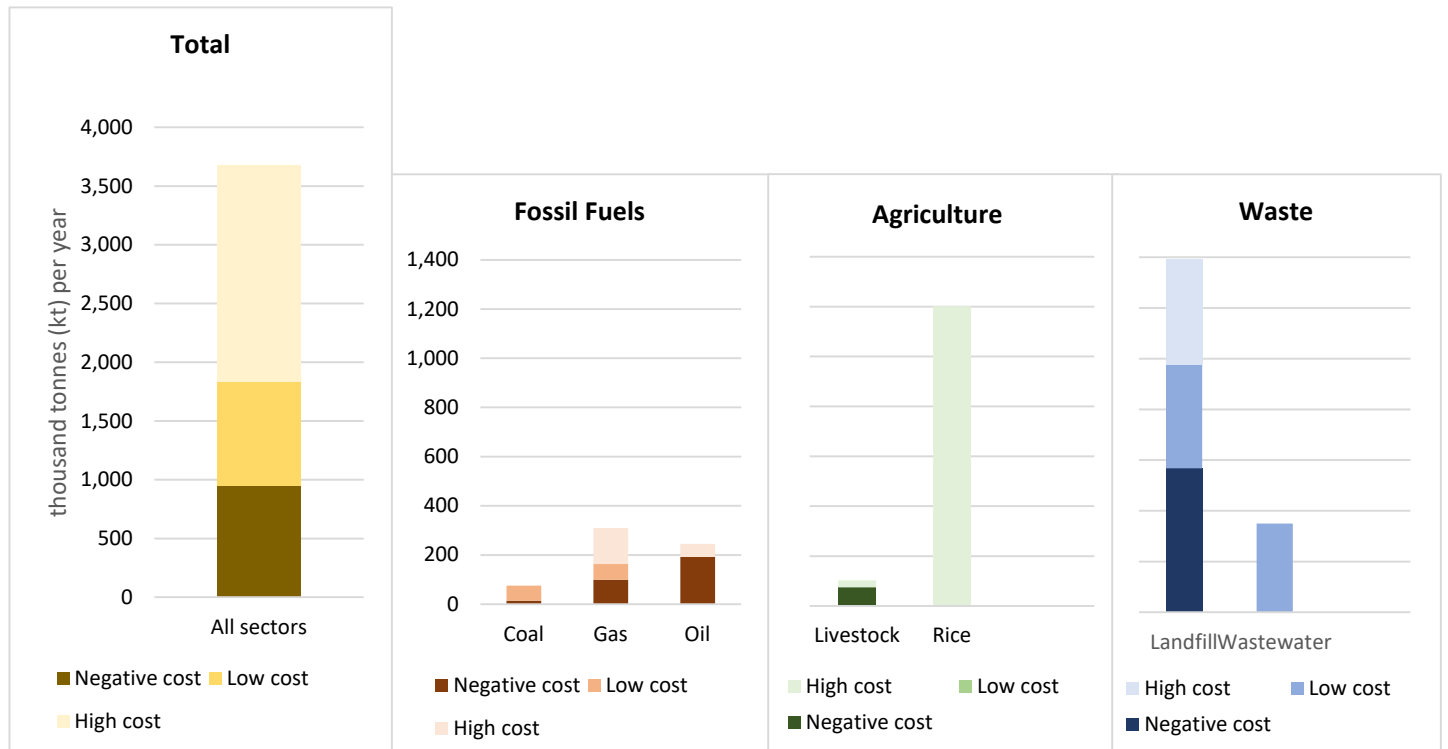
Snapshot of annual national methane emission sources showing contribution of source sectors to national total methane emissions.



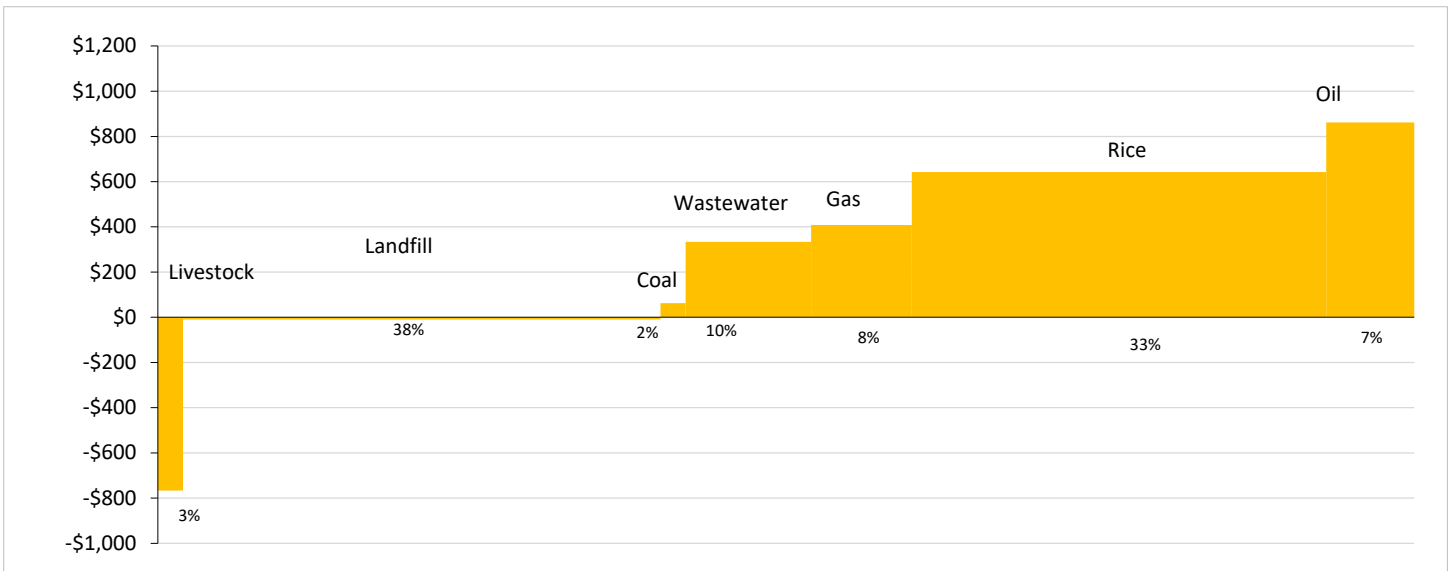
**Figure 1:** Projected contribution of major sector and sub-sector emissions (in per cent) to total annual methane emissions in 2030 under business-as-usual scenario.

## 2030 MITIGATION POTENTIALS

Total national methane mitigation potential in 2030 by sector and sub-sector.



**Figure 2: Abatement potential (kt) by cost category.** Left-most stacked bar showing total mitigation potential across all sectors on the y-axis (t/yr) with shading based on three cost-categories: negative cost (<\$0/ tonne methane); low cost (<\$600/ tonne methane); high cost (>\$600 /tonne methane). Three sectors are shown on the right. All costs are averaged across categories of mitigation options within each sub-sector; the costs for individual measures within a sub-sector may be higher or lower.



**Figure 3: Cost curve illustrating the average costs of mitigating methane, by sub-sector, per kt of methane reduced.** Average cost of implementing mitigation measures in main methane emitting sub-sectors. The height of each bar (y-axis) represents the average implementation cost for all mitigation measures in the sub-sector, the width of each bar (x-axis), represents the proportion of total 2030 mitigation each sub-sector could contribute. The percentage below each bar shows the percent reduction each sub-sector contributes to total 2030 mitigation potential. Note that the costs for individual measures within a sub-sector may be higher or lower than the average.

## TABLE OF MEASURES FROM 2021 GLOBAL METHANE ASSESSMENT

TARGETED MEASURES	
FOSSIL FUEL SECTOR (OIL, GAS & COAL)	Upstream and downstream leak detection and repair
	<i>Recovery and utilization of vented gas:</i> capture of associated gas from oil wells; blowdown capture; recovery and utilization of vented gas with vapor recovery units and well plungers; Installation of flares.
	<i>Improved control of unintended fugitive emissions from the production of oil and natural gas:</i> regular inspections (and repair) of sites using instruments to detect leaks and emissions due to improper operations; replace pressurized gas pumps and controllers with electric or air systems; replace gas-powered pneumatic devices and gasoline or diesel engines with electric motors; early replacement of devices with lower-release versions; replace compressor seals or rods; cap unused wells.
	<i>Coal mine methane management:</i> pre-mining degasification and recovery and oxidation of ventilation air methane; flooding abandoned coal mines
WASTE SECTOR	<i>Solid waste management:</i> (residential) source separation with recycling/reuse; no landfill of organic waste; treatment with energy recovery or collection and flaring of landfill gas; (industrial) recycling or treatment with energy recovery; no landfill of organic waste
	<i>Wastewater treatment:</i> (residential) upgrade to secondary/tertiary anaerobic treatment with biogas recovery and utilization; wastewater treatment plants instead of latrines and disposal; (industrial) upgrade to two-stage treatment, i.e., anaerobic treatment with biogas recovery followed by aerobic treatment.
AGRICULTURE SECTOR	<i>Improve animal health and husbandry:</i> reduce enteric fermentation in cattle, sheep and other ruminants through: feed changes and supplements; selective breeding to improve productivity and animal health/fertility
	<i>Livestock manure management:</i> treatment in biogas digesters; decreased manure storage time; improve manure storage covering; improve housing systems and bedding; manure acidification.
	<i>Rice paddies:</i> improved water management or alternate flooding/drainage wetland rice; direct wet seeding; phosphogypsum and sulphate addition to inhibit methanogenesis; composting rice straw; use of alternative hybrids species
	<i>Agricultural crop residues:</i> prevent burning of agricultural crop residues.

## BENEFITS OF NATIONAL METHANE ACTION

	Avoided deaths ozone (per year)	Avoided asthma-related ER visits (per year)	Avoided crop losses (kt/yr)	Lost work hours avoided (million hrs/yr)
Negative Cost	1,300	3,100	140	390
Low Cost	1,300	2,900	130	360
High Cost	2,600	6,000	270	750
<b>TOTAL</b>	<b>5,200</b>	<b>12,000</b>	<b>540</b>	<b>1,500</b>

**Table 2:** Global health, agricultural and development benefits that will accrue due to full national methane mitigation by 2030. Benefits are broken down by cost category.

## CONTACT THE CCAC SECRETARIAT

The Climate and Clean Air Coalition is a voluntary partnership of governments, intergovernmental organizations, businesses, scientific institutions and civil society organizations committed to improving air quality and protecting the climate through actions to reduce short-lived climate pollutants. The CCAC is a core implementor of the Global Methane Pledge and first port of call for participating countries. For more information about this Country Profile, the CCAC or the Global Methane pledge please contact the CCAC Secretariat at: [secretariat@ccacoalition.org](mailto:secretariat@ccacoalition.org)



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CLEAN AIR  
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CLIMATE POLLUTANTS

United Nations Environment Programme  
1 Rue Miollis, Building VII | 75015 | Paris | France  
T: (+33) 1 44 37 14 73  
F: (+33) 1 44 37 14 74  
E: [secretariat@ccacoalition.org](mailto:secretariat@ccacoalition.org)