The Huge Climate Potential of Methane Reductions

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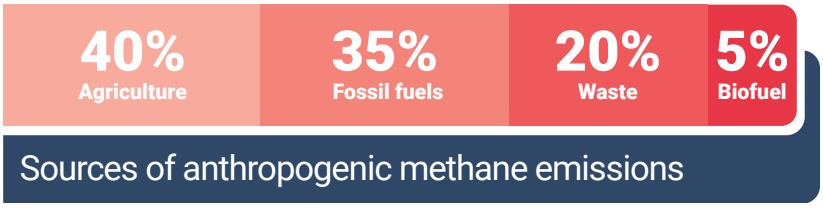
UNEP's Emissions Gap Report 2021 finds that greenhouse gases need to fall close to 50% by 2030 to limit global warming to 1.5°C, but Nationally Determined Contributions (NDCs) under the Paris Agreement are still insufficient. This factsheet examines how methane can contribute to rapidly closing the shortfall in action.

Why methane is important

Methane emissions are the second largest contributor to global warming. The gas has a global warming potential over 80 times that of carbon dioxide over a 20-year horizon. It contributes 31% of the net warming impact of all well-mixed green-house gas emissions. Anthropogenic methane emissions account for 60% of total methane emissions. However, methane has a shorter lifetime in the atmosphere than carbon dioxide: only twelve years, compared to up to hundreds. This means that cutting methane emissions can lower temperatures quickly.



Sources of anthropogenic methane emissions

The potential of action on methane

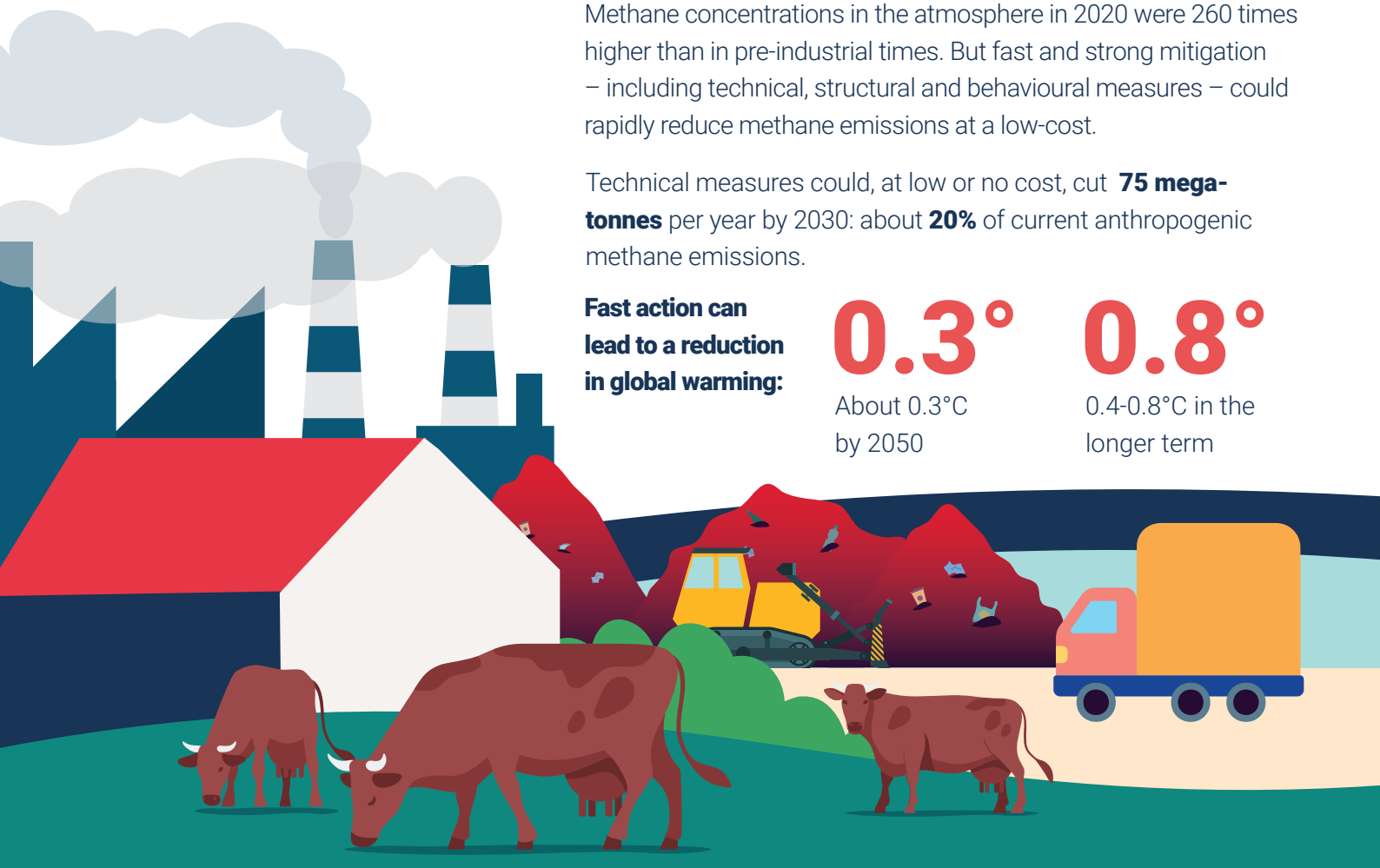
Methane concentrations in the atmosphere in 2020 were 260 times higher than in pre-industrial times. But fast and strong mitigation – including technical, structural and behavioural measures – could rapidly reduce methane emissions at a low-cost.

Technical measures could, at low or no cost, cut **75 mega-tonnes** per year by 2030: about **20%** of current anthropogenic methane emissions.

Fast action can lead to a reduction in global warming:

0.3°
About 0.3°C by 2050

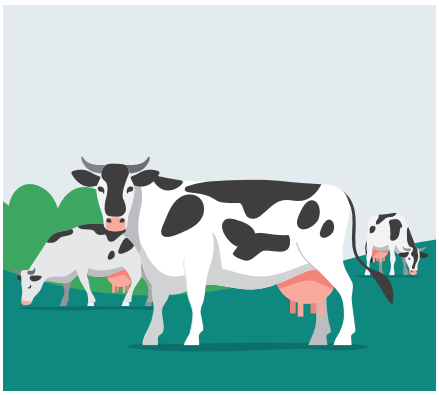
0.8°
0.4-0.8°C in the longer term



The Key Sectors

Fossil Fuels

Using existing technologies to reuse methane leaking from oil, gas and coal facilities can reduce the sector's emissions by **40-50%** by 2030 - much of it at net-zero cost.



Agriculture

Measures such as changing rice growing patterns, breeds of cattle and their diets can reduce the sector's emissions by **20%** by 2030.

Waste

Actions such as diverting organic material from landfills or capturing landfill gas can reduce the sector's emissions by **35-40%** by 2030.

Are we making progress?

There are signs of a transformation taking place in some parts of the world:

30% Over thirty countries have joined a US and EU-led pledge to reduce global anthropogenic methane emissions by at least 30% by 2030.

55% The EU's 2020 Methane Strategy aims to reduce 2030 emissions by 55%.

75% Nigeria and Cote d'Ivoire are targeting 60-75% reductions in the oil and gas sector by 2030, as part of the Global Methane Alliance.

1/3 However, NDCs are expected to deliver a global reduction in methane by 2030 that is only about one-third of what is needed for 2°C scenarios.

What more can we do?

Behavioural and structural changes – such as eating less meat and dairy, reducing food waste and loss, and switching to renewables – **could cut another 15% off methane emissions by 2030**.

Policymakers could increase efforts to engage investors looking to become climate friendly.

Countries can include methane specific targets for agriculture in their NDCs. Of the 46 countries that contribute 90% of agricultural emissions, only a quarter included measures targeting emissions from livestock.

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