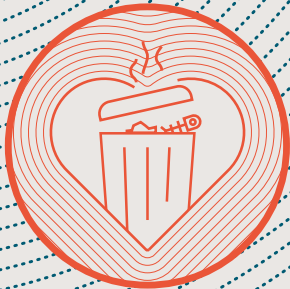


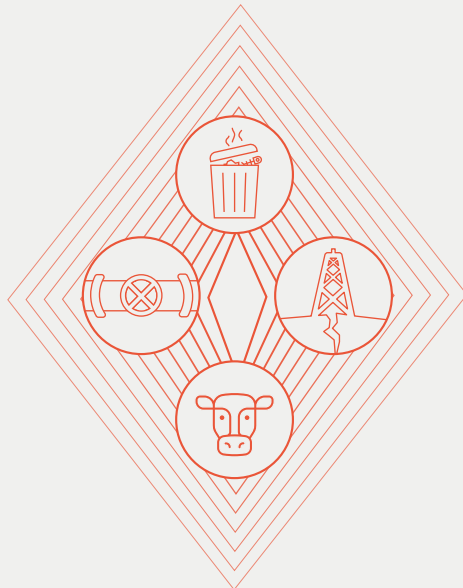


METHANE JOKER
FOR THE CLIMATE EMERGENCY



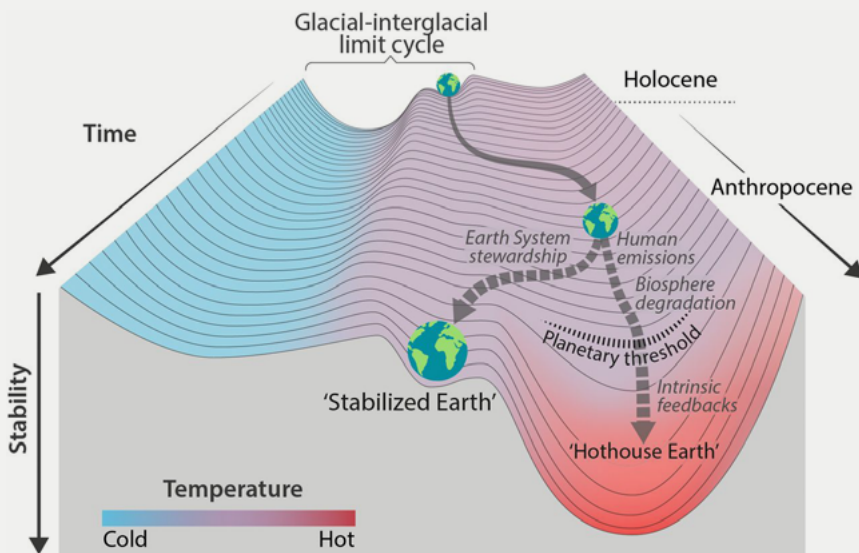
METHANE JOKER FOR THE CLIMATE EMERGENCY

Banning fracking,
shutting down fossil gas infrastructure,
stopping new drilling and other methane-
reducing measures have the potential to reduce
temperatures quickly, as short-lived CH₄
disappears from the atmosphere, making the
Methane Joker one of the key ingredients
of a climate emergency strategy.



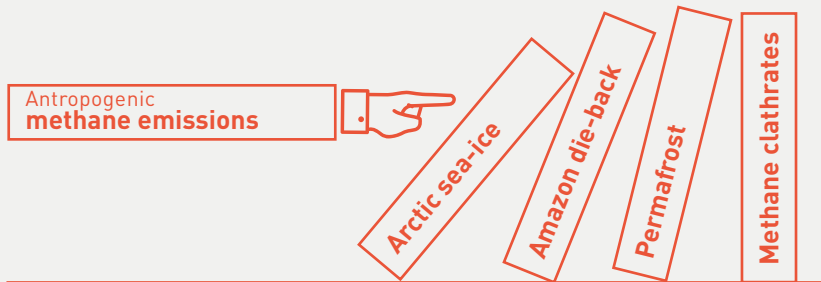
METHANE AND THE DOMINO EFFECT

Climate change is not only about slowly rising temperatures. The bigger danger lies in so-called “run-away climate change”, a sort of domino effect where once triggered, one tipping element (such as methane in permafrost, a melting Arctic sea ice or the die-back of the Amazon), tips over the next one and so on, until we end up with 8°C warmer temperatures, no ice on the poles and 60 meters sea-level rise. The point of no return for this scenario has been estimated to lie at 350 parts per million of CO₂ in the atmosphere (that’s where 350.org takes its name from), and we are already past that point, in the danger zone. Run-away climate change might be triggered at the moment, we don’t really know.



The global tipping point of no return towards “Hothouse Earth”

Source: Steffen et al. 2018



In this context of climate emergency, methane¹ is a gas that pushes us strongly in the direction of run-away climate change. It is a short push (see below), but a strong one.

Anthropogenic methane currently heats the planet more than half as much as CO₂.

Emitted compound		Resulting atmospheric drivers	Radiative forcing by emissions and drivers				Level of confidence	
Anthropogenic Well-mixed greenhouse gases	Carbon dioxide	CO ₂					VH	
	Methane	CO ₂ H ₂ O ^{str} O ₃ CH ₄					H	
			-1	0	1	2	3	
Radiative forcing relative to 1750 (W m ⁻²)								

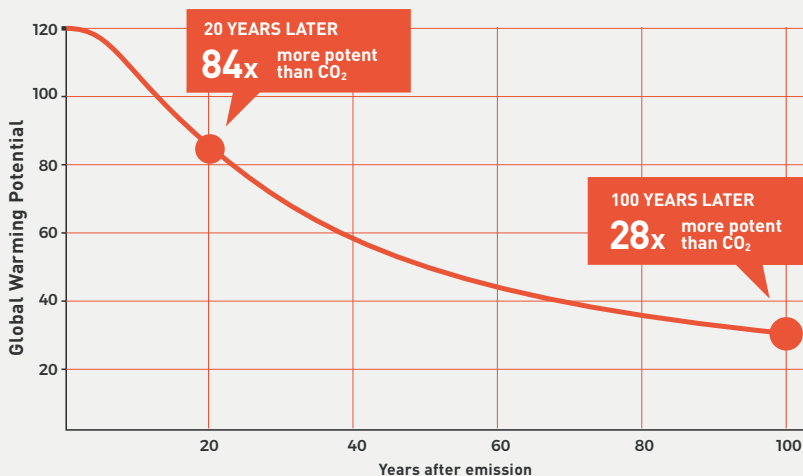
Man-made “radiative forcing” (current contribution to warming)

Source: IPCC 2013

1 Fossil gas (branded as “natural” gas by industry) is mostly methane and an unmonitored portion of up to 10% of it escapes along the supply chain.

CONTRADICTION WITH UNFCCC ACCOUNTING

Run-away climate change is not well understood and climate models are just starting to integrate the tipping-point dynamics. In the meantime, the “scientific basis” upon which the UN climate negotiations rest uses older knowledge, where run-away climate change is not part of the models and therefore downplays the short-term impact of methane, focussing on the long-term picture only. In the long-term picture, methane can be made “fungible” in accounting by estimating its warming contribution over 100 years. This dilutes the strong warming contribution it makes while it is in the atmosphere (over 100 times as much as the same amount of CO₂, see figure below) and suggests that it contributes much less to climate change. The gas industry uses this to argue gas were “less polluting” or even “climate-friendlier” than other fossil fuels.

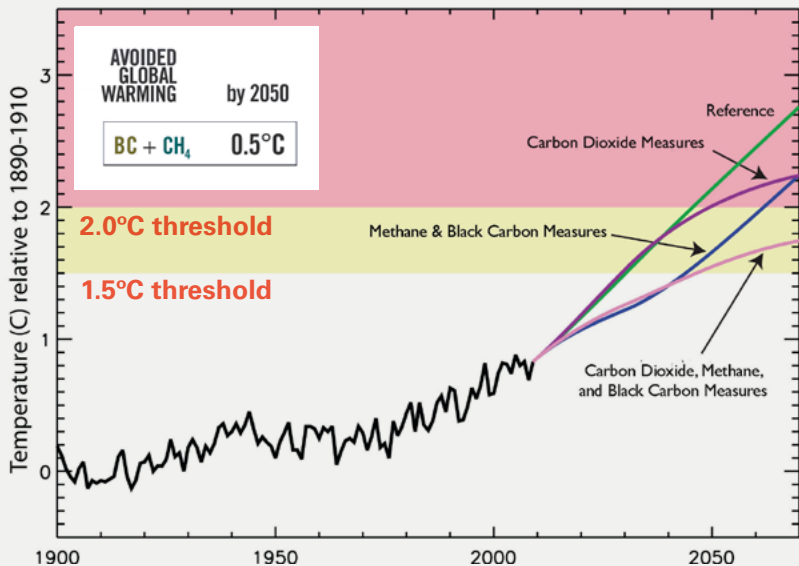


Global Warming Potential of methane compared to CO₂

Source: Allen 2014

THE ATMOSPHERE AS A BATHTUB

While CO₂ stays in the atmosphere for centuries or millennia, the good news about methane is: its effect is temporary. Imagine a bathtub full of water, with an open tap where water flows in and an open drain where it flows out: the atmosphere contains slightly over 5000 megatonnes of methane, every year around 10% flow in and around 10% flow out, after 12 years whatever you have put in, is gone. 12 years happens to be the climate emergency response time mentioned by the IPCC in the report about how to stay below 1.5°C warming.



Methane and black carbon mitigation buys us time.

Source: Shindell et al. 2012 & CCAC 2014

THE METHANE TIME JOKER

This means that methane is an excellent target for a response to the climate emergency, because when you start reducing methane emissions, the warming effect immediately drops². And there are great ways to do this: fossil fuels contribute 180 megatonnes out of 580 that get emitted every year. Fracking is particularly “methane intensive”. So are cows and deforestation. Sewage and waste are also significant contributors. By stopping fracking, reducing the number of cows, stopping deforestation and dealing with our garbage problem, we can get global temperatures to drop. If we stop burning fossil fuels, that is.

Shutting down fossil fuel infrastructure is a task that will take a few years to accomplish. 2030-2040 seems a reasonable timeframe to achieve this world wide, based on the current wide-spread addiction. In order to complete the global energy transition to 100% renewable energy, methane is a time joker, that can buy us a short term relief of up to 0.5 degrees or 15 extra years before passing 1.5 or 2 degrees. This is exactly the time we need for a phase out of fossil fuels.

Contact: info@gastivists.org

2 For CO2 you either have to wait for a few thousand years, or actively remove the CO2 from the atmosphere again.

STOPPING METHANE EMISSIONS IS AN ESSENTIAL TIME JOKER FOR THE CLIMATE EMERGENCY.

*THIS IS THE EXACT OPPOSITE OF
WHAT THE GAS INDUSTRY TELLS US!*

We must stop drilling and shut down coal and gas as soon as possible, fracking must be banned, ambitious programmes to end deforestation, solve the waste problem and reduce methane-intensive industrial agriculture must be put in place.

**Methane is a greenhouse gas itself,
let's just keep it in the ground!**

