

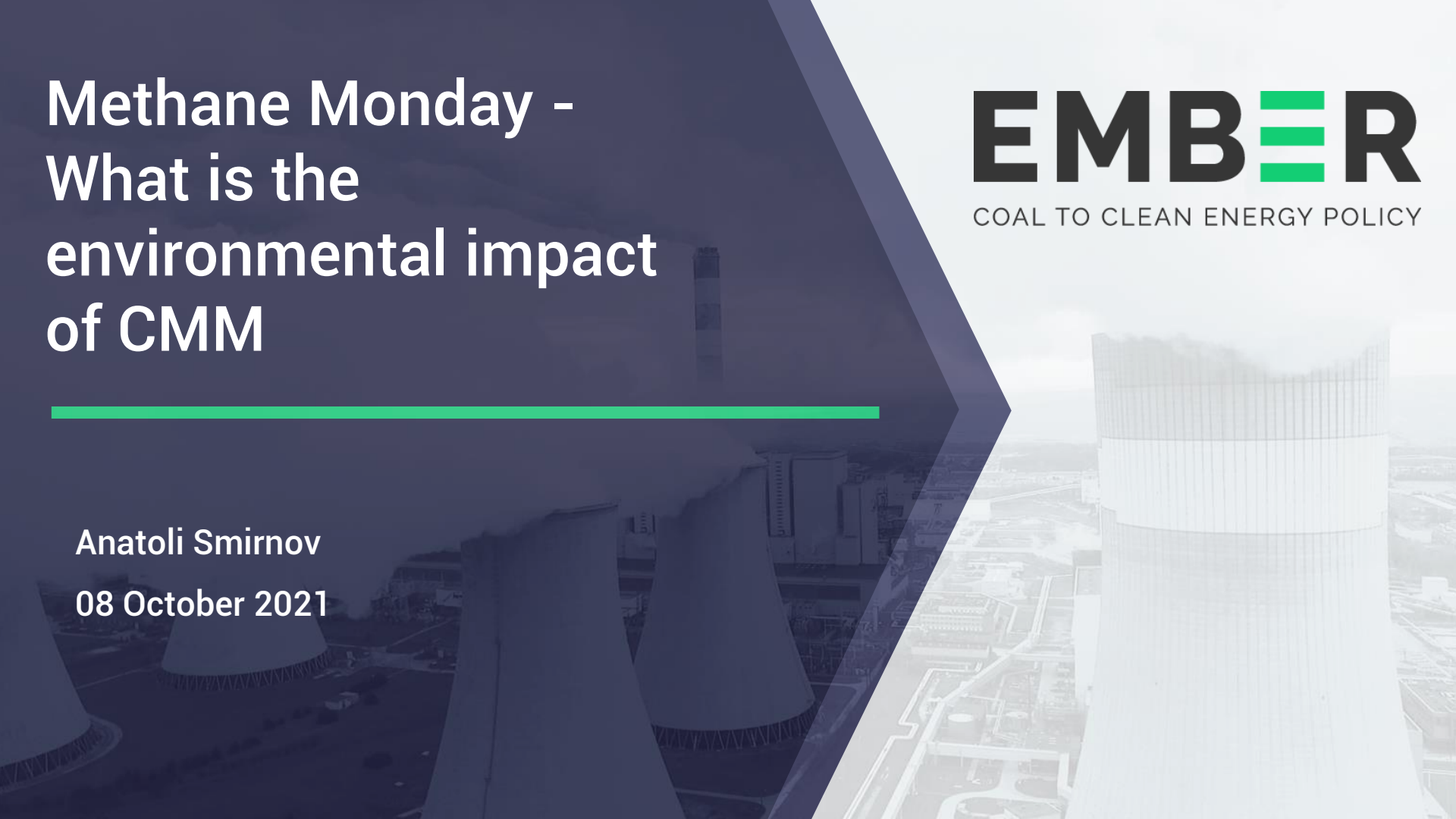
Methane Monday - What is the environmental impact of CMM

Anatoli Smirnov

08 October 2021

EMBEER

COAL TO CLEAN ENERGY POLICY



Accelerating the global electricity transition from coal to clean



Tracking
electricity data



Changing
policy

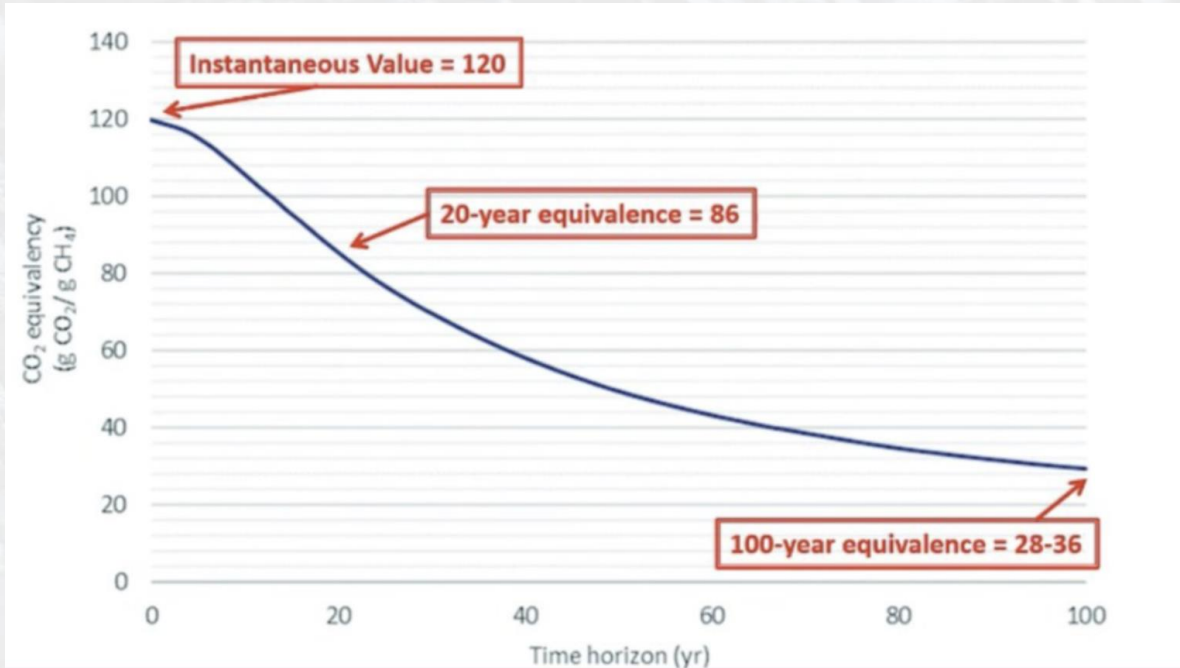


Shaping the
global narrative



Empowering
campaigns

Methane - a powerful greenhouse gas



Source: UNEP



How to compare against CO₂?

GWP?

is accepted, but how many years?

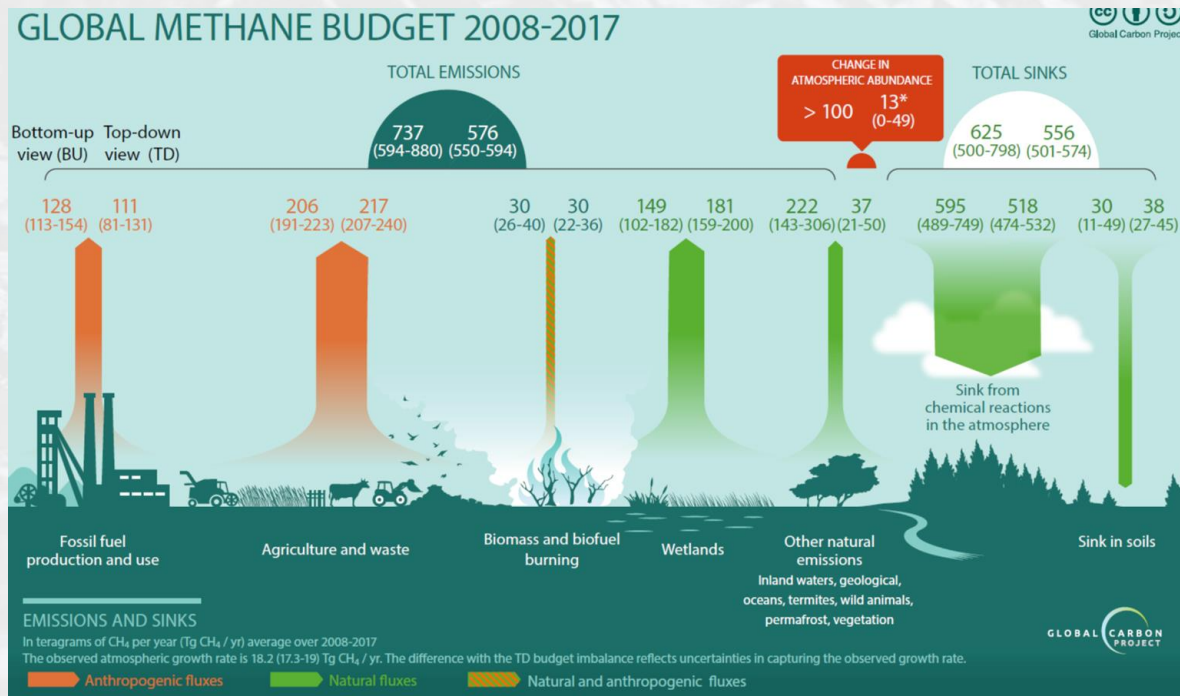
At **20 years**, **GWP = 86x**, but means that methane leaked before 2001 doesn't count.

GWP 100 years? = 25x, but the planet will fry before that.

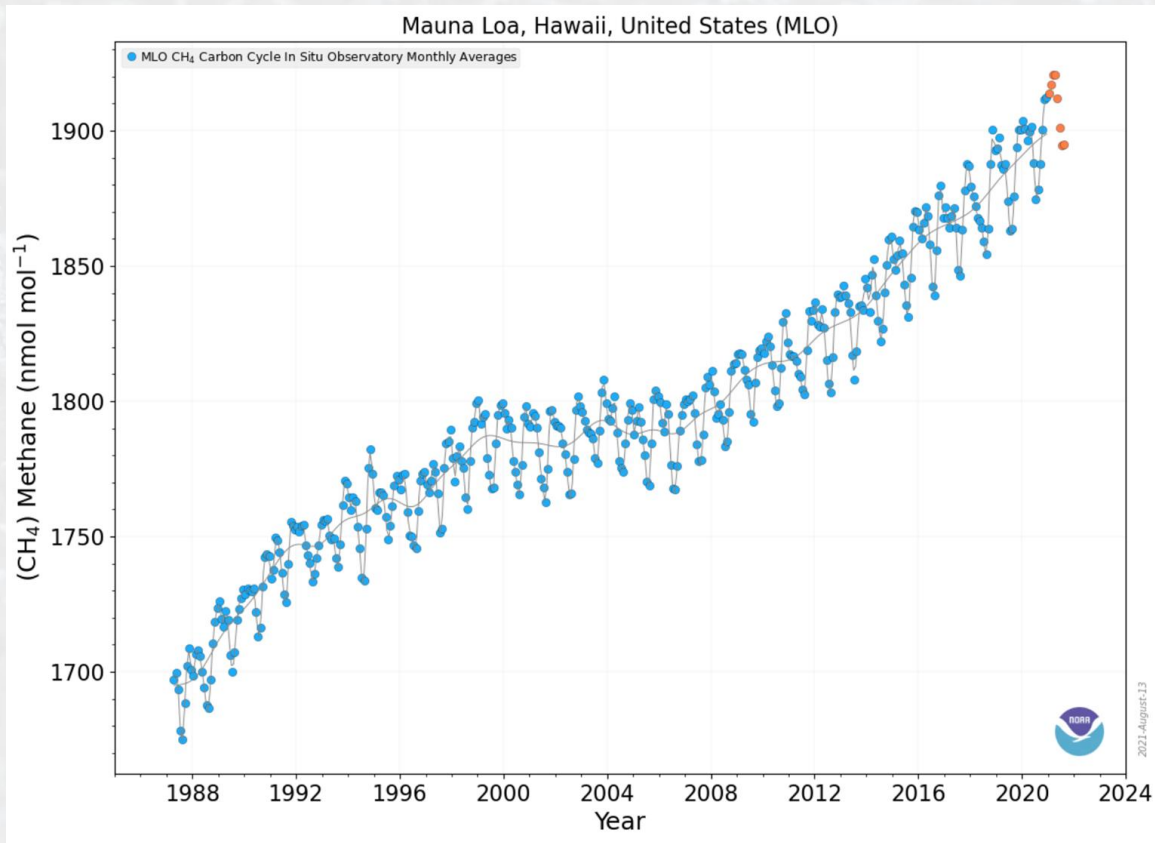
Global Temperature Potential (GTP)? = same problem.

IEA (WEO 2017) states that we shouldn't be comparing methane to carbon dioxide, but reduce both of these separately.

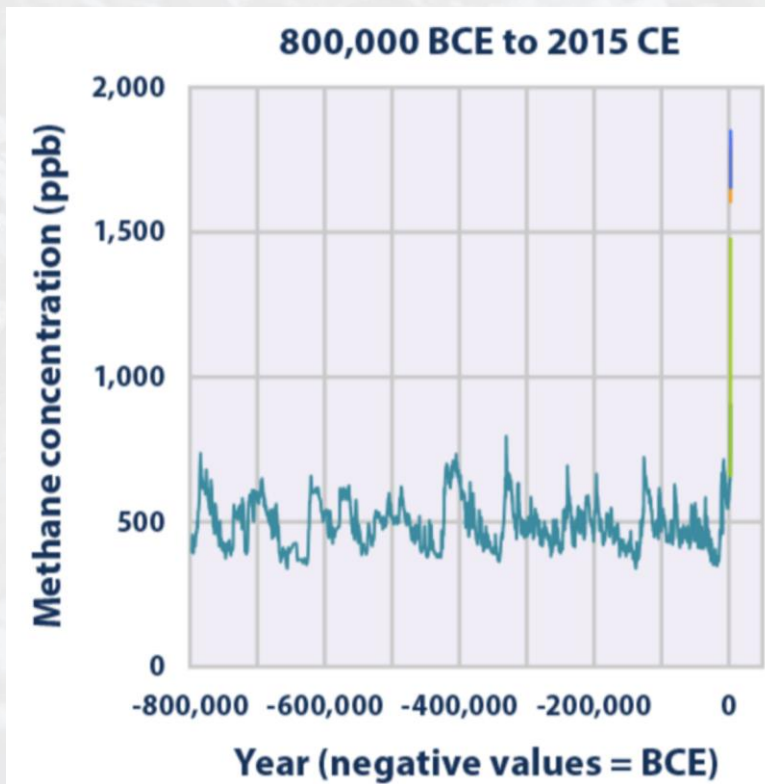
40-50% of Methane Emissions Anthropogenic



Rising Steadily



Disbalance in last thousand years.



CMM's Role?

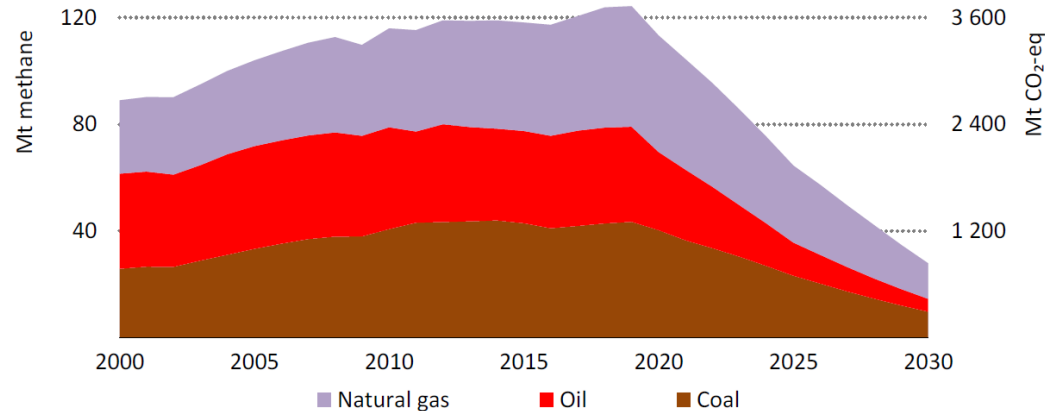


IEA Net Zero by 2050:

2020: 40MT/a of CMM -

2030: <10MT

Figure 3.5 ▶ Methane emissions from coal, oil and natural gas in the NZE

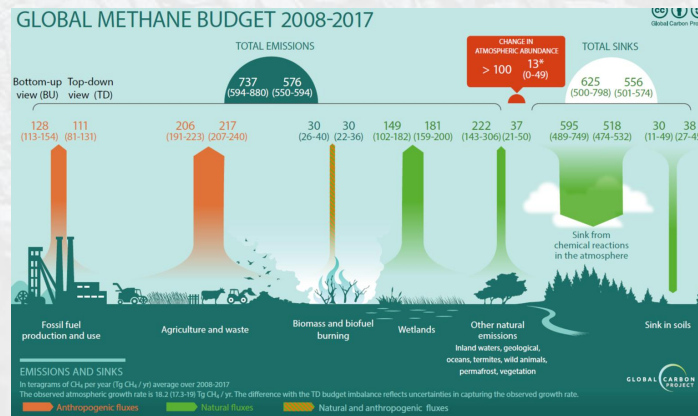


IEA. All rights reserved.

Methane emissions from fossil fuels fall by 75% between 2020 and 2030 as result of a concerted global effort to deploy all available reduction measures and technologies

CMM Share of Emissions:

CMM Share of	2020
CH4 emissions from the energy sector	30%
Anthropogenic Methane Emissions	10%
Total Methane Emissions	6%

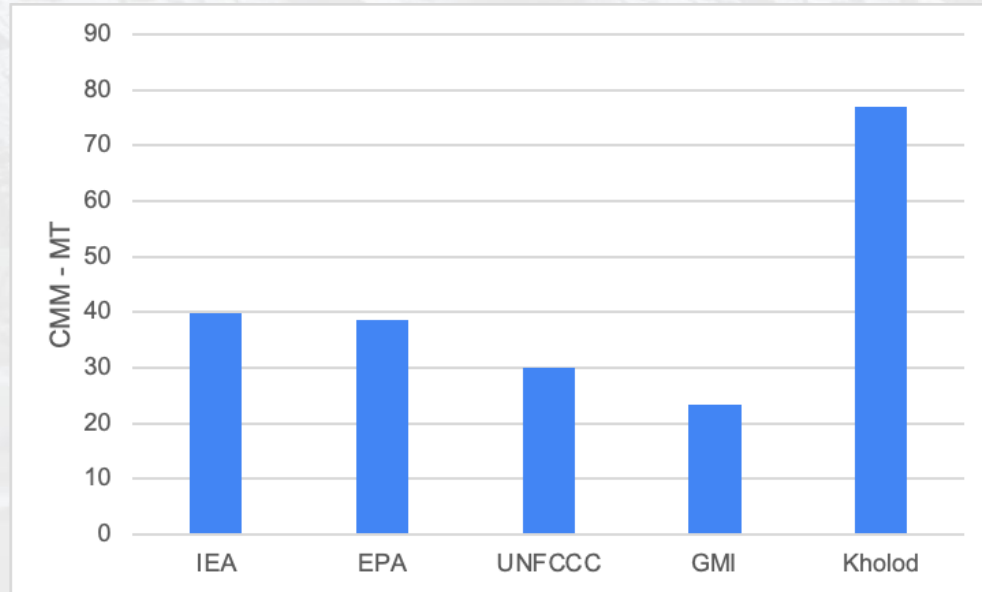


But



Elephant 1: Uncertainty about CMM volumes

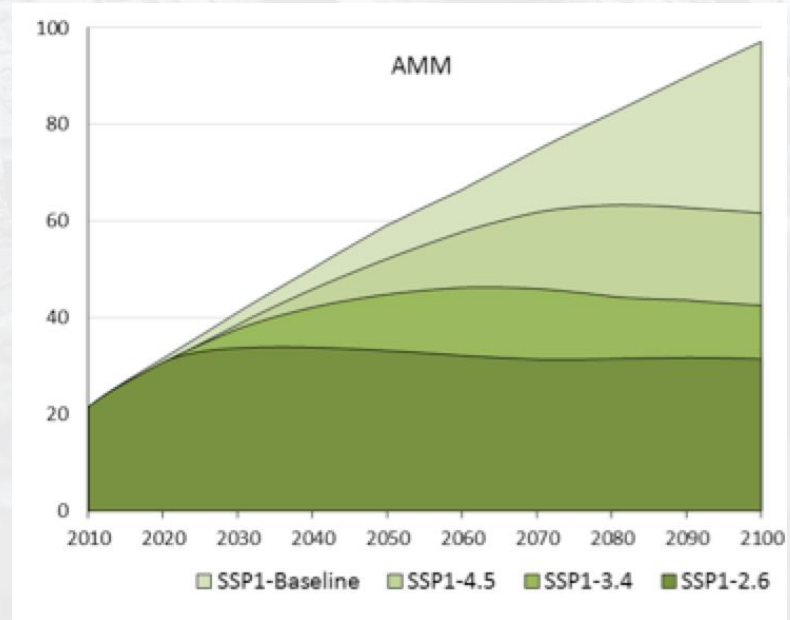
We really don't know how much CMM is emitted



Elephant 2: Abandoned Mine Methane

- IEA does not include AMM
- As mines get closed, they leak for decades to come.
- Mines with substantial coal reserves left in place will leak a lot of AMM

Kholod 2020 estimates that without mitigation, aggressive mine closure, AMM emissions will quadruple by 2020.





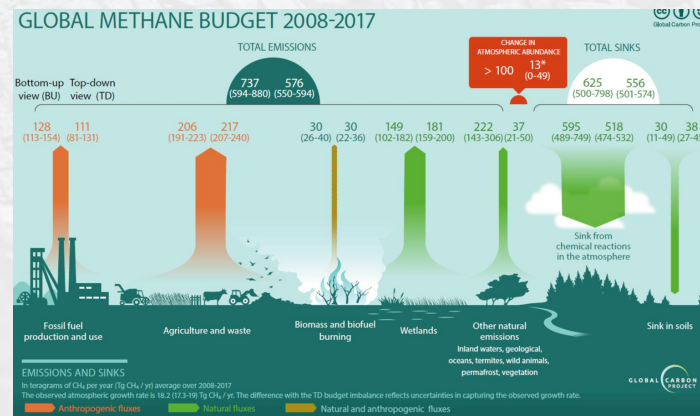
Other elephants

Met Coal: No obvious short-term alternatives to metallurgical coal, yet is typically gassiest.

Methane intensity: IEA assumes that methane intensity will halve by 2030, but unclear how


CMM Share of Emissions: Worse case

CMM Share of	2020
CH4 emissions from the energy sector	50%
Anthropogenic Methane Emissions	25%
Total Methane Emissions	12%



**What is the
environmental
impact of CMM?**

EMBER

- 
- **We don't really know.**
 - **Getting proper measurement campaign at all global coal mines – active, proposed and abandoned is critical;**
 - **Currently, direct and indirect social cost of methane emissions are estimated at 1150-5610 EUR/tonne (Shindell et al., 2017)**
 - **Whatever the global impact, we must fight for each tonne of methane emissions.**



Thank you

EMBER

info@ember-climate.org