

Methane Mitigation Assessment Webtool Version1.0

The EPA and IEA modeled methane emission scenario provides an exhaustive technology intervention that demonstrates the possible abatement in emissions as well as the corresponding economic savings. In order to effectively communicate the following opportunities to the policy makers and stake holders, we devise a strategy that is efficient and easy-to-understand without detailing each technical option. We classify each listed technology intervention into sub-categories that broadly represent coherences in their functionality. For example, the 18 abatement technologies from oil and gas sector were classified under three categories of *replace*, *retrofit*, and *repair*; where *replace* category implies replacing either a mechanical component in the existing technology or replacing the whole technology with new advanced feature. Similarly, *retrofit* category includes all the interventions which deals with installing an additional unit that captures or recovers fugitive methane. Finally, *repair* category enlists those interventions which involves inspection and maintenance of either mechanical device or a unit operation. Given below are the sub-categories in each source (sector) that explains the underlying classifying feature.

Oil and gas (Energy)

- *Replace*: replacing either a mechanical component in the existing technology or replacing the whole technology with new advanced feature
- *Retrofit*: deals with installing an additional unit that captures or recovers fugitive methane
- *Repair*: involves inspection and maintenance of either mechanical device or a unit operation

Coal (Energy)

- *Energy*: methane is used in power generation
- *Utility*: methane is utilized as utility
- *Dispose*: methane is flared

Livestock (Agriculture)

Enteric fermentation

- *Vaccine administration*: vaccine-based solution that improves digestion and reduces methane emission
- *Improved feed*: as name suggests, it deals with improved grazing, feed and precursors

Manure management

- *Digester with engine*: methane from manure management is captured using biogas plant of varying sizes which is equipped with engine for utilizing methane
- *Digester without engine*: biogas plant digester doesn't utilize methane on-site but captures methane

Landfill (Waste)

- *Energy generation*: technologies that capture methane or use waste for energy generation
- *Gas recovery*: Methane is recovered using anerobic methods and later transported
- *Flaring and oxidation*: On-site disposal technologies
- *Treatment and recycling*: Technologies/processes that involve further treatment of waste or transform into recyclable product.

Link to access the methane mitigation assessment tool:

<https://methanemitigation-4a93vax45iakktuyzi3jpy.streamlit.app/>

How to use the tool?

1. Choose the dataset for the mitigation analysis. Either EPA, IEA (only coal, oil and gas) or combination of both EPA and IEA for coal, oil and gas.

Which methane data do you want to use for the mitigation analysis?

- ☒ EPA data
- ☐ IEA data (coal, oil & gas)
- ☐ Both (coal, oil & gas)

2. Select the year and the country. If you select EPA, the dataset is available from 2020-2050 at an interval of 5 years. Whereas IEA only has a single year dataset, i.e. 2020.

SECTION A - COUNTRY

Select the year for the analysis



2020

–

+

For which country do you want to do the analysis?

Afghanistan



3. Fix your strategy. Either choose a solution based on fixed methane reduction target or by investing a mitigation cost. Accordingly enter the value, which would be in Gg or ktonne methane to be reduced or in million US dollar to be invested.

Choose from below strategy ?

☒ Fix methane amount

☐ Fix mitigation cost

Enter a value ?

10.0 - +

Current analysis is for 10.0 Gg or ktonne

Choose from below strategy ?

☐ Fix methane amount

☒ Fix mitigation cost

Enter a value ?

10.0 - +

Current analysis is for 10.0 Million USD

- Select a threshold in USD/tonne methane below which all the technologies would be considered in the mitigation analysis. Default value is 21000, that means, all the mitigation technologies that cost less than 21000 USD/tonne methane will be considered as an option.

Set a cost threshold in USD per tonne methane above which abatement measures will be excluded ?

21000 - +

- Choose the analysis at sector or sub-sector level. If at sector level, the follow-up options will include broad categories of agriculture, energy and waste. If you choose sub-sector, the follow-up options will include livestock, rice cultivation, coal, oil, gas, landfill and wastewater. Finally Calculate.

Choose analysis at the sector or sub-sector level

Sector ▼

Choose the sector

AGRICULTURE ▼

- If your selected settings are to be compared across different countries, select the country from the dropdown list and press compare. More than one country can be selected and compared.

SECTION B - GLOBAL

Comparison with other countries in livestock. Populate the box below with countries by choosing the drop down arrow.

Multiple Countries:

Afghanistan ×



Compare