

HIGG FEM 2024

# FEM 2024 Energy Source Changes

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## Summary

The only change to energy sources between FEM 2023 and FEM 2024 is an annual update to country grid emission factors which are changing to reflect the most recently licensed values from IEA. *The update reflects the changing nature of national grids and does not impact comparability between FEM 2024 and earlier editions.*

Prior to FEM 2024 country grid factor updates were ad hoc and FEM 2022 and FEM 2023 shared the same factors. Because the changes in FEM 2024 represent multiple years of changing grid emissions the impact of this change will be larger than might otherwise be expected. An analysis of the scale of the change is provided in this document for FEM data users to prepare and understand.

The specific values of the country grid emission values may not be shared due to IEA's licensing terms. However we include a summary of the countries most impacted to allow data consumers to understand the potential impact of the update.

## Impact

### Aggregate Data Users

**Users of aggregate FEM emissions data can expect a drop of about 3.5% in total GHG and a drop of 10% in emissions of purchased electricity due to the grid factor updates in FEM 2024**

The average change in country grid factors in FEM 2024 is about -15%. However, many large changes are in countries and regions with very few or even zero FEMs. For this reason looking at the change the new emission factors produce applied to an old FEM cadence is more helpful in understanding the changes.

Using FEM 2022 data rather than FEM 2023 because they used the same country grid factors and FEM 2022 is complete as of the time of writing for comparison while many FEM 2023s are still in verification the average change in total GHG using new emission factors is -3.5% and -10% considering only emissions from purchased electricity.

### Individual Country Impacts

80% of countries with active FEMs in the data set used for this analysis have grid emission factor changes of less than 50% (positive or negative).

Of the remaining countries the changes are as follows (the specific values may not be shared due to the licensing agreement with IEA):

| Large Increase       | Large Decrease |
|----------------------|----------------|
| Albania              | El Salvador    |
| Nepal                | Croatia        |
| Macedonia            | Denmark        |
| France, Metropolitan | Norway         |
| Burma                | Brazil         |
| Madagascar           | Sweden         |
|                      | Ethiopia       |
|                      | Slovakia       |
|                      | Lithuania      |
|                      | Latvia         |
|                      | Switzerland    |
|                      | Costa Rica     |

For all countries, and those listed in this table in particular, it is important to be mindful that changes to the absolute emissions attributable to purchased electricity are not entirely within the control of the facility.