Meat Institute

# Greenhouse Gas Accounting Emissions Factors Briefing

Aligned with the Meat Institute's mission to strengthen trust and demand for the food we produce, the association pursues and develops pre-competitive solutions to increase transparency and the use of science-based practices to reduce negative impacts to climate, land, air, and water, and not to coordinate business conduct or competitive behavior. Packers and processors have shared their insights through a voluntary survey limited to pre-competitive information focused on sustainability methodologies and emissions-factor references. No competitively sensitive or commercially strategic information (such as pricing, production levels, supply strategies, or proprietary cost data) was requested or shared. All responses were aggregated and anonymized to prevent identification of individual company data or business practices. Participation does not create any obligation or expectation that companies align commercial decisions, and companies remain free to independently determine their own GHG accounting practices, suppliers, reporting methodologies, and sustainability strategies. Stakeholders interested in participating in learning exchanges or contributing technical expertise are welcome to reach out. Participation is voluntary and does not involve coordinated commercial decisions or expectations regarding business conduct.

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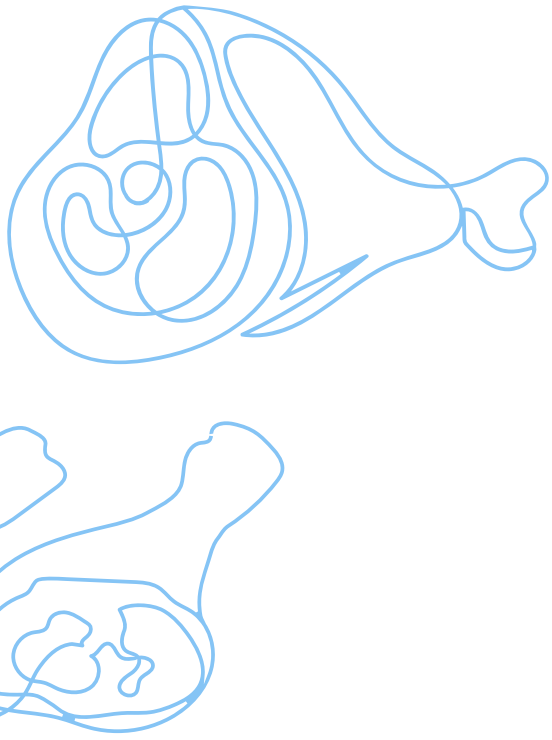
# Greenhouse Gas Accounting: Emissions Factors


## Summary

A particular industry interest identified in a June 2025 workshop is the diversity of scope 3 Emissions Factors (EF's) used in GHG accounting across the project-level (intervention accounting), in corporate reporting (inventory accounting), and for sector level analysis (life cycle assessment). Survey results show a range of EFs being used for scope 3 calculations. Insights also indicate a low level of visibility around production practices and supporting data back to the farm, feed or field where scope 3 impacts originate. Insights also indicate a desire for a standard methodology and use of emissions factors at the corporate and sector level, thus allowing stakeholders to innovatively build credible projects and inventory reductions throughout their supply chains.


## Survey Insights

The insights represent feedback from 12 packers and processors diverse in their size, scope and products. The size and scale of the companies and the footprints they represent indicate the industry is actively thinking about this topic and desires a dialogue around how to resolve the current challenges across the scope 3 GHG accounting landscape.



## Beef Insights:

| Scope 3 Cat. 1 | Scope 3 Cat. 11 | Scope 3 Cat. 12 |
|---|---|---|
| • Watershed<br>• EPA NAICS<br>• 2.847 kgCO2e/unit<br>• Beef Cows 36.4 kgCO2e/kg CW (Rotz et al)<br>• Beef Finished Cattle 20.6 kgCO2e/kg CW (Rotz et al)<br>• Dairy Cows 14.2 kgCO2e/kg CW (Rotz et al)<br>• Dairy Bred Finished Cattle 13 kgCO2e (Rotz et al)<br>• 33.8MT CO2e MT (AGRIBALYSE)<br>• 13.5067 kgCO2eq/kg (FAOstat)<br>• US: Rotz et al. 2019<br>• Canada: National Beef Sustainability Assessment 2016<br>• 18.45911994 kg CO2e / kg live weight (ecoinvent)<br>• sourced) (ecoinvent)<br>• Putnam et al, 2023 | • Internal methodologies<br>• Domestic Refrigeration - 0.0094 kgCO2e/kg chilled product<br>• Domestic Refrigeration - 0.0497 kgCO2e/kg frozen product<br>• Cooking - 0.1609 kgCO2e/kg product | Internal calculations |

## Pork Insights:

| Scope 3 Cat. 1 | Scope 3 Cat. 11 | Scope 3 Cat. 12 |
|---|---|---|
| • Internal quantification<br>• 2.37 kgCO2eq/kg (FAOstat)<br>• 3.1 kg CO2e / kg live weight (Thoma, NPB LCA)<br>• 2.37 kgCO2eq/kg (FAOstat)<br>• 1.13 kg CO2e/purchase price ($) (NAICS-6) | • Not included, reported at not material<br>• 211.4 kgCO2eq/ processed head (3rd party calculation) | • 15.29117562 kgCO2eq/ processed head (3rd party calculation)<br>• 0.69 metric tons CO2e / short ton material (EPA Emissions Factor Hub)<br>• Not included, reported at not material |

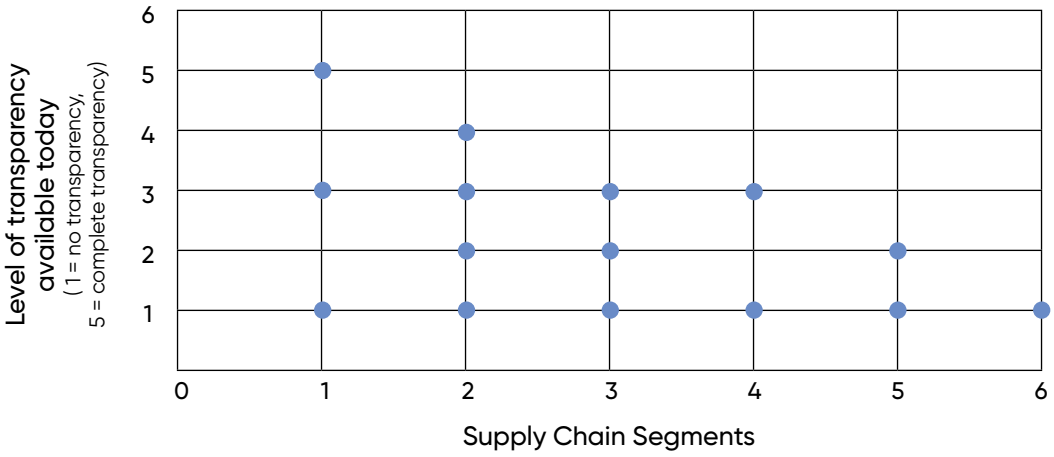
## Chicken Insights:

| Scope 3 Cat. 1 | Scope 3 Cat. 11 | Scope 3 Cat. 12 |
|---|---|---|
| • 3.36 (AGRIBALYSE)<br>• 0.2008 kgCO2eq/kg (FAOstat)<br>• 2.345506361 kg CO2e / kg live weight (Ecoinvent)<br>• Internal LCA | | |

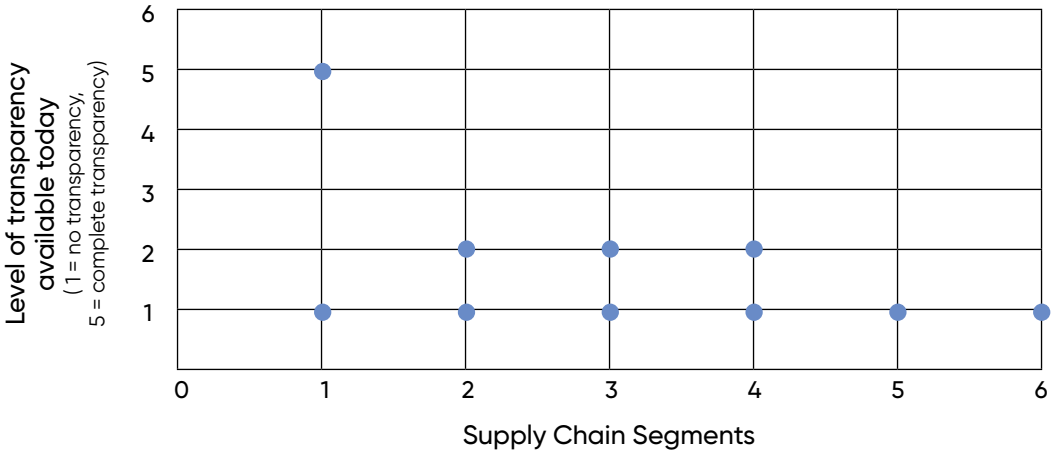
# Supply Chain Transparency

The survey also inquired about how readily available the supply chain data needed to report credible reductions to these emissions factors is. The results indicate a range of insights due to the vastly different supply chain structures and models that exist between animal types.

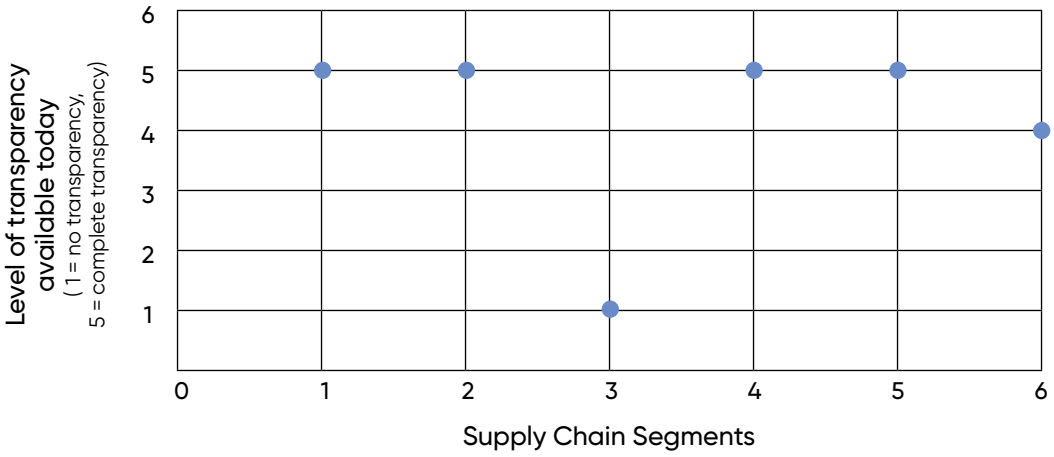
## Beef Transparency Rating




## Pork Transparency Rating




## Chicken Transparency Rating




### Supply Chain Segments

1 primary processing

2 grow/finish

3 breeding/ birthing

4 feed mill

5 feed ingredient supplier

6 field/farm

# Additional Resources Desired

Three key themes were identified that would be most useful for entities to make progress on measuring and improving Scope 3 emissions reductions. These resources will support public, voluntary, and science-based methodologies and do not establish binding industry standards or commercial requirements.

### Consistent Methodology and Supplier Data:

Advance voluntary, science-based practices that enhance transparency and support apples-to-apples comparability in emissions-factor calculations. This effort focuses on shared learning and widely recognized analytical methods so that regionally relevant emissions factors can be evaluated credibly over time, while allowing companies the flexibility to adopt the approaches that best fit their operations and reporting needs.

### Centralized and Accessible Emissions Factor Resources:

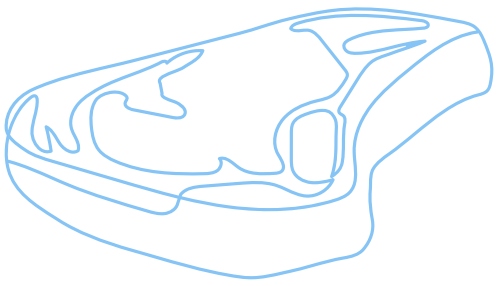
Encourage the use and continued development of transparent, publicly available, science-based resources that support consistent and credible emissions-factor analysis. Companies retain full flexibility to select the tools and datasets that best meet their operations and reporting obligations.

### Forum for Learning:

Continue facilitating peer-peer learning and problem-solving through the Sustainability Committee and Protein PACT so that stakeholders can contribute toward industrywide progress on all facets of Scope 3 challenges.

# Additional Resources to share:

- EDF/Deloitte SBTi FLAG meta analysis
- STBi FLAG Commodity Pathway data in target setting tool
- FAO GLEAM for global data live Animal emission factors (Category 1)
- US EEIO Purchased Goods & Services/ Capital Goods
- AgriFootprint for bulk commodity LCA information
- GOV.UK - Department for Energy Security and Net Zero - Fuel & Energy Related
- Ecoinvent - Scope 3 all categories



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