

The Carbon Cost of Leakage Reduction within the Leakage Emissions Initiative

A Brief Discussion of Scope 3 Emissions

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The Leakage Emissions Initiative has made exceptional progress in the past 8 months. We have set the foundation for a methodology that quantifies carbon emissions throughout the water balance, and we have used that momentum to begin registering the methodology with reputable carbon registries while simultaneously seeking out pilot projects that can serve as a proof of concept. With that being said, the methodology is by no means set in stone. At the onset of this initiative, we committed that the methodology would be an ever-evolving concept that seeks to improve upon real data as the industry continues to learn and grow. Among those evolving concepts is the discussion of how to account for carbon emitted during leak detection and repair. This item has been the subject of much debate and a consensus has yet to be reached on the best course of action in accounting for these emissions however, there are several carbon industry resources that we should be aware of which clearly set a precedent on how other industries approach similar Scope emissions.

First it is imperative as a group that we understand emissions scoping as viewed by the carbon accounting industry at large. Emissions are scoped in three, numbered, categories. Scope 1 emissions are direct emissions that an organization produces while operating their assets that emit carbon. Scope 2 emissions are indirect emissions created by the production of energy that an organization purchases to operate assets. Scope 3 emissions are indirect emissions generated by an expansive list of other sources not included in a company's scope 1 or scope 2 profile. This includes items such as purchased goods and services, capital goods, transportation, employee commuting, use of sold products, etc. etc. The World Economic Forum has an excellent write up concerning this on their website¹.

The carbon cost of repairing leakage is clearly scope 3 and while reducing scope 3 emissions is important, it is counterintuitive to our methodology which focuses on Scope 1 and Scope 2 emissions. More importantly, methodologies in a vast majority of carbon offset generating protocols do not account for Scope 3 emissions while generating carbon offsets for sale and retirement in the open market. This is an important note during the LEI program as one of the vital end results is the ability to generate offsets known as Carbon Leakage Credits (CLCs) to help financially support water utilities in their efforts to decarbonize and update important assets and infrastructure.

¹ "What Is the Difference between Scope 1, 2 and 3 Emissions, and What Are Companies Doing to Cut All Three?" WEFForum.Org, www.weforum.org/agenda/2022/09/scope-emissions-climate-greenhouse-business/. Accessed 31 May 2023.

Overview of GHG Protocol scopes and emissions across the value chain

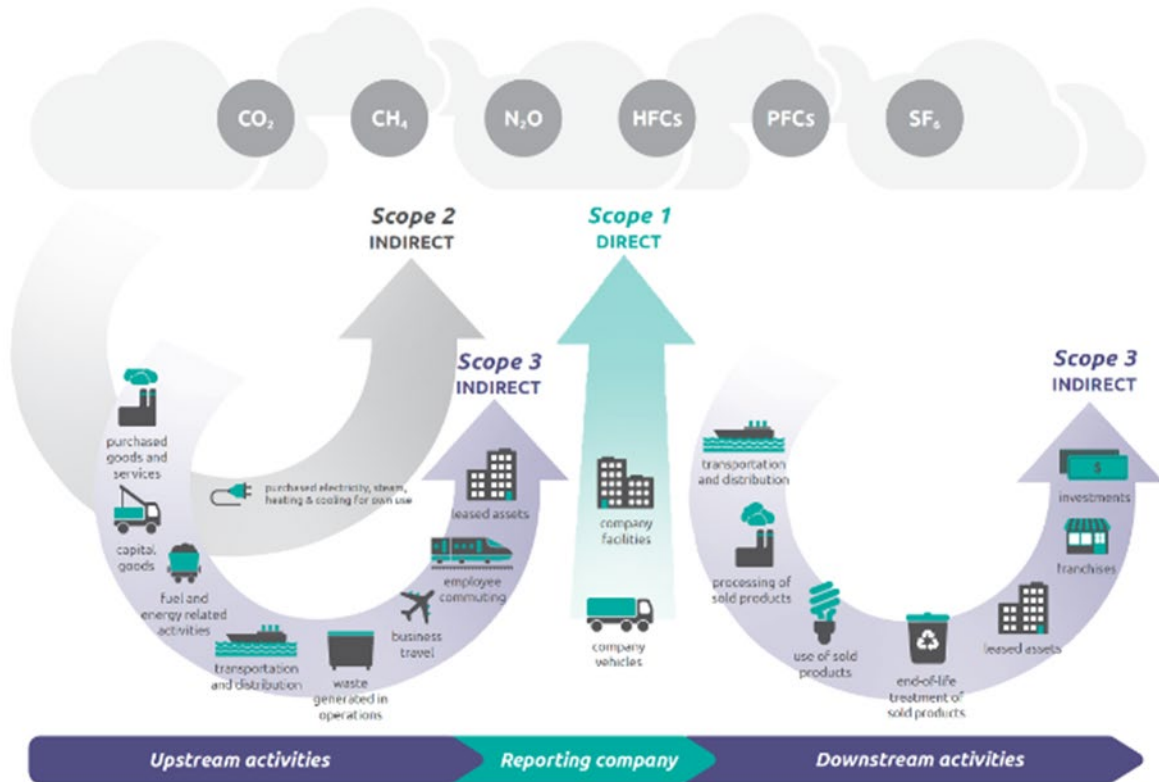


Figure 1 Image Credit: United States - EPA, <https://www.epa.gov/climateleadership/scope-3-inventory-guidance>

It is also worth noting that accounting for scope 3 emissions is far and away the most difficult scope for organizations to account for since it essentially acts as a catch all category for all emissions not included in scope 1 or scope 2. The expanse of variables that exist within any organizations scope 3 profiles would require an extremely intense investment of time and resources for a calculation that is highly subject to inaccuracies. Simply put, accounting for those emissions in our Leakage Emissions Program is a complicated exercise that will ultimately reduce the accuracy of the methodology. Simultaneously, implementing impartial scope 3 considerations will only reduce the accounted carbon additionality which leads to less offsets generated, and less projected revenue to strengthen a utility's business case for enacting real loss improvements.

While Scope 3 emissions are important, and we should strive to reduce them as best as possible, It incorrectly assumes responsibility for another entity's emissions as if they were the utility's own. An alternative consideration is that programs prioritize the enactment of as many low carbon emitting solutions as possible. This includes prioritization of improvements such as pressure management solutions, technical training, and other solutions that may be conceived in the future. When project Utilities and their project teams have exhausted their low carbon options, prioritization can then be shifted to purchase leakage reduction goods and services from partners who are doing their part to reduce their Scope 1 and Scope 2 emissions. A litany of alternatives exists for companies of all sizes to decarbonize their services and supply chains.

It is equally important to note that the LEI program was created not only to help track carbon emissions but to also incentivize participation by utilities by generating CLCs. This will deliver the most positive impact to utilities in under privileged, underserved, and developing communities who are most disadvantaged when it comes to resource access. We as an initiative must not assume sole responsibility for our vendors and service suppliers' emissions since in most cases, many of these repairs and improvements are necessary and often have not been enacted due to the aforementioned resource constraints.

We should also understand that this methodology is an action where the drinking water industry is entering carbon space, and not the other way around. As such, we should seek to understand and adhere to industry standards as they exist. Solving scope 3 emissions is a monumental undertaking and not one that our initiative or industry should seek to tackle on its own. Several resources exist from trusted decarbonization leaders including world renown universities, climate, industry, and scientific thought leaders, governmental bodies, and accounting majors to name a few. Please see below for just a small portion of these existing resources which can serve as a good base from which to begin.

GHG Protocol- https://ghgprotocol.org/sites/default/files/standards_supporting/FAQ.pdf

https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf

World Economic Forum - <https://www.weforum.org/agenda/2022/09/scope-emissions-climate-greenhouse-business/>

EPA- <https://www.epa.gov/climateleadership/scope-1-and-scope-2-inventory-guidance>

<https://www.epa.gov/climateleadership/scope-3-inventory-guidance>

National Grid - <https://www.nationalgrid.com/stories/energy-explained/what-are-scope-1-2-3-carbon-emissions>

Carbon Trust - <https://www.carbontrust.com/our-work-and-impact/guides-reports-and-tools/briefing-what-are-scope-3-emissions>

Climate Partner - <https://www.climatepartner.com/en/scope-1-2-3-complete-guide>

Deloitte - <https://www2.deloitte.com/uk/en/focus/climate-change/zero-in-on-scope-1-2-and-3-emissions.html>

Yale - <https://sustainability.yale.edu/priorities-progress/climate-action/greenhouse-gas-emissions/scope-3-emissions>

PWC - <https://www.pwc.com/us/en/services/esg/library/scope-3-emissions.html>

IBM - <https://www.ibm.com/topics/scope-3-emissions>

American Chemical Society - <https://pubs.acs.org/doi/10.1021/es901643a>

India GHG Program - <https://indiaghgp.org/explaining-scope-1-2-3>

Stanford - <https://sustainable.stanford.edu/operations/energy-climate/scope-3-emissions>