

MEETING MINUTES

Valuation Technical & Practitioner Committee

Meeting type: VTPC Meeting

Date: November 21st, 2024

Location: Virtual

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This paper has been prepared for discussion of the Valuation Technical and Practitioner Committee (VTPC).

The mandate of the Valuation Technical and Practitioner Committee (VTPC) is to direct, validate, and approve the impact accounting research and methodology produced by the cooperation of International Foundation for Valuing Impacts (IFVI) and the Value Balancing Alliance (VBA). The VTPC has been established under Terms of Reference to ensure independence and multi-stakeholder perspectives.

This paper does not represent the views of IFVI, the Value Balancing Alliance, or any individual member of the VTPC. Any comments in the paper do not purport to set out what would be an acceptable or unacceptable application of impact accounting methodology.

Objective:

- The objective of the meeting was to discuss Adequate Wages and Wage Equity as well as Waste and Circularity.
- An additional objective included a discussion on the provisional 2025 Work Plan.

Meeting Agenda:

Time (Eastern Time)	Topic
9:00 – 9:10 a.m.	Introduction
9:10 – 10:00 a.m.	Adequate Wages and Wage Equity
10:00 – 10:25 a.m.	Waste and Circularity
10:25 – 10:50 am	2025 Work Plan
10:50 – 11:00 a.m.	Conclusion

Welcome and Introduction Updates

- All members of the VTPC (“member” or “members” hereinafter) are welcomed to the meeting and the Chair provided the following comments:
 - It was acknowledged that this is the first full year of the VTPC and the following milestones were highlighted:
 - a) The release of the first official methodology: *General Methodology 1: Conceptual Framework for Impact Accounting*.
 - b) A total of 5 methodologies for public comment period, including the three that are currently ongoing.
 - The Chair asked that the VTPC members promote the public comment periods with their networks to increase the quantity and quality of feedback.
 - c) The release of the first Topic Methodology: *Environmental Methodology 1: Greenhouse Gas Emissions (GHG)*.
 - d) The release of the following Interim Methodologies: Air Pollution, Land Use and Conversion, Waste and Water Pollution.
 - The Chair thanked all members for their contributions including the technical staff of both IFVI and VBA.

Update – Framework for Industry-specific Product impacts

- The technical staff provided the following updates:
 - a) The Framework for Industry Specific Product Impacts has been approved for public comment.
 - b) Voting via virtual ballot has resulted in a vote of 10 in favor, 1 against, with 2 abstentions.
 - c) Concerns have been raised from declining and abstaining VTPC members related to framing of the reference scenario and the risk of double counting.
 - d) The technical staff will continue conversations regarding these issues and will include them as areas of focus for the public comment period.
 - e) VTPC Voting Members who have not yet voted are encouraged to still input their vote for the public record.

Adequate Wages & Wage Equity: Part 1

- The technical staff provided a summary of the previous Q3 VTPC Meeting:
 - Method 1: Utility of Income (UI)
 - a) Step 1: Impact drivers
 - Gather data on average wages, by job level and dimensions of diversity
 - Select reference wage (such as wage of highest-paid gender-race subgroup within job level, e.g., white males)
 - Calculate gaps to reference wage for each job level
 - b) Step 2: Measurement
 - Multiply gaps per job level by a 'utility of income' factor (e.g., WUI)
 - c) Step 3: Valuation
 - Multiply outcomes (in WELLBYs) by universal value of a WELLBY
 - Method 2: Social Welfare Function (SWF)
 - a) Step 1: Impact drivers
 - Gather data on average wages, by job level and dimensions of diversity
 - If full wage distribution unknown, assume log-normal shape (common assumption for income distributions)
 - Measure the amount of inequity and inequality at each job level and dimension of diversity using a 0-1 index, where 0 is perfect equality and 1 is perfect inequality (Atkinson inequality index)
 - b) Steps 2 & 3: Measurement and valuation
 - Multiply 0-1 indices by entity's total wage bill to convert into monetary value
 - The result is a deduction (i.e., negative) from entity's SWF
- The technical staff also presented the similarities and differences between the two measurement and valuation methods.
 - Similarities

- a) Both have similar data requirements. Both would likely require some expansion upon GRI and ESRS disclosures due to data-intensive nature of topic
 - b) Both explicitly or implicitly apply a universal value to well-being.
 - c) Both do not stop at pay gaps themselves; instead, they use a measure of pay gaps to calculate the monetary value of inequity.
 - d) UI conducts measurement and valuation in two distinct steps. SWF conducts measurement and valuation in one step. But both (disaggregated or collapsed) accepted by GM 2.
 - e) Both can be applied to Adequate Wages and Wage Equity. Both would still require a decision about whether to recognize any remuneration impact for wages below a living wage.
- o Differences
 - a) UI method is well-established in the impact valuation ecosystem and accepted by users (e.g., WifOR & Deloitte use UI in their gender pay gap methodologies).
 - b) SWF method is well-established in academia, public sector, and among international organizations. In impact valuation ecosystem, SWF has been tested out by Bridgewater Associates only.
 - c) Any UI approach faces same mathematical incompatibility critique as Adequate Wages faces on the WUI and WELLBY functions. SWF more sound, accurate, and uses a consistent default reference scenario.
 - d) UI aligned with current version of Adequate Wages Methodology. SWF would align all wage impacts (Remuneration, Living Wage Deficit, Wage Equity, Wage Equality) in a common framework.
 - e) UI may be easier for corporations and investors to understand. SWF requires some mathematical abstraction.
 - Thereafter, the technical staff provided updates on wage impacts research since Q3 VTPC meeting in response to the VTPC feedback:
 - o Takeaways from VTPC Meeting

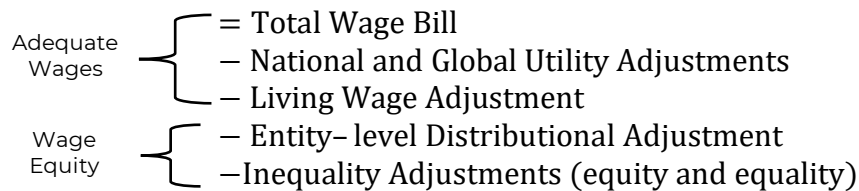
- a) Regardless of whether UI or SWF approach is taken, there was a desire to maintain equal valuation of people's well-being across different countries
 - b) Initial reactions to the SWF approach were mixed — some hesitant, some positive — but all voiced an interest in learning more about it
 - c) Regardless of whether UI or SWF approach is taken, there was a desire to resolve the conflicting views on recognizing remuneration impact under the living wage
- o Research activities since VTPC Meeting
 - a) Expert interviews: Engaged with a dozen experts, including companies, investors, academics to learn more about the SWF approach
 - b) Desk research: Reviewed relevant literature and spoke with paper authors about potentially applying their results.
 - c) Adequate Wages stakeholder engagement: Completed "listening tour" with several public comment respondents; soon hosting a virtual roundtable discussion among stakeholders to discuss the issue of remuneration impact under the living wage.
- The technical staff provided an overview of discussion topics of the meeting.
 - o Discussion 1: A closer look at the SWF approach
 - a) Continue discussion started at Q3 VTPC Meeting on potentially taking SWF approach to Adequate Wages and Wage Equity Topic Methodologies.
 - b) Share more technical details about SWF approach, with a focus on utility adjustments, and answer questions from VTPC members.
 - c) Hear VTPC members' perspectives on whether a UI or SWF approach should be taken to the two Topic Methodologies.
 - o Discussion 2: Remuneration impact of wages below the living wage
 - a) Share one of the more salient talking points from Adequate Wages listening tour, which reframes remuneration impact as a "top line" or "gross" impact (from which the cost of workers' time is subtracted to calculate "bottom line" or "net" impact on workers).

b) Hear VTPC members' perspectives on this reframing and its ability or inability to resolve divided opinions on remuneration impact.

- The technical staff provided an overview of SWF approach to wage impacts:

- SWF approach starts with wages received by workers, which already demonstrates value in money terms because wages are exchanged in a market (i.e., *market-based valuation* using GM2 terminology).
- However, a SWF approach recognizes that market-based valuation of wages is insufficient in several ways and therefore makes a series of adjustments, which can be applied across different wage methodologies (Adequate Wages and Wage Equity)

Mathematically, the Total Wage Impact:



- Methodological choices
 - a) SWFs are flexible analytical tools that can accommodate a variety of assumptions. Therefore, within a SWF approach, there are still several methodological choices to make, including:
 - What “utility function” will be used (to relate money to utility)? E.g., a logarithmic function with diminishing marginal utility (DMU) or a linear function with no DMU?
 - If a logarithmic function is chosen, what should its curvature be based on the literature on the elasticity of marginal utility?
 - What value should the inequality aversion parameter take based on the literature on how much society values equality / reducing inequality
 - The technical staff provided an example of wage impact for three firms: low wage, high wage and high unequal and described each

type of adjustment under a SWF approach to Adequate Wages and Wage Equity. All adjustments are described below.

- National/Global Utility Adjustments
 - Method:
 - a) Utility adjustments — at the firm, country, or global level — are a well-established way of determining the utility value of wages from the market value of wages.
 - b) Utility adjustments rest on the widely accepted principle of diminishing marginal utility (DMU), where the utility value of each additional \$1 decreases as income increases.
 - Sources:
 - a) UK Green Book (2022), OECD (2018), US OMB (2023)
 - Data Requirements:
 - a) For each location of an entity:
 - Median wage in the country
 - Median wage in the world
- Living Wage Adjustment
 - Method:
 - a) Aligns with the principle of a living wage as a human right.
 - b) Rests on well-studied theory of poverty traps below the living wage, resulting in an erosion of paycheck value below the living wage.
 - c) E.g., due to credit traps, rental housing traps, etc., workers below the living wage are “hemorrhaging” money from their paychecks rather than accumulating money normally.
 - Sources:
 - a) Balboni et al. (2022), Carr et al. (2018, 2022)
 - Data Requirements:
 - a) For each location of an entity:
 - Number of workers earning under the living wage (partial alignment with ESRS, expands on GRI)
 - Average wage below the living wage
- Entity-level Distributional Adjustment
 - Method:
 - a) Because of DMU, there is some utility forgone when a firm’s total wage bill is distributed unevenly across workers, with

workers who value money highly being paid too little and workers who value money less being paid too much.

b) This adjustment is conceptually identical to national/global utility adjustments but for entity-level (worker-to-worker) differences in marginal utilities.

- Sources:
 - a) OECD / Murtin and Siegerink (2023), Jenkins (1997, 1995), Atkinson (1970)
- Data Requirements:
 - a) For each location of an entity:
 - Lowest wage ESRS (partial alignment with ESRS)
 - Highest wage (partial alignment with GRI, ESRS and full alignment with SEC)
 - Mean wage
 - Median wage (partial alignment with GRI, ESRS, SEC and expands upon GRI)
 - Total number of workers (full alignment with GRI and ESRS)
- Inequality Adjustments
 - Method:
 - a) Rests on assumption that society has some moral aversion to inequality (over and above DMU Adjustment).
 - b) Use Atkinson's inequality index because of its (i) decomposability and (ii) easy interpretation in monetary terms.
 - c) Decomposability into "within- group" and "between-group" inequality enables inequality to be analyzed by job category and gender.
 - Sources:
 - a) OECD / Murtin and Siegerink (2023), Jenkins (1997, 1995), Atkinson (1970)
 - Data Requirements:
 - a) For each location of an entity:
 - Mean wage by job category (entity-wide)
 - Mean wage by gender and employee category (defined by both level and job function)

(partial alignment with GRI, ESRS and expands on GRI)

- Number of workers by gender and employee category (partial alignment with GRI and ESRS)
- The technical staff discussed the theory of applying the utility adjustments which included the following:
 - Theory
 - a) Utility adjustments — at the firm, country, or global level — are a well-established way of determining the utility value of wages from the market value of wages.
 - b) Utility adjustments rest on the widely accepted principle of diminishing marginal utility (DMU), where the utility value of each additional \$1 decreases as income increases.
 - c) The implication of DMU is that a wage paid to a rich person is weighted <100%, and a wage paid to a poor person is weighted >100%, where “rich” and “poor” are defined as generally earning more or generally earning less than the median wage in a firm, country, or the world.
- The technical staff also highlighted that based on the theoretical principles outlined above, the possible implications of utility adjustments could be any of the following.¹
 - Applying the theory of utility adjustments (described above) could have any of the following implications, where each of the Column A cases could be valued *less than, equal to, or more than* the Column B cases depending on the exact construction and calibration of utility weights. Additionally, one or more levels of adjustments could be considered as “optional / additional” elements of the methodology.
 - a) Firm level: \$ 5,000 paid to poorer worker (column A) may be valued less than, equal to, or more than \$ 10, 000 to richer worker (column B).
 - b) Country level: \$5M wage bill for firm with poorer workers (column A) may be valued less than, equal to, or more than 10M wage bill for firm with richer workers (column B).

¹ Applying utility weights according to the standard consensus procedure used by researchers, governments, and intergovernmental organizations and adopting $\lambda=1.26$ as the rate at which marginal utility diminishes, based on Layard et al. 2008 and aligned the GHG Emissions Topic Methodology (Final) and AW Exposure Draft, would result in the cases in Column A being valued higher than the cases in Column B.

- c) Global level: \$5M wage bill for firm in Nepal (column A) may be valued less than, equal to, or more than \$10M wage bill for firm in the Netherlands (column B)

Adequate Wages & Wage Equity Discussion: Part 1

- Members provided the following comments:
 - A member expressed the following:
 - a) They liked the incorporation of the OECD's social welfare approach into the methodology due to its robustness and its relation to economic theory, which is very important.
 - b) The possibility of simplifying the first few adjustments (national utility adjustment and global utility adjustment) by using Purchasing Power Parity (PPP) instead, which will ensure comparability across countries.
 - c) For the last two adjustments (living wage adjustment and entity-level distributional wages), if a company increases wages by the same amount for workers with lower salaries, the impact could be greater for those workers. These results may look strange, but at the same time, companies will likely recognize that their actions have a more significant impact on workers with lower wages.
 - d) Overall, this concept should be simplified to make it easier for companies to understand.
 - A member raised the following:
 - a) A company with good intentions would understand that by increasing the salaries of lower paid workers, there is a greater impact on their well-being.
 - b) However, a company could also ask, why don't we increase the salaries of higher paid workers to make as big a contribution to their well-being?
 - c) Overall, the explanation is clear and could drive important decisions in a company.
 - A member raised the following:
 - a) How are the results different when applying the Utility of Income (UI) approach versus the Social Welfare Function (SWF) approach?
 - b) How does this methodological shift change decisions within organizations?
 - This concept is implying that the impacts of a lower paid salary worker is more important than a higher paid salary worker. Is there enough evidence to support this idea? Does this make sense when

talking to the board of a company? How would they react to this?

- o The technical staff voiced the following:
 - a) There is overlap between global utility adjustments and PPP adjustments. Global utility adjustments covers how the utility of a dollar varies across different countries, whereas PPP focuses on trying to isolate the influence of difference in price levels. PPP may be seen as more pragmatic and more familiar instead of global utility adjustments, which can be an avenue for further exploration.
 - b) Regarding the question of why a company should increase the wages for those at the lower end of the wage distribution rather than at the top end is an interesting point.
 - All impacts stacked together needs to be considered. At the lower end (lower wages), there is a living wage adjustment, which justifies prioritizing the bottom of the distribution.
 - The concept of marginal utility is also important. It can be described plainly as “bang for buck.” If a company allocates the same dollar increase at the lower end of the distribution, the “bang for buck” or utility returned will be higher compared to the higher end. This incentive drives the prioritization of wage increases at the bottom.
 - c) Related to SWF vs UI approaches, there is a parallel to the well-being utility of income (WUI) factors from the Adequate Wages Exposure draft, where there is higher WUI factor for lower income countries and lower WUI factors for higher income countries. The dynamics of both approaches are the same, the quantitative results may be different. However, a better question could be, which approach does a better job in reflecting the truth?
 - d) Related to the question of the impacts of lower paid workers being more important than higher paid workers, the main driver is utility adjustments. The marginal utility of a poor individual is going to be higher. There is evidence supporting the diminishing marginal utility phenomenon and this approach has been incorporated among governments, academia etc.

- e) An important note is that there is living wage adjustment for workers paid below a living wage that is negative.
- o A member voiced the following:
 - a) The concept of diminishing marginal utility is clear. However, if a worker is paid \$1,000 per year, they only have the utility of \$1,000 to spend, how can that be \$2,000? How do they get the boost?
 - b) The technical staff stated that the key focus is on utility, not taking the market value of wages at face value. A focus on utility allows us to not take \$1,000 as equal to \$1,000 and sum up over all workers who receive wages, but rather the utility value of \$1,000 depends on who is receiving the money.
- o A member asked to what extent PPP or inflation is taken account into the national global utility adjustment.
 - a) The technical staff responded with the following:
 - Both approaches, UI versus SWF approach have been looked at a higher level and such practical questions have not been explored yet. Now may be the time to begin tackling those practical questions.
 - For the previous Adequate Wages Exposure Draft, there are guidelines available for ensuring that the living wage benchmark used accurately reflects all the necessary adjustments to a paycheck.
 - There will be further research into the construction of different utility weights, but typical approaches include GDP per capita or GNI per capita with PPP adjustment.
- o A member asked about the beneficiaries for each approach.
 - a) The technical staff responded with the following:
 - At one level, the affected stakeholder is the individual worker who is receiving a wage. What the SWF approach allows the methodology to do is also take a societal perspective. Under a SWF approach, wages can be adjusted for society's aversion to inequality at a moral level.
 - The macroeconomics effects are not included in the current construction of the adequate wages and wage equity methodologies.

- When referring to individuals in society, there is an assumption that we are referring to a broader societal impact. Sometimes, there is a focus on the broader society, but where appropriate, impact pathways are designed to look at Individual impacts. This is outlined in the General Methodologies.
- A member asked whether the data requirements of company would be different with either a UI or SWF approach.
- The technical staff voiced that both approaches have similar data requirements. The technical staff stated that they have spoken directly with practitioners about the feasibility of data requirements and received feedback that such data are generally available. A company's willingness to disclose that data is always a question but alignment with standards such as ESRS, GRI, SEC etc. helps with disclosure.
- The technical staff acknowledged that further conversations are necessary pertaining to the Adequate Wages & Wage Equity methodology and thanked members for their feedback.

Adequate Wages & Wage Equity: Part 2

- The technical staff discussed the second topic - Remuneration impact of wages below the living wage which included the following:
 - A matter of top-line (gross) vs. bottom-line (net)
 - a) Adequate Wage Exposure Draft acknowledged its scope is limited to one side of the labor-for-wage/wage-for-labor transaction. Dissenting comment letters stressed importance of accounting for workers' "counterparty effort, time, and dedication" provided in exchange for a wage when critiquing remuneration impact.
 - b) The most conceptually accurate response to this could be to subtract counterparty costs when producing statements like integrated profit and loss (IP&L) accounts, recognizing a difference between 'top line' and 'bottom line' impacts. This approach would be aligned with:
 - Ecosystem methodologies such as the Impact Institute
 - Financial accounting, where revenue (top-line) has costs subtracted to calculate profit (bottom-line).
 - Potential needs of industry-specific product impacts, where prices paid in exchange for the product would be subtracted to calculate bottom-line product impacts.
 - An example was provided illustrating the applied top line and bottom-line thinking: Prototype of impact-weighted account statement.²
- The technical staff provided a set of calculation for the top versus bottom line impacts in adequate wages and noted the following:
 - The set of calculations shown represent the application of a top line and bottom-line concept to the Adequate Wages Methodology, while maintaining the ability to distinguish between each step of the calculation (preserving distinction between remuneration and living wage impacts), in line with analogous distinctions between revenue / profits in financial statements.

²Example shown is from the Framework for Impact Statements, Impact Institute

- For consistency, the calculations could also apply to other methodologies where impact is based on 'exchange' – including industry-specific product impacts where a consumer experiences the impact of a product but pays a price for that exchange.
- Employee Time Value
 - a) In a top/bottom line approach, "value exchanged" for wages approach could be calculated in a variety of ways, including:
 - Reservation wage: Generally defined as the wage that, if lower, workers would no longer be willing to work for the entity. While conceptually important, data on actual reservation wages are very limited.
 - Living Wage: Adopting a human rights approach, the calculation could be based on a living wage regardless of personal circumstances – acknowledging the 'value' of workers' time as universal.
- A combination of these approaches, or alternatives, could be used while maintaining the spirit of the principles outlined above.

Adequate Wages & Wage Equity Discussion: Part 2

- Members provided the following comments:
 - A member voiced the following:
 - a) Whether the idea is about reporting two numbers: net and gross value of Adequate Wages. They noted that they understand the rationale, but it is confusing from a presentation perspective.
 - b) Whether there are current data sets related to reservation wages.
 - The technical staff noted that while reservation wages might be considered the most conceptually appropriate approach, there will be data limitations to it and other alternatives will be considered.
 - c) How does this approach get to poorer wages?
 - The technical staff noted that a potential implication of this approach is that once employee time value is calculated and subtracted from a gross value, in circumstances where an employee's wages are low it could present the net value of the impact of those wages as negative.

Waste and Circularity

- The technical staff provided an overview of the Waste Interim Methodology which included the following:
 - The Waste Interim Methodology serves as a foundation to identify areas for potential expansion or improvement and take it through Due Process with the guidance of the VTPC.
 - Today's conversation will focus on potential updates to the impacts considered with a deeper dive on two updates to marine plastics and future resource costs.
 - There are still open areas of research around data requirements and attribution of each impact that were highlighted at the previous meeting. These will be further discussed in the future.
- The technical staff provided an overview of the following proposed updates to the Interim Methodologies and emphasized that the focus of the meeting would be Marine Plastics Impacts and Future Impacts of Used Non-renewable Resources (Circularity Principle).
 - Interim Methodology
 - a) Leachate (Landfill Only)
 - Overview: Liquid released from landfills infiltrates water sources leading to health-related impacts.
 - Potential Updates: Update costs from cleanup cost to an approach that more directly measures health valuation.
 - b) Disamenity
 - Overview: Visual intrusion, Odor, noise, and pests from proximity to waste sites reduces well-being.
 - Potential Updates: Probe improvements to the valuation approach (hedonic pricing function) and the role of population density.
 - c) GHGs (Landfill CH₄; Incineration CO₂)
 - Overview: The GHGs released from landfills and incineration are valued based on the impacts in the GHG Methodology
 - Potential Updates: Minor updates to emission calculations approaches.
 - d) Waste Air Pollution, Heavy Metals, & Dioxins (Incineration Only)

- Overview: Incineration reduces air quality causing health impacts, reduced visibility, and affect agriculture.
 - Potential Updates: *Explore updates to WTP valuation and minor updates to gas emission factors.*
- New Impacts
 - a) Marine Plastic Impacts
 - Overview: Plastics released from mismanaged waste end up in waterways driving ecosystem service-related impacts
 - Potential Updates: Use the foundations of WWF analysis with significant updates to probability of plastic entering the ocean and linkages between lost ecosystem services and plastics.
 - b) Future Impacts of Used Non-renewable Resources (Circularity Principle)
 - Overview: The present use and waste of materials increases impacts to access materials for future generations
 - Potential Updates: Use the foundations of Huppertz et al. (2019) and the LCA literature to value future impacts of present resource use.
 - c) Land Use Impacts from Resource Use (*Circularity Principle*)
 - Overview: The land needed for extraction, landfills, incineration sites, and recycling facilities drive reduced ecosystem service impacts from land.
 - Potential Updates: Establish the linkage between tons of material and land area needed then use the Interim Land Use approach to valuing lost ecosystem services.
 - d) Bottom Ash Impact (Incineration Only)
 - Overview: Incinerated material leads to some solid material that, when disposed, augments landfill related impacts.
 - Potential Updates: Develop the relationship between material incineration and weight of solid material then apply landfill VFs to that component.

- The technical staff proceeded to discuss the following about Marine Plastics Waste:
 - a) A significant amount of waste is mismanaged or leaks into the environment. While some impacts from mismanaged waste may be difficult to value, one has recently developed enough to potentially explore marine plastic waste.
 - b) Marine plastic waste has the potential to be a very large material impact and has increased in public focus in recent years. The upcoming EU packaging regulations and plastic's prominence in ESRS E5 reinforce the importance of the topic.
 - c) Desk research has revealed a promising foundational analysis first developed by WWF and subsequently used by WifOR that determines impacts of plastics using an ecosystem services approach.
 - Step 1: An entity reports waste generated along with the location of that waste
 - Step 2: Assess the likelihood that plastic leaks and arrives to waterways
 - Step 3: Determine the impact each marginal ton of plastic in ocean and the change in ecosystem service value
 - d) The technical staff noted that upon review, opportunities for updates exist for steps 2 and 3 included the following: improve the precision of the analysis and apply country-specific impacts instead of a global value.
- Furthermore, the technical staff focused on Step 2 and 3 and noted the following:
 - Step 2: Likelihood that plastic gets into waterways
 - a) WWF Analysis
 - Uses global estimates of:
 - Plastic production (368 million tons)
 - Proportion that becomes waste (70%)
 - Proportion leakage (4%)
 - Multiplies these values to estimate the plastic flows into the ocean.
 - b) Proposed Improvements

- Are there more country-specific approaches that determine plastic leakage rates?
 - Yes, Meijer et al. 2019 (and associated literature) produce country-specific likelihoods of leakage based on:
 - Mobilization of waste out of landfills (precipitation and wind),
 - Transport processes to rivers (land use, slope, distance to river),
 - Transport processes to ocean (stream order, river discharge, and distance to mouth of river).
 - There are also improved country-specific statistics of waste production and leakage that consider infrastructure and consumer behavior.
- Step 3: Impact relationship between plastics and ecosystem services
 - a) WWF Analysis
 - Extracts the value of all ecosystem services (ES) from the ESVD for coastal and marine ecosystems.
 - Multiplies these values (per ha) by the total global area of oceans or coastal systems (\$49.7 trillion 2011 USD).
 - Determines that plastics lead to a 1% reduction in ecosystem services based on a postulation from Beaumont et al. 2019.
 - Divides this by an estimated tonnage of plastic waste in oceans (\$4,085 - \$8,171 per ton, per year 2019 USD).
 - b) Proposed Improvements
 - Are all ecosystem services affected equally by plastic waste?
 - Likely no. For each ecosystem service, review literature and consult experts on possible inclusion in analysis.
 - Do plastic impacts affect all areas of the ocean equally?

- Likely no. Assess spatial distribution of plastics relative to ecosystem services provided to determine differential impacts on each area of the ocean.
 - Does a constant 1% impact on ecosystem services best capture the relationship between plastic and ecosystem services?
 - Likely no. Review literature on relationship between various ecosystem services and plastics
- The technical staff proceeded to discuss the following about the Future Impacts of Used Non-renewable Resources.
 - a) Based on desk research and consultation with circularity practitioners, the technical staff believes that the most significant circularity impact that was not captured in the Interim Waste Methodology is the impact of present waste or recycling on the ability to access resources for future generations.
 - b) This impact is defined as the present use and waste of materials decreases the availability of this natural capital for future generations.
 - c) The future environmental impacts associated with resource use is well-established in life cycle assessment (LCA). However, the quantification methods are very diverse, disparate, and address a wide range of questions. This is a challenge for practitioners.
 - d) As a result, the UN Environment Program hosted an expert task force to organize, describe, and recommend standardized methods.
 - e) This culminated in the launch of the Global Life Cycle Impact Assessment Method (GLAM) launched in October 2024 and proposing the method to be discuss today.
 - This culminated in the launch of the Global Life Cycle Impact Assessment Method (GLAM) launched in October 2024 and proposing the method to be discuss today.
- The technical staff also discussed the Future Resource Impacts in LCAs which included the following:
 - Different measurement methods in LCA

- a) Depletion Methods: Measuring the risk of running out of mineral resources in the long term.
 - b) Supply Risk Methods: Assessing how accessible resources are in the short term, considering factors like political stability and economic conditions.
 - c) Thermodynamic Accounting Methods: Calculating the energy required to extract and produce a mineral or product based on thermodynamic principles.
 - d) Future Efforts Methods: Evaluating how the current use of resources might affect their availability for society in the future.
 - e) Economics Methods (a subcategory of Future Efforts Methods): Estimating the economic impact by looking at market prices and resource availability. These approaches (LIME2 (endpoint) and Future Welfare Loss) align with the impact account framework and were analyzed further.
- The technical staff discussed the future welfare loss method which included the following:
 - This method begins with the *market price* of a resource as it takes into account:
 - a) The opportunity cost of the resource in the future
 - b) Reserve stocks of that resource
 - c) Evolution of the cost of extraction
 - But the market, along with market discount rate, does not explicitly take into account the impacts (externalities) on future generations (i.e. the market price differs from the “socially optimal price”).
 - However, the social discount rate is meant to capture these externalities and can be used to determine the cost of resource use.
- The technical staff also discussed the advantages of the Future Welfare Loss Method which included the following:
 - Market prices provide reliable information about resource value factoring in availability, use value, and market substitution.
 - Explicitly considers impacts on future generations through the social discount rate.

- Aligns with the future impacts (social discount rate) approach taken in GHG, water consumption, and other social methodologies.
- Has been recommended by a panel of experts (UN EP Life Cycle Initiative) as the preferred approach to measure future resource impacts.
- The technical staff provided an example illustrating the Future Welfare Loss Method which included the following parameters market price, social discount rate, market discount rate, time, cost of extraction and net price and stated the following:
 - First the net price is determined based on the current market price and cost of extraction.
 - Based on the market discount rate, that price is projected into the future to the time of depletion.
 - Then the social discount rate (which will be lower than the market discount rate) can be projected back to the present to determine the present externality associated with current resource use.
- The technical staff provided a synthesis of the proposal and discussion:
 - Marine Plastic Proposals
 - a) Likelihood of plastic to waterways:
 - Use Meijer et al. 2019 to produce more representative country-specific likelihoods of leakage of plastics.
 - b) Relationship between plastics and ecosystem services:
 - Revise valuation to accurately reflect which ecosystem services are affected by plastic, what area are plastics likely to impact, and the shape of the relationship.
 - Future Resource Impacts
 - a) Use the Future Welfare Loss Method (Huppertz et al. 2019) to value future impacts of current waste and circularity flows.
 - Conduct additional research to determine preferred approach to key parameters such as market price and market discount rate.

Waste and Circularity Discussion:

- Members provided the following comments:
 - A member voiced the following comments:
 - a) A reinforcement that the potential updates being proposed are similar to the limitations heard from others about the WWF method.
 - b) There is a clear linkage between waste and plastic but also much of it is coming from the use-phase into oceans as well.
 - c) There is concern about the lack of specific input company data on waste, for example, kg of plastic produced.
 - d) The impact for most companies would be downstream because majority of the waste such as packaging is ending in the ocean.
 - e) The methods proposed seem to be a focus on abiotic, non-renewable resources, implying that this approach would not be used for other resources. Interest was expressed about an application for things such as coal or oil as well as more renewable resources
 - f) This method would set a global price for resource use but there may be approaches that allow for country specific application in some way.
 - A member asked whether there are discussions related to how to value micro vs macro plastics separately. Additionally, to complete the impact pathway, whether human health impacts of microplastics should be included even though there are concerns about the amount of research definitively linking plastics to health impacts. Related to both approaches, the member also posed the question, at what point is data not good enough to be included.
 - A member voiced that there is a big concern about direct human health from leaching plastic from consumer products. While even a few years ago this linkage was less obvious, there is now a lot of evidence, the methodology should explore a linkage to health.
 - The technical staff responded with the following:
 - a) From earlier analysis, there is direct impact on human health. However, the magnitude of those impacts are less clear. There is a publication called the [Minderoo-Monaco Commission](#) that tries to address the monetary valuation of

plastic impacts using simple evaluation approaches like the WWF approach for ecosystem services. This research will be further explored.

- b) The Future Welfare Loss Method focuses on non-renewable resources such as metals and minerals, but further research into data availability may drive the ability to include this aspect.
 - c) Although there is existing research, there is not enough evidence to be able to separate micro vs macro plastics at this point.
 - d) The research into the data availability for companies is still ongoing. However, if data for some of these factors is not readily available in a company's portfolio right now, it will be more accessible in the near future. There is momentum on this topic, and providing value factors may drive progress.
 - e) The Future Welfare Loss Method uses global prices not related to how it varies across countries, a PPP adjustment might be required. This is a limitation of this approach.
- o The technical staff voiced the following:
 - a) It seems like there is a judgment call to be made on a topic like plastic, where there are varying degrees of confidence in underlying research. This leads to three different options.
 - Not incorporating plastic waste at all – if some of the impacts have insufficient research.
 - Incorporating only the part of plastic waste impacts that we believe is sufficiently measured.
 - Incorporating the full impact of plastic waste, including health effects and ecosystem services.
 - o A member voiced that when using multiple methodologies to assess different types of impacts, the natural conclusion is to make comparisons. However, if there is a higher degree of uncertainty, it becomes a problem. This is because no one is necessarily diving into the details to fully understand the differences, making it difficult to make meaningful comparisons.
 - o A member voiced that there is evidence to support the direct impacts of plastics on human health whether it be through food, water and/or cosmetics. Additionally, there is growing evidence that plastics negatively impact reproductive health as well.

2025 Work Plan

- The technical staff discussed the key lessons from 2024 which included the following:
 - Operational
 - a) Importance of regular VTPC engagement and input led to additional VTPC meetings added to the calendar – can be addressed more pro-actively
 - b) Post public comment period VTPC discussion (prior to revised draft proposal) provided valuable guidance to the team
 - c) Flexibility in workplan remains necessary to adjust based on research uncertainties, public comment feedback, etc.
 - d) Pre-exposure drafts for written review by VTPC important component of process to ensure detailed opportunity for input beyond meeting discussions on specific issues
 - e) High quantity of methodologies (7) are already in process with development extending into 2025
 - Strategic
 - a) Methodology development needs to be further complemented with supplemental research to advance awareness and usage of the methodologies – articulating the benefits of impact accounting, use cases, etc.
 - b) Framework for industry-specific product impacts enable wider exploration of product and industry specific methodology development, not constrained by the VTPC due process
 - c) Interim methodologies enable wide coverage of environmental topics, with importance of further methodology development more significant on social impacts
- Thereafter, the technical staff discussed the following proposals:
 - Operations
 - a) Adjust VTPC meeting schedule to every other month, rather than quarterly (February, April, June, August, October, December)
 - b) Proxies can help manage additional time commitments
 - Ongoing Methodologies

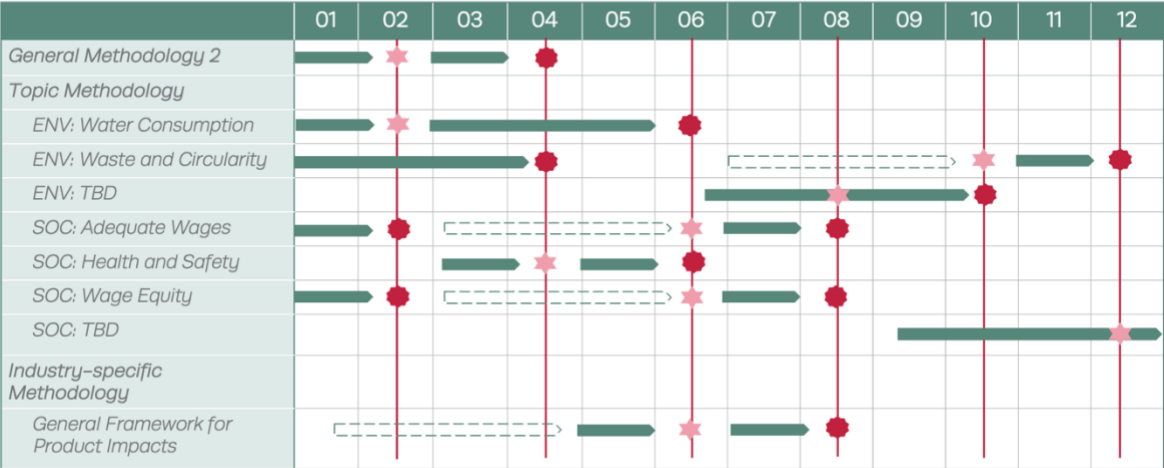
- a) Plan to complete all seven active methodologies in 2025 (pending public comment feedback, approvals, etc.)
- o New Methodologies
 - a) Launch two new official methodologies in second half of 2025: one environmental and one social. Environmental is expected to be a revision of one of the remaining interim methodologies
 - b) With release of workplan and architecture, request public input to inform selection of the methodologies to begin.
 - c) Initial proposals from the Technical Staff include:
 - Environmental: Land Use and Conversion
 - Social / Economic: Child and Forced Labor, Training and Education, or Taxation
- o “Applied” Research (Non VTPC Research)
 - a) Initiate a series of applied research papers that support the development of the Methodology and aligned with IFVI’s and/or VBA’s theory of change.
 - b) Topics may include industry-specific prototypes based on GM1, GM2, and the Framework for Industry Specific Product Impacts, and additional research on the use cases and applications of impact accounting, among other topics.
 - c) Additional details are provided on a later slide.
- The technical staff provided a summary of the applied research themes and opportunities which included the following:
 - o The following are examples of ‘applied research’ topics that could be developed. Their development will occur outside of the official due process and VTPC oversight but may inform future official methodologies (for instance GM3). They will be developed by IFVI and VBA in coordination, independently, as well as with other prospective collaborators. VTPC members are welcome to indicate interest in collaboration and providing feedback.
 - a) Insights of Impact Accounting
 - Real-world applications: Takeaways and insights from applying the impact accounting methodologies we’ve developed. This topic asks what do the results tell us when we measure impacts using real-world data, and do the results vary by company size, geography, and/or industry, among other variables.

- Links to financial performance: An exploration of the empirical linkages between the value to society measured by impact accounting and the financial performance of entities.
- Industry-specific prototypes: Apply the Framework for Industry-specific Product Impacts and build on GM1 and GM2 to develop prototypes that can be applied using publicly available company and third-party data. Such prototypes would provide an important step towards measuring an entity's total societal impact including impacts from the use of goods and/or services downstream.

b) Applications of Impact Accounting

- Use cases of impact accounting: What are the use cases for impact accounting, in other words, what are the specific operational, strategic, and sustainability-related decisions that can be informed by impact information? This topic may also explore adjustments that can be made to impact information to inform decisions that are highly context specific.
 - Models for impact analysis: Develop examples of models and types of analysis that utilize impact information. Examples include impact forecasting, net present value of cash flows and impacts over time, and impact profit and loss statements.
 - Risk, return, impact paradigm: Expounds upon the conceptual question that guides the development of the Methodology, namely, what is meant by a transition from a risk/return paradigm to a risk/return/impact paradigm. What are practical examples of how the three can be combined to optimize stakeholder value.
- Finally, the technical staff provided an overview of the provisional 2025 Work plan, which may be updated as necessary.

2025 Workplan – Draft



- The technical staff asked for questions or concerns about the proposed work plan, no questions or concerns were raised.

Conclusions and Next steps

- To conclude the meeting, the technical staff provided the following updates:
 - VTPC meeting minutes will be sent out next week for review along with the 2024 VTPC Engagement Survey.
 - Asked that the VTPC members promote the public comment period within their networks.
 - 2025 meeting scheduling is forthcoming in the upcoming weeks.
- The technical staff thanked the members for their participation, and the meeting was concluded.

Appendix A: Attendance

VTPC Members		
Name	Attendance	Representative (If Absent)
George Serafeim (Chair)	Present	
Sonja Haut (Vice Chair)	Present	
Mohammed Abdulrahman Al-Akil	Absent	
Tom Beagent	Present	
Dr. Duoguang Bei	Absent	Xu Hu
Jens Berger	Present	
Sarah Bratton Hughes	Present	
Adrian De Groot Ruiz	Absent	
Christian Hell	Absent	
Klaus Hufschlag	Absent	
Amma Lartey	Present	
Jun Suk Lee	Absent	
Kelly McCarthy	Present	
Crystal Pay	Absent	Beate Stuis
Dr. Amanda Rischbieth AM FAICD	Present	
Dr. Marta Santamaria	Present	
Pavan Sukhdev	Absent	
Sebastian Welisiejko	Absent	Emilia Cerra
Observers:		
Yulia Romaschenko	Present	
Richard Scholz	Absent	Daniel Croner

Technical Staff	
Name	Organization
Dan Osusky	IFVI
Carter Berry	IFVI
Tamsin Chen	IFVI
Mosunmola Olowu	IFVI
Marah Mohamed	IFVI
Marc Rosenfield	IFVI
Michael Verbücheln	VBA
Francisco Ortin Cordoba	VBA