SGA Standard: Scope 3 issues briefing paper

1st August 2024

Background

The SGA is producing a sector-specific standard for the games industry to provide clarity for game businesses on how to measure the GHG impact of the games production process. The standard development process has started with Scope 1 and 2 measurement and guidance, emissions which are the most direct responsibility of organisations themselves. Scopes 1 & 2 also have good existing knowledge and fairly widespread consensus on methodologies for measurement. With input from leading ESG professionals in the games industry, the Scope 1 & 2 standard has achieved a high level of detail, and with the SGA now able to accept members, we can begin the process of working through the bulk of the remaining work. This will be the more challenging part of the SGA Standard, addressing emissions from across the entire value chain of the games production process. There is a wide variety of approaches and much inconsistency across the industry in both drawing boundaries, selecting inclusion/exclusions for GHG inventories, and even in methodology for calculating different major and minor parts of Scope 3 impact.

Existing Resources, Standards, and Limitations

The GHG Protocol corporate standard is the de facto standard for corporate emissions accounting, and the GHG Protocol Value Chain Standard (Scope 3) provides a framework and technical guidance for emissions reporting. Both of these standards however are not designed with the games industry in mind and often require interpretation or a high level of expertise to apply. Furthermore confusion over how to apply the various elements of the GHG Protocol standard has led to a situation where corporates are currently free to "pick and choose" which elements of the value chain to disclose, and where to draw boundaries.

The European Union introduced the ESRS in 2024 which goes beyond both GHG Protocol, requiring further detail, data points, and disclosures beyond greenhouse gas emissions,

covering a wide range of ESG issues, involving a high degree of complexity and potentially representing a high burden for compliance.

The Science-Based Targets Initiative (SBTi) is a key standard setter for corporate target setting, and submitting targets and transition plans to SBTi is a key aspiration for many corporates, providing a high degree of legitimacy to sustainability strategy. The nexus between sustainability targets and sustainability impact accounting is evolving rapidly, with implications for corporate sustainability strategy. The SBTis latest Scope 3 discussion paper "*Aligning corporate value chains to global climate goals*" raises several salient points bearing upon the SGA Standard, including the shortcomings of aggregate Scope 3 targets, the dynamic nature of business value chain emissions over time, and issues with value chain boundary setting procedures which "can lead to misleading target formulation, exclusion of critical emissions and ambiguity about the transition from near- to long-term target boundaries." (SBTi 2024: 10) Another salient question raised in the SBTi Scope 3 paper is the issue of corporate influence over various elements of its value chain, recognising that there are areas with greater and lesser influence is possible on the emissions of corporate value chains. More work is required to identify these levers and build capacity for change.

Similarly, the Oxford Net Zero research report "*Governing Net Zero: Assessing Convergence and Gaps in the Voluntary Standards and Guidelines Landscape*" identifies areas of consensus and divergence in the different standards and guidance around how corporations and other organizations should approach the sustainability challenge. A central finding of the report is that "quantifying Scope 3 is recommended by 32 out of 36 (88%) relevant resources" reflecting a rapidly emerging consensus on the essential nature of value chain emissions. (Becker et al., 2024: 21) However, when it comes to specific process and procedures required for Scope 3 measurement and disclosure, existing resources and standards "guidance began to vary, or become patchy. For example, only half of relevant resources make recommendations for what proportion of emissions scope 3 targets should cover. Within this, 'Most relevant' scope 3 emission sources is the main provision given for target setting, with well-known challenges existing in defining what 'relevant' or 'material' emissions mean for organisations." (Becker et al., 2024: 29)

The 2023 paper "**Untangling the carbon complexities of the video gaming industry**" released by Playing For The Planet also added much-needed guidance on Scope 3 value chain emissions that combined game industry perspectives with the technical expertise of The Carbon Trust. It noted "a lack of clarity on how video game businesses should interpret and apply existing carbon accounting frameworks and engagement with the broader video

gaming community on climate action," (4) however it stopped short of proposing an industry or sector-specific standard. The report noted the importance of Scope 3 integrity for a number of stakeholders including players who "should have access to clear and useful information" on sustainability topics. Adopting recommendations from the SBTi around target setting and minimum boundaries, the report provided guidance on the main categories to address in the games industry, screened by relevance and expected scale of emissions. The report also provided first of its kind guidance on the inclusion of multiple connected elements necessary for gameplay (e.g. displays, controllers, audio and network devices) within the end user boundary. The report represents a high standard for calculation of end user energy consumption and emissions, however it remains guidance and still requires some interpretation for implementation.

Standard stakeholders/users

The below is an exercise in mapping a number of key stakeholders for a Scope 3 standard, including their goals and what they may need from the Standard.

Stakeholder	Goals	Needs from Standard
Games Business	Make successful games, make a profit, grow, improve/maintain public image, weather the current downturn, minimise compliance costs, build brand awareness.	Guidance on GHG methodology, a fair playing field for benchmarks and comparisons, confidence in their ability to make CSRD submissions given ESRS complexity, help setting Scope 3 targets & reduction strategy, and greater data transparency from value chain partners. Greater visibility when genuine action and leadership on sustainability issues for other stakeholders is achieved (govts, investors, etc).
Government (esp. EU)	Meet public demands for climate action without alienating businesses, disclosures that enable national management of emissions, to create fair/level markets for business	Full & transparent disclosures of corporate emissions (ESRS) and transition plans that demonstrate alignment with EU long-term sustainability vision.

Investors (Institutional)	Make long-term returns, reduce risk exposure, and align investments with the Paris Agreement (e.g. EU green taxonomy)	Transparency and integrity of GHG measurement, enabling valid comparisons, ability to assess investment climate risk exposure, assess sustainability challenges/performance.
Hardware platform owners (MS/Sony/Nintendo)	Get games on their platforms, maintain/improve their platform image and attractiveness to gamers, avoid reputation risks	Enable software interventions that can be reflected in their own GHG inventory, contributing to Scope 3 reduction targets without compromising platform position/attractiveness.
Service providers (Software, middleware, engine, cloud, etc)	Make and maintain useful products and services applicable to games industry that meet needs, enable efficiencies.	Guidance on data collection, sharing and interoperability that meet needs of customers. Verification of sustainability achievements enabling competitive edge for more ambitious service providers.
Gamers	Play great games, feel good about the companies that make their games. Reduce costs of gaming (financial and environmental – save energy and emissions).	The maker of their favourite games to be part of the green transition, to not be angry/embarrassed/etc about the makers of their games, to have sustainability be the default in their games, without compromising the experience. To be able to trust green claims made about specific games and organisations.
Civil Society	Enable a fair and just sustainability transition	Standard to have integrity and be comprehensive, instilling confidence in the games sector to play fair and disclose truthfully, and align with goals of a just transition.
The planet itself	Survive, thrive	Standard to enable rapid reduction of emissions, restoration of the natural environment, protect biodiversity and reduce pollution.

Stakes/risks

- Legitimacy of the Standard – e.g. by not meeting expectations for integrity, completeness, and usability, the standard does not achieve wide adoption, fails to deliver for most stakeholders
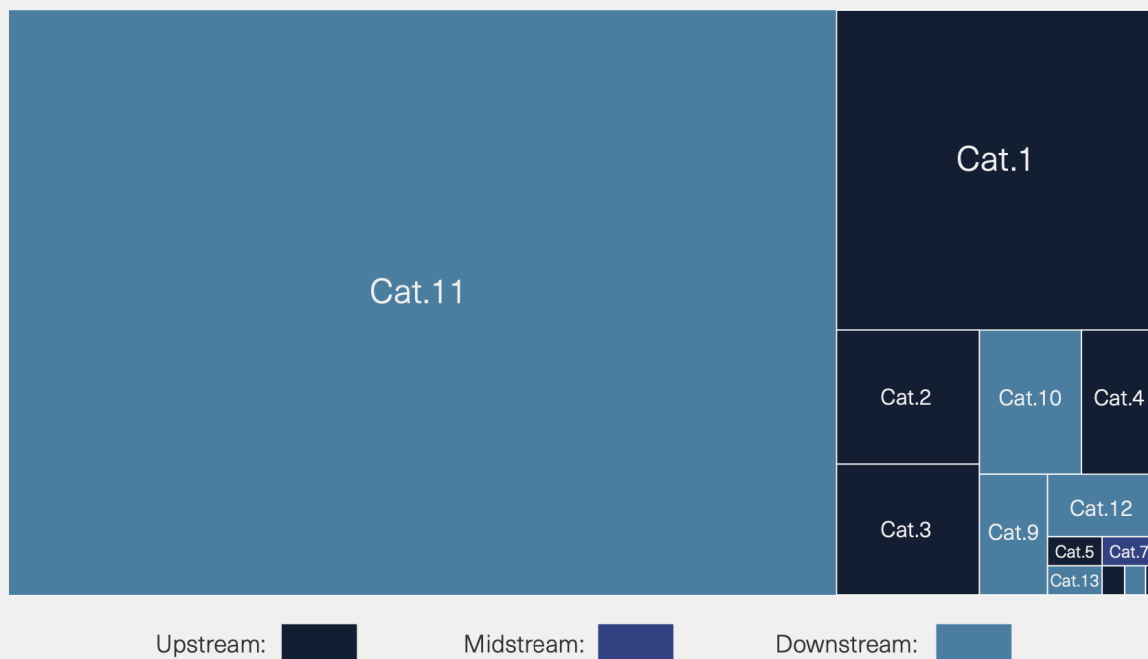
- Leaving major parts of the game business value chain un-disclosed – e.g. by only measuring GHG impacts that are minimal, make members look good, or that are "easy" to measure the standard may lose legitimacy in the eyes of consumers, government, civil society.
- Does not drive change - by being insufficiently detailed, through low adoption, or by not providing clarity on how to remedy the identified GHG emissions sources, fails to deliver for Government (esp. EU) and civil society.

Scope 3 Overview by Category

The SBTi Scope 3 discussion paper presents the following visual of the typical emissions scale per category, providing a visual guide to the "most important" Scope 3 emissions categories via absolute emissions. However as important as absolute emissions are, this is not the end of the story, and other aspects such as degree of influence over parts of the value chain, the existence of policies, solutions and alternatives to act as levers are also important.

Figure 4. Scope 3 emissions by category (excluding category 15) [24]

Cat. 1: Purchased goods and services
Cat. 2: Capital goods
Cat. 3: Fuel- and energy-related activities
Cat. 4: Upstream transportation and distribution
Cat. 5: Waste generated in operations
Cat. 6: Business travel
Cat. 7: Employee commuting

Cat. 8: Upstream leased assets
Cat. 9: Downstream transportation and distribution
Cat. 10: Processing of sold products
Cat. 11: Use of sold products
Cat. 12: End-of-life treatment of sold products
Cat. 13: Downstream leased assets
Cat. 14: Franchises

Cat.11 | Cat.1 | Cat.2 | Cat.10 | Cat.4 | Cat.3 | Cat.9 | Cat.12 | Cat.5 | Cat.7 | Cat.13

Upstream: | Midstream: | Downstream:

The P4PA "Carbon Complexities" report also offers an estimated impact breakdown by Scope 3 category.

Scope 3 Category	Publisher	Developer	Manufacturer
1 Purchased goods and services	🔴	🔴	🔴
2 Capital goods	🟠	🟠	🟠
3 Fuel and energy related emissions	🔵	🔵	🔵
4 Upstream transportation and distribution	🔵	🔵	🔵
5 Waste generated in operations	🔵	🔵	🔵
6 Business travel	🔵	🟠	🔵
7 Employee commuting	🔵	🔵	🔵
8 Upstream leased assets	⚪	⚪	⚪
9 Downstream transportation and distribution	⚪	⚪	🔵
10 Processing of sold products	⚪	⚪	🔵
11 Use of sold products	🔴	🔴	🔴
12 End-of-life treatment of sold products	⚪	⚪	🔵
13 Downstream leased assets	⚪	⚪	🔵
14 Franchises	⚪	⚪	⚪
15 Investments	⚪	⚪	🔵

Scope 3 emissions contribution   🔴 High (> 10%)   🟠 Medium (5-10%)   🔵 Low (<5%)   ⚪ Not reported

The following notes and discussion on each category, identifying potential **issues** & **benefits** to measuring and disclosing emissions for each category is offered as a way of starting the conversation with SGA Members and other industry stakeholders. We want to invite active,

considered input, facilitate discussion and debate around prioritization of categories as part of the SGA standard.

Category 1 – Purchased goods and services

- A large source of emissions – many unofficial sub-categories/types of sources in existing disclosures.
- Degree of control or influence over emissions is mixed – some procurement policy levers, potential supplier engagements, and other policies possible. Currently a high use of spend-based calculations reduce capacity to both measure and identify decarbonisation levers.
- Potential sub-categories as observed in existing game ESG disclosures:
    - Marketing (digital, video, performance, etc)
    - External game production (contract outsourcing, etc)
    - Facilities services & management (cleaning, catering, repairs, etc)
    - Game distribution / online services costs (possible overlap or better placement in other categories e.g. Cat 9 downstream transport and distribution)
    - Purchased IT equipment (possible overlap or better placement in Category 2 capital goods, depending on how purchases are treated by accounting procedure)
    - Data centres / CDNs / bare metal / online cloud services / etc. (When using a simple purchase service model, if a leasing arrangement in place then Cat.8 Upstream leased assets.)
- **Issues**: currently data sharing between suppliers and purchasers is not great, ad-hoc, data quality and comprehensiveness issues (e.g. variable cloud provider cal methods and boundaries), huge variety of suppliers, reliance on spend-based factors for the vast majority of measurements (e.g. Ubisoft only used spend-based for '23, even Microsoft only achieved 51% activity-based in '23). Can we adopt something like the PATH protocol for those suppliers that are sharing?
- **Benefits**: Huge potential upside from moving from spend to activity-based measurement, potential for big levers of influence either collectively or from individual large companies.

Category 2 – Capital Goods

- "Plant, property, or equipment" – mainly only show up in the largest games businesses from e.g. data centres & buildings – possibility to include IT Hardware but GHGP guidance is to follow own financial accounting procedures. Would want to see where companies are currently putting their IT Hardware purchases (and provide the same guidance for either case).
- **Issues**: Low priority for all but the biggest companies, data sources are ???
- **Benefits**: potential impacts are large, esp in buildings & hardware energy efficiency – the potential to lock in energy patterns for a long duration.

Category 3 – Fuel or Energy-Related Activities not included in Scope 1 & 2

- Three categories relevant to games, with links to Scope 1&2 fossil fuel use: emissions from the production of fuels used and reported in Scope 1 or Scope 2 (e.g. "Extraction, production, and transportation of fuels consumed by the reporting company" or by the electricity company). e.g. Well-to-tank losses, and transport/distribution losses.
- **Issues**: T&D losses (from electricity grids, for e.g.) are nationally specific. WTT losses rely on databases. Some caveats for market-based renewable purchases, and complexity in measurement of Scope 2 market vs location–based… some deeply technical questions. [Climatiq explainer on WTT/TDD calc methods](#)
- **Benefits** – these emissions are reduced as Scope 1 & 2 emissions are phased out (with caveats). There doesn't seem to be anything sector-specific about this that presents an additional challenge for games so… relatively straightforward?

Category 4 – Upstream transportation and distribution

- Emissions from transport via: road, rail, air, sea and warehousing, including outbound distribution (if paid for by reporting company –).
- Moderate applicability?
- Major determining factor is who is paying for the transport/distro services – once transport costs are covered by someone else (e.g. Valve/Steam, physical retailer) it becomes Cat 9 Downstream transport and distribution.
- Transport EFs are (reasonably) well defined, measurement issues can be in tracking start/end points, distances, etc.
- **Issues:** Digital distribution can be opaque, some uncertainty over appropriate/correct model for measurement (CF: Dimpact report on streaming emissions), and great difficulty in making consequential analysis. i.e. hard to arrive at concrete "do this to reduce" type conclusions. Digitalisation also has potential for "rebound effects" – perception of "its free/immaterial" because its in cloud/elsewhere. Large degree of complexity in different digital distro suppliers. Single large supplier (Valve) largely uninterested in disclosures and decarb thus far, may be difficult to engage (Bigger issue for Cat 9 downstream transport and distro).
- **Benefits** – Digitalisation of sales is reducing physical transport costs and emissions, plastic use, and waste. Potential for important research to be undertaken here with wider benefits (if successful)

Category 5 – Waste generated in operations

- Waste disposal (landfill, incineration) and recycling (incl recycling rates), waste-water treatment.

- Pretty low applicability, larger facilities more important. Estimate low in scale.
- **Issues**: lots of niche/corner cases – landfill-gas-combustion-to-energy, waste-to-energy, composting.
- **Benefits**: promote circular economy (EU ESRS goal), awareness of waste issue (plastics, food waste, etc). Existing facilities relationships (i.e. large commercial landlords) can produce waste summaries.

Category 6 – Business travel

- Significant component of S3 especially for smaller games biz, potentially biggest single component of Scope 3 for indies w/ small audiences
- Good existing methods for calculation with appropriate data collection.
- **Issues**: For larger companies, absolute emissions may become (as a proportion) much less important than other S3 elements. Nothing particularly game-industry specific from an impact accounting perspective…
- **Benefits**: Important to address for equity reasons and culture shift away from centralised "event" based travel, centrality to certain parts of the games business (e.g. everyone flying to GDC), solutions already exist (videoconferencing, mode shift in transport away from flights, etc)

Category 7 – Employee commuting

- Small (but not nil) component of absolute emissions. Again, not much unique to games industry. Good data exists for certain modes of transport, but data collection a challenge (i.e. privacy issues for employees, how to get accurate data without staff surveillance)
- **Issues**: WFH has challenges for accurate measurement, with estimates widely used.
- **Benefits**: Potential to improve on existing WFH methodology? GHG Protocol Scope 3 calc guidance does not have advice for WFH (though may exist elsewhere) this may be a gap in existing standards/advice we can fill?

Category 8 – Upstream leased assets

- Emissions from leased assets not already included in Scope 1 or 2, e.g. possible leasing arrangements around entire data centres, if not using a simple purchase model.
- Low applicability for all but the very largest games companies.
- **Issues**: identifying common use-cases.
- **Benefits**: ??

Category 9 – Downstream transportation and distribution

- Includes "only emissions from transportation and distribution of products after the point of sale" i.e. buyers driving home from the store, digital downloads from Steam, etc.
- High applicability – though uncertain as a portion of absolute emissions. Likely to be the 2nd highest downstream category for games industry, given Cat10 low applicability.
- **Issues**: data collection issues, similar issues to Cat 4 upstream transport & distribution, unclear amount of influence corporations have, or what the levers are on emissions. May raise collective importance as SGA Members group? Need clearer model of digital data transport and boundaries of influence/responsibility. Plastic discs an issue.
- **Benefits**: important to increase awareness and transparency in this overlooked part of the games industry footprint. Potential to accelerate phase out of plastic discs.

Category 10 – Processing of sold products

- Low applicability – very little (or nil?) processing of intermediate products. Maybe some relevance for, e.g. software engine makers? Is there any "processing" involved?
- GHGP S3 VC minimum boundary: "The scope 1 and scope 2 emissions of downstream companies that occur during processing (e.g., from energy use)"

Category 11 – Use of sold products (End Users/Gamers)

- Extremely important category for *absolute emissions* and *emissions intensity* metrics and other potential currently non-tracked metrics (i.e. intensity per hour gameplay). Also important to hardware platforms, end-users, an area of intrinsically shared responsibility.
- Very high applicability – almost certainly the highest category in all of Scope 3, but currently least well measured and definitely least consistently disclosed. Few transparent methodologies yet (P4PA guide has the best), little or no agreement on what (or even if) to include. Highly political and contested topic – ESRS will likely be **major intervention**. The SGA understanding is that currently it is hard to see how it will be possible to claim Category 11 is not "material" and avoid the requirement to disclose, for all but the smallest developers. Possible commercial considerations if disclosure not done in aggregate, however that runs counter to ideal situation for identifying and operating "levers" of influence – SGA potential to be custodian of disaggregate data (e.g. platform specific/product specific Cat11 figures) with far lesser commercial risk, helping identify opportunities without exposure to competitors.
- Almost 100% of Cat 11 emissions in games are expected to be "direct use-phase emissions" from consumption of electricity (with nil or nearly no indirect use-phase emissions) with a large degree of variability between devices/platforms/end user location, but in principle measurement is increasingly plausible.
- **Issues #1**: Who is best placed to actually *measure* end-user emissions? Is it practical for game devs to measure with accuracy? Seems increasingly theoretically and practically possible, esp.

on certain platforms (Xbox + lower-power platforms which will have less variability across higg/low performance modes, PC and console higher variability and uncerrtanity). May require software development time to enable more collection of time-of-use data – unless marketing teams are already collecting. Privacy issues and potential release of commercially sensitive data also a concern.

- **Issues #2:** What is the appropriate unit of measurement? Platform/device/SKU? How specific/detailed do we need to go? How many hardware devices to account for and how far "back" to try and include? Hardware configuration "wild west" of the PC landscape. Consoles/mobile slightly more manageable, but still a huge variety of devices to account for.
- **Issues #3 – Influence and imperfect control**: What degree of influence/control do software developers have over software energy & emissions? How to identify, recognise, valorise energy/emissions saving? Commercial imperatives may run counter to sustainability targets/goals. What level of Paris "alignment" is possible for end-users, and what sort of other input is it going to take? "Green code" initiatives are a rapidly developing area of development and technical sophistication – e.g. GSF's "[Software Carbon Intensity](#)" specification, see also a literature review of approaches to "[environmentally sustainable software design](#)"
- **Data sources exist for**: console SKUs (testing from EU energy efficient consoles initiative), Xbox real-time measurement, Watt-wiser style hardware monitoring, but systematic solutions not yet comprehensive, certainly nothing covering all game platforms possible to release on.
- **Benefit**: Huge and obvious benefits all over the place! Save consumers on power bills (though individual savings are negligible the benefit is collective), contribute to national and global goals/targets, most substantial component of industry footprint means large potential for impact reduction. Data center/cloud efficiency for live-service/multiplayer can reduce spend. Mobile specific – efficient mobile games use lower battery, resulting in better user experience. Optimising represents potential best-practice learnings for other platforms. Mobile time-of-use is also uniquely separate from time of emissions - an opportunity to be carbon aware in charging devices to gain some influence over emissions.
- **Complications**: S3 Cat 11 does appear in the hardware manufacturers' inventories – it's not *double counting* for S3 categories to appear in more than one corporate inventory. In fact is expected, however care needs to be taken in communication and analysis of inventories to articulate that responsibility and influence/control over this area is *not a simple issue.*

Category 12 – End-of-life treatment of sold products

- Similar elements and data sources to Cat 4 waste – covers landfilling, incineration, and recycling, and (game specific) deletion of files
- Medium applicability – plastic discs in landfill/incineration and low recycling rates, however file deletion end-of-life is extremely low in absolute terms.
- **Issues**: global waste streams and knowing typical end-of-life for plastic discs not particularly well understood or recorded. Assumptions? Lots end up in landfill.
- **Benefits**: quantification of physical waste can lead to greater incentive to digital products.

Category 13 – Downstream leased assets

- Very low applicability to developers.
- Do any developers lease out to others? Possibly co-working arrangements, at a stretch, though any emissions of these are likely to be already reported under Scope 1 & 2 (Standard could just make that an explicit req.).

Category 14 – Franchises

- Nil applicability at present. Are there game developer franchises? Unlikely.

Category 15 - Investments

- More applicable to mega-large companies, existing financial disclosure standards may be more relevant than the SGA Standard.
- Low applicability.

Scope 3 Categories Summary Table

Category	Applicability to games ind.	Technical difficulty	Other difficulty (political, ethical, etc.)	SGA Member ranking of importance
1 – Purchased goods and services	5	5	3	TBD.
2 - Capital Goods	2-3	4	2	TBD.
3 – Fuel or Energy-Related Activities not included in Scope 1 & 2	4	4	1	TBD.
4 – Upstream transportation	2	4	1	TBD.
5 – Waste generated	1-2	3	1	TBD.
6 – Business Travel	5	2	1	TBD.
7 – Employee Commuting	5	3-4	3	TBD.
8 – Upstream Leased assets	1	?	1	TBD.
9 – Downstream transport and distribution	5	5	1	TBD.
10 – Processing of sold products	0-1	?	?	TBD.

11 – Use of sold products	5	5	5	TBD.
12 – End of life treatment	4	3	2	TBD.
13 – Downstream leased assets	0-1	0-1	?	TBD.
14 – Franchises	0	0	?	TBD.
15 – Investments	0	0	?	TBD.

Other issues not discussed

A topic raised in the SBTi Scope 3 discussion paper is the question of **historical emissions**. The SGA Standard has (thus far) not considered whether or where to account for past emissions, or engaged with the ethical/moral question of responsibility for historical emissions. It remains unlikely to be a priority issue for the near-to-mid term, but might become an issue for those at the forefront of net zero transition governance, particularly as transition plans and pathways begin to take into account different levels of global development, and as the remaining carbon budget rapidly shrinks leaving 1.5-2° warming in question.

Conclusions

The view that emerges from this overview is that there are certain key categories with high importance, high technical difficulty, and high political/ethical concerns that will require careful work. There are also some categories with high applicability, and low/mid difficulty – such as Business Travel, Fuel or Energy-Related Activities, and Employee Commuting that are good candidates for initial categories to begin Scope 3 standard development from, with established methodologies. On the other hand, there is little about these three categories that is presents unique challenges for game development, however the Standard may also identify areas where the culture or practices of the game industry may be in conflict with long-term sustainability (for example – mega-conferences and associated flights).

A further conclusion is that it appears as though only a few categories of emissions have *nil or very low* applicability, and the Standard should be a benefit to a great number of games businesses.

We are also awaiting the results of the SGA member onboarding survey that will provide further insight into what issues members see as the highest priorities to inform our decisions and plan for approaching Scope 3 categories.

References

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