Sustainability Metrics Guidance Documents

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Subject to Future Updates

For ACC Member Use. Not for Public Dissemination.

The metrics are intended only for the U.S. Operations that are part of ACC's Dues-paying calculation.

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Environmental Metrics

Socially Oriented Metrics

Product & Processes Metrics

Air Quality Metric

Rationale

NGOs and regulators regularly call for greater transparency about air emissions from the manufacturing sector. One NGO has piloted a program in Houston to gather and publish air emissions data using mobile monitors. Currently, the chemical industry reports SOx, NOx and 187 Clean Air Act-listed Hazardous Air Pollutants (HAPs) emissions through Responsible Care®. However, companies also report significantly more (though often under-utilized) data through the U.S. Environmental Protection Agency's (EPA) Toxic Release Inventory (TRI) and other Clean Air Act programs. These reporting initiatives provide a credible source of data upon which to build an Air Quality metric.

ACC members strive to reduce air emissions associated with chemical manufacturing and are transparent about their progress. Their commitment is illustrated by implementation of new technologies or process improvements.

Measurements & Member Reporting Instructions

Companies excluded from EPA reporting are not required to report under this metric.

1. **Annual Aggregate TRI Air Emissions**
   The total amount of chemicals in pounds released to air that are required for reporting to EPA TRI program.

   Note**: **Data will be automatically populated by ACC and made available for company quality assurance review.

2. **Annual Pollutant Emissions**
   a. ACC members will report their annual emissions to air currently reported to EPA or the State for the following pollutants.
      i. *Hazardous Air Pollutants (HAPs) (Currently reported under RC)*
      ii. *Sulfur Oxide (SOx) (Currently reported under RC)*
      iii. *Nitrous Oxide (NOx) (Currently reported under RC)*
      iv. Volatile Organic Compounds (VOCs)

v. Carbon Monoxide (CO)
vi. Lead (Pb)
vii. Particulate Matter (PM 2.5, PM 10, and/or Total, consistent with how company reports data to EPA)

3. **Have you implemented source reduction techniques or technologies to reduce releases to air during the prior year?**
    a. If yes, provide a case study or short narrative description of the method/technology and the reductions that are expected.

ADDENDUM

Definitions

Facilities required for EPA reporting: EPCRA Section 313 requires that reports be filed by owners and operators of facilities that meet all of the following criteria:

- The facility has 10 or more full-time employee equivalents (i.e., a total of 20,000 hours or greater; see 40 CFR 372.3);
- The facility is included in a North American Industry Classification System (NAICS) code; and
- The facility manufactures (defined to include importing), processes, or otherwise uses any EPCRA Section 313 chemical in quantities greater than the established threshold in the course of a calendar year.

Source Reduction: for purposes of this metric, Source Reduction may mean, any practice that:

- Reduces the amount of any pollutant subject to a National Ambient Air Quality standard or listed under Section 112 of the Clean Air Act released to the ambient air (including fugitive emissions) prior to, energy recovery or treatment; and
- Reduces the hazards to public health and the environment associated with the release of such substances.

The term "source reduction" is not intended to include any practice that alters the physical or chemical characteristics or volume of such substance through a process or activity that itself is not integral to and necessary for the production of a product or the providing of a service.

Source reduction activities include equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training or inventory control. Newly implemented source reduction activities include activities that were implemented, in whole or in part, during the reporting (e.g., improved loading procedures).

Criteria Pollutants: Criteria pollutants generally come from numerous and diverse sources. The criteria pollutants are carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM) and sulfur dioxide (SO_2). For these pollutants, EPA has established allowable concentrations in the ambient air (National Ambient Air Quality standards)

Notes: Ozone is generally not emitted directly by sources but rather is the result of atmospheric interactions between its precursors, VOC and NOx and would be reported based on emissions of these precursors.

Particulate matter (two size classifications of PM are currently regulated through the NAAQS):

- "Inhalable coarse particles," such as those found near roadways and dusty industries, are larger than 2.5 micrometers and smaller than 10 micrometers in diameter.
- "Fine particles," such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries and automobiles react in the air.
- "Total Particulate Matter" was added to the disclosure for companies that may only track their PM emissions as an aggregate number and are not currently able to separate out their data by PM 2.5 or PM 10.

More information can be found here:
https://www3.epa.gov/region1/eco/uep/particulatematter.html

More detailed guidance and description of EPA defined criteria pollutants can be found on their website: https://www.epa.gov/criteria-air-pollutants

Energy Efficiency & Energy Diversity Metric

Rationale

ACC's Sustainability Principles include a commitment to improve the availability, performance and efficiency of renewable energy and energy efficient technologies made possible by chemistry. Responsible Care® requires annual reporting of facility energy efficiency. Highlighting use of renewable energy and efficiency improvements, while also related to GHG reductions, allows us to more fully demonstrate commitment to measures associated with environmental stewardship.

ACC members strive to improve their energy efficiency and are increasing the share of renewable energy in their energy portfolios. In addition, the products of chemistry are essential to energy efficiency and renewable energy sources, and society will not be able to transition to a more efficient and diverse energy future without them.

Measurements & Member Reporting Instructions

4. **Aggregate Percentage of Energy Portfolio Comprising Renewable Energy and/or Renewable Energy Credits (RECs) Purchased**
    a. ACC members will report the percentage of their energy portfolio that is comprised of renewable energy and/or renewable energy credits purchased.

5. **Total Aggregate BTUs of Energy Saved Due to Efficiency Improvements Annually**
    a. ACC members will report estimated resulting reduction in energy consumption from efficiency improvements made by the company. Companies will provide an estimate of reductions and not include any reductions that result from reduction in production volume or in cases of outsourcing.

ADDENDUM

Definitions

Renewable Energy: The U.S. Energy Information Administration, under the U.S. Department of Energy, defines Renewable Energy as energy from sources that are naturally replenishing but flow-limited; renewable resources are virtually inexhaustible in duration but limited in the amount of energy that is available per unit of time.

ACC members may acquire renewable energy in the following ways:

- Onsite generation
- Utility-supplied renewable power
- Renewable energy certificates (RECs)
- Direct purchase agreements

The major types of renewable energy sources are:

- Biomass
    - Wood and wood waste
    - Municipal solid waste
    - Landfill gas and biogas
    - Ethanol
    - Biodiesel
- Hydropower
- Geothermal
- Wind
- Solar

Renewable Energy Credits (RECs): The U.S. Environmental Protection Agency (EPA) defines Renewable Energy Credits (RECs) as a market-based instrument that represents the property rights to the environmental, social and other non-power attributes of renewable electricity generation. RECs are issued when one megawatt-hour (MWh) of electricity is generated and delivered to the electricity grid from a renewable energy resource.

RECs include several data attributes, including:

- Certificate data
- Certificate type
- Tracking system ID
- Renewable fuel type
- Renewable facility location

- Nameplate capacity of project
- Project name
- Project vintage (build date)
- Certificate (generation) vintage
- Certificate unique identification number
- Utility to which project is interconnected
- Eligibility for certification or RPS
- Emissions rate of the renewable resource

Note: **This list is not exhaustive and, depending on the market in which the REC is generated, other attributes may be associated with the certificate.**

Energy reduction: Defined as amount of energy no longer used or needed to carry out the same processes or tasks.

Energy portfolio: Includes all sources of energy as defined by the Responsible Care® GHG and EE Survey.

Efficiency improvements: Defined as organizational or technological modifications that allows a defined process or task to be carried out using less energy.

BTUs consumed: Total energy, in British Thermal Units (BTUs), consumed at ACC member company facilities.

Production, pounds: The pounds of material produced at North American Industry Classification System (NAICS) 325 facilities in the United States. This number will be reported to ACC as a single, aggregated number for each company. This includes all pounds of NAICS 325 products, including intra-company transfers of products with inherent market value. This number excludes wastes and recycled materials. Production should be counted for that portion of a corporation or company that is used to determine ACC dues. Joint venture production is reported by the operating company. This definition is consistent with both the ACC Energy Efficiency and Greenhouse Gas Emissions Survey and the original Responsible Care Pollution Prevention Code.

GHG Impact Metric

Rationale

ACC's Sustainability Principles include a commitment to reduce greenhouse gas (GHG) emissions. Aggregate ACC GHG Intensity data is published annually under Responsible Care®. Adding actual emissions reporting has been proposed to enhance transparency. Avoided emissions is critical to put operational emissions in context.

The chemical industry is working to reduce its own GHG footprint through enhanced operational efficiencies and advanced technologies. Furthermore, innovations in chemistry enable other sectors along the value chain, as well as consumers, to reduce GHG emissions throughout the economy and help to achieve climate goals.

Measurements & Member Reporting Instructions

6. **Aggregate actual GHG emissions direct and purchased from U.S. operations (**Includes carbon dioxide, methane, nitrous oxides, HFC, PFC, and SF_6 as reported under Responsible Care®**).**

   ***Note*: The ACC *Energy Efficiency and Greenhouse Gas Emissions Survey* will be used for data collection for this metric. This data will be released to the public only as aggregated ACC membership data.**

7. **GHG emissions intensity, incorporating direct and purchased emissions** (Currently reported in Responsible Care®)

8. **Has your company made a public commitment to reduce actual GHG emissions?**
   Yes, we have made a commitment(s)
   a. _____ CO_2 Equivalents Reduced
   No, we have not made a commitment(s)
   b. _____ CO_2 Equivalents Reduced

9. **Has your company made a public commitment to reduce GHG emissions intensity?**
   Yes, we have made a commitment(s)
   a. _____ % Reduction
   No, we have not made a commitment(s)
   b. _____ % Reduction

Hazardous Waste Management Metric

Rationale

ACC's Sustainability Principles include a commitment to the reduction of waste through process improvements and materials recycling. Hazardous waste volumes and disposal methods are reported to government agencies by most ACC members. Using these data, ACC can demonstrate the amount of hazardous waste its members divert from disposal methods, including destruction or treatment prior to disposal, through recycling or conversion to energy. An intensity measurement can illustrate how the industry can maintain or improve waste intensity even during periods of growth.

ACC members manage hazardous waste responsibly to reduce health and environmental impacts and to recycle or convert significant amounts of hazardous waste to energy. Through waste reduction and efficiency improvements, industry maintains or improves waste intensity even during periods of industry growth.

Measurements & Member Reporting Instructions

10. **Total Hazardous Waste Generation**
    a. Quantity of hazardous waste generated, consistent with what member companies report (or would report) on biennial reports.
        a. _____ pounds

    ***Note*: Members will be asked to report on an annual basis, even though reporting to EPA occurs biennially.**

11. **Hazardous Waste Diverted from Disposal to Reclamation and Recovery**
    a. Identify and report the quantity of hazardous waste diverted from disposal, including destruction or treatment prior to disposal, to reclamation and recovery (e.g., energy recovery) by using the *Management Method Codes* on the EPA biennial report form.
        a._____ pounds

    ***Note*: Members will be asked to report on an annual basis, even though reporting to EPA occurs biennially.**

12. **Hazardous Waste Intensity**
    a. HWI = (total hazardous waste generated / total chemical pounds of production).

    ***Note*: HWI will be automatically calculated, based on the pounds of production submitted under Responsible Care®.**

ADDENDUM

Additional Information and Guidance

The intent is to include all EPA-reported data under RCRA and apply all EPA exemptions and reporting thresholds.

Definitions

RCRA (Resource Conservation and Recovery Act): This is the public law that creates the framework for the proper management of hazardous and non-hazardous solid waste. The law describes the waste management program mandated by Congress that gave EPA authority to develop the RCRA program. The term RCRA is often used interchangeably to refer to the law, regulations and EPA policy and guidance. See https://www.epa.gov/rcra.

Hazardous waste: As defined by RCRA, 40 CFR parts 260 -273. The amount reported should be the same as reported on federal EPA biennial reports. These reports are made by "Large Quantity Generators" (as defined by RCRA) and include the hazardous wastes generated by a facility and managed either on-site or sent off-site with a hazardous waste manifest for recycling, treatment, storage or disposal. The biennial report data excludes material that would be hazardous wastes but for an exemption or exclusion from RCRA regulation (i.e., materials returned to the production process or recycled under an exclusion or exemption).

Waste Intensity*:* The amount of waste relative to the amount of production mass.

Water Management Metric

Rationale

ACC member companies strive to be responsible partners when it comes to conserving water and protecting water quality. The ACC sustainability materiality assessment identified water quality and potential contamination of source water (wells, aquifers, rivers, lakes and streams that could be utilized for drinking water) as a top public and stakeholder concern. Water efficiency was also viewed as an important issue for the chemical industry.

Part One: Water Use and Efficiency. Goal: Drive change in the chemical industry manufacturing process to reduce water withdrawn. These metrics build upon the water consumption measurements already reported under Responsible Care® by raising visibility to water conserved and discharges reduced through efficiency and reuse in operations. The measurements will also track the percent of ACC member companies that have conducted a water stress assessment for their facility locations.

Part Two: Water Quality and Protection. Goal: Enable proactive engagement by companies to reduce risk to water bodies potentially impacted by facility operations. This metric reinforces information transparency by sharing water-specific Toxic Release Inventory (TRI) releases. To go beyond regulation, this metric proposes an assessment framework that could be adopted by member companies to identify risks to water sources from operations and undertake actions to manage those risks.

Part Three: Water Innovation. Goal: Demonstrate that ACC members are committed to advancements, innovations and investments that help supply clean water and improve water efficiency throughout society. These measurements will encourage innovations and new technologies by ACC members to advance water treatment effectiveness, increase fresh water supplies and improve water use efficiencies.

Measurements & Member Reporting Instructions

13. Total Water Withdrawn

ACC members to report total freshwater withdrawn in gallons for the reporting year.

a. _____ Gallons (Total)

For facilities with cooling systems, report the volume included in the Water Withdrawn that is associated with:

a. The single-pass cooling operation for the reporting year.
   _____ Gallons (used in the single pass cooling systems)
b. Evaporative recirculating cooling system operation for the reporting year.
   _____ Gallons (used in the evaporative recirculating cooling systems)

14. Estimated Water Reuse or Recycle

ACC members to report best available estimates for freshwater Reuse or Recycle.

a. _____ Gallons (reused or recycled, excluding water recirculation associated with cooling systems or steam systems)

For facilities with one or more cooling towers, report the best available estimates for the volume included in Water Reuse or Recycle that is associated with cooling tower operations for the reporting year.

b. _____ Gallons (reused in cooling towers)

15. Water Intensity

Water Intensity = (total freshwater withdrawn/total chemical pounds of production)

***Note*: Water intensity values will be automatically calculated using the ACC system, based on the pounds of production submitted under Responsible Care®.**

16. Technologies Implemented

Have you implemented techniques or technologies to promote reductions in water withdrawn? YES/NO

c. If yes, provide a case study or narrative description of the method/technology and the reductions that are expected.

17. Toxics Release Inventory (TRI) releases:

Report the amount of chemicals in pounds that is released to water, on-site (TRI Section 5) and off-site (TRI Section 6), in accordance with, and for each chemical required to be reported under the EPA Toxics Release Inventory (TRI) Program. All EPA thresholds and exclusions apply.

***Note*: Data will be automatically populated by ACC and made available for company quality assurance review.**

18. Water Body Risk Assessment

a. Have you conducted a water stress assessment for each of your facilities? YES/NO

b. Report the number of company facilities with completed water body risk assessments
    a. _____ Total number of facilities covered under ACC dues fees
    b. _____ Report the percentage of those relevant facilities with completed water body risk assessments

ADDENDUM

Additional Information and Guidance

Water Body Risk Assessment (WBRA), Management and Mitigation
ACC strives to help our member companies become strong stewards to protect water resources near their facilities. This part of the metric is being designed to help members conduct a holistic Water Body Risk Assessment (WBRA), looking beyond regulatory compliance activities and considering a broad scope and potential risk factors around your facilities. The goal of the work is to chart a credible and transparent path members can follow toward meaningful and continuous improvement in water stewardship.

Water Stress Assessment
The first step in the WBRA, and the first measurement in this metric, is to assess the baseline level of water stress where your facility is located:

1. Perform a Water Stress Assessment, consistent with the following five water-quality risk indicators, or something similar, for major water sources upon which your facility is reliant and watersheds in which your facility is located. These indicators may include:
    - **Baseline water stress:** the ratio of total annual water withdrawals to total available annual renewable supply
    - **Inter-annual variability:** the variation in water supply between years
    - **Seasonal variability:** the variation in water supply between months of the year
    - **Flood occurrence:** the number of floods recorded (e.g., from 1985 to 2011)
    - **Drought severity:** the average length of droughts times the dryness of the droughts (e.g., from 1901 to 2008)

Water Stress Assessment: Water Stress Assessment is defined so as to be consistent with, or substantially similar to, the definition used by the World Resources Institute ("WRI"), available at https://wri.org/applications/aqueduct/water-risk-atlas/. Similar offerings can also be found in CEO Water Management Water Risk Assessment resources page available at https://ceowatermandate.org/toolbox/

Water Body Risk Assessment Program
ACC is currently working in collaboration with an outside third-party to design a sector-wide Water Stewardship Program that will include a WBRA framework that will be centered on a decision matrix and action plan that can help ACC members achieve excellence in their water stewardship performance. The WBRA will incorporate the Water Stress Assessment.

The program under development will be available to help ACC members:

1) Know their water body through a source water and watershed risk assessment;
2) Know their impact on their source water(s) and watershed(s), surrounding communities and associated operational risks;
3) Consider opportunities for action at high-risk sites understanding the additional stakeholder credibility that target setting conveys;
4) Collaborate with local stakeholders and communicate water stewardship commitments and actions; and,
5) Incorporate an approach for continuous improvement.

This work will result in a framework provided to members– and will soon be piloted by some member companies. ACC recognizes that early responses to this question may not be consistent at this time, however, additional guidance will be forthcoming as soon as possible.

This WBRA guidance is expected to be updated soon after the start of 2021 with the types of information you may want to begin to gather to prepare to build out your Water Body Risk Assessment. For now, members can start the first step, a Water Stress Assessment, as described below.

Definitions

Water Withdrawn: The total amount of fresh water pumped, piped or otherwise brought on-site for use in manufacturing and related activities. Excludes storm water (i.e., rainwater or snowmelt)

Estimated Water Reuse: Water that has been used more than once in a process or used in other processes, with treatment as appropriate, to reduce water withdrawn.

***Note*: ACC acknowledges the challenges in providing an "exact" measurement of water that is reused and recommends members report a best available estimate for purposes of this metric.**

Water Stress: Baseline water stress measures the ratio of total water withdrawals to available renewable surface and groundwater supplies. Water withdrawals include domestic, industrial, irrigation, and livestock consumptive and non-consumptive uses. Available renewable water supplies include the impact of upstream consumptive water users and large dams on downstream water availability. Higher risk values in the WRI Aqueduct Tool indicate more competition among users. (**Source:** WRI Aqueduct 2019: https://wri.org/applications/aqueduct/water-risk-atlas/)

Water Stress Assessment: Water Stress Assessment is defined so as to be consistent with, or substantially similar to, the definition used by the World Resources Institute ("WRI"), available at https://wri.org/applications/aqueduct/water-risk-atlas/. Similar offerings can also be found in CEO Water Management Water Risk Assessment resources page available at https://ceowatermandate.org/collectiveaction/resources/assess-and-engage/

Receiving water bodies: Any water source that is directly or potentially impacted by facility operations, including surface water and groundwater.

Water Body Risk Assessment: Framework to determine the risk to local water bodies (e.g., water scarcity, releases from operations, overall water quality) from facility operations (including manufacturing facilities, R&D locations and storage facilities), including surface water and groundwater reservoirs, and prioritize opportunities for improved sustainability of water resources.

FAQs

How should we account for cooling towers when calculating Water Withdrawn and Reuse?

Since the volume of water used in cooling towers is generally significantly greater than water used in the rest of the facility operations, ACC will initially collect information on water withdrawn and reuse that is associated with cooling tower operations as separate values. ACC will later assess whether to report the water quantities associated with cooling towers separately or combined into the total water volumes. Members could also provide narratives that explain the lifecycle and location-specific considerations in making decisions regarding the installation and use of cooling towers.

For ACC members that share facilities with other tenants, should the water used by the tenants be considered in-scope for Water Use & Efficiency disclosure?

ACC members are expected to report only on operations that are included under the scope of ACC's dues, consistent with how data is reported through Responsible Care®.

What tools are available to help conduct a water risk assessment and/or assess water stress?

Potential resources include the CEO Water Mandate, which provides a number of tools that may be used to conduct a Water Body Risk Assessment[1], The Water Council[2] and The Ceres Aqua Gauge™[3].

[1] CEO Water Management Water Risk Assessment tools: https://ceowatermandate.org/collectiveaction/resources/assess-and-engage/
[2] The Water Council https://thewatercouncil.com/
[3] The Ceres Aqua Gauge™ is an Excel-based tool and associated methodology https://www.ceres.org/index.php/resources/tools/ceres-aqua-gauge-comprehensive-assessment-tool-evaluating-corporate-management

Workforce Diversity & Inclusion Metric

Rationale

Organizational diversity and inclusion can foster a more creative, productive and innovative workplace. It can also reflect a company's broader values and is important to current and future employees. The chemical industry can be viewed as being fairly homogenous. This metric presents an opportunity to demonstrate our progress and desire to continue to evolve. Diversity provides the potential for greater innovation and creativity. Inclusion is what enables organizations to realize the social, business and economic benefits of its diversity potential.

ACC members are working to enhance the diversity of our industry and the inclusivity of our work places. We aim to build a future where individuals feel empowered and opportunities exist for leadership growth for employees. We are creating pathways to opportunity within our industry for under-represented groups through recruitment outreach, education and development programs. We also are reaching out to the next generation of employees through STEM education and job training programs focused on students in under-represented populations.

Measurements & Member Reporting Instructions

Measurements Regarding Organizational Diversity: To be reported to ACC by each member company.

Diversity of Governance Bodies

19. Percentage of individuals within the organization's governance bodies in each of the following categories:

a. Male
b. Female
c. Minority
d. (Optional) Other under-represented populations
e. Employee elected not to disclose ____%

Diversity of Workforce

20. Percentage of individuals within the organization's entire workforce in each of the following categories:

a. Male
b. Female
c. Minority
d. (Optional) Other under-represented populations
e. Employee elected not to disclose ____%

21. **Percent of individuals in company's management and/or leadership ranks in the following categories:**
    a. Report the number of positions in each category, along with the number of positions in each employment level (Professional Contributor; Manager; Executive) that are held by women (male vs female), minorities (minority vs non-minority)

       ***Note*: U.S. census minority availability data will be included for context.**

22. **Does your company have a formalized program to address diversity and inclusion?** YES/NO
    a. If you answered "Yes", what are your company's focus areas?

Measurements Regarding Future Workforce Growth: To be reported to ACC by each member company.

23. Does your company support educational or job training programs focused on under-represented populations to create job opportunity pipelines for both professional and wage-paying positions?
    a. Yes/No

24. Does your company conduct a recruitment program(s) to solicit applications from a diverse applicant pool?
    a. Yes/No

25. Does your company conduct STEM educational efforts at technical schools, high schools, colleges or graduate schools to grow science and engineering opportunities focused on increasing diversity & inclusion for females, minorities and/or other under-represented populations?
    a. Yes/No

ADDENDUM

Additional Information and Guidance

Applying ACC's metric to your company
ACC member companies may find that the organizational framework described in the D&I metric does not intuitively align with how their company is structured. For purposes of reporting to this metric, ACC encourages members to disclose through the D&I metric as they believe most appropriately represents their organizational structure. The intent of ACC's sustainability metrics is to gather insight on priority sustainability topics that inform how ACC can best provide value to our member companies. It is not intended to drive standardization in industry reporting or enable comparability between companies.

Definitions

General Terms

Diversity: Diversity refers to the similarities and differences among individuals accounting for all aspects of one's personality and individual identity, including age, color, disability, ethnicity/national origin, family status, gender and gender identity, race, religion, sexual orientation and veteran status.

Inclusion: Inclusion refers to giving equal access and participation opportunities to all people. It is what enables an organization to realize the social, business and economic benefits of its full potential to draw on a diverse set of employees.

Minority: For purposes of this metric, "minority" refers to men and women of those minority groups for whom EEO-1 reporting is required; that is black, Hispanic, Asian or Pacific Islander, American Indian or Alaskan Native. The term may refer to these groups in the aggregate or to an individual group.

Under-Represented Populations: For purposes of this metric, the term can be defined as any racial, ethnic or under-represented population at your company relative to their numbers in the general population. This can also include other vulnerable groups such as LGBTQ or any others as defined by GRI as a "set or subset of persons with some specific physical, social, political, or economic condition or characteristic that places the group at a higher risk of suffering a burden, or at a risk of suffering a disproportionate burden of the social, economic or environmental impacts…."

Employee Status/Employment Levels

Professional Contributor: For this metric, the term is used to define an employee who meets a certain salary range (as appropriately determined by each company based on their employee population and salary ranges), and contributes to the organization through expertise, knowledge and/or advanced technical/scientific skills.

Manager: A manager holds a senior position in the organization and supervises other employees, and/or helps set policies, drives change inside the organization.

Executive: The term used to define the highest-ranking individual or group of individuals who have managerial and/or administrative authority for the business operations of the organization, business unit or function.

Process/Procedural Terms

Job Training Program: Training that is provided for a certain job to enable an employee to acquire or grow the necessary skills to work with new processes, procedures or equipment.

Recruitment Program Focused on Improving Diversity (of applicant pools*)*: Establishing recruitment protocols that expand geographic targets, prioritize more diverse universities, advertise on web sites or publications that target under-represented populations, etc.

Diverse Applicant Pool Process: Implementing efforts to help assure that the sum total of all individuals who have applied for a position either by submitting a resume or application for employment which the employers uses to select candidates for *employment is inclusive and diverse.*

Governance Body: For purposes of this metric, "governance bodies" are people or groups of people who formulate the policy and direct the affairs of the organization. In particular, those bodies that have decision-making authority or significant influence over strategic or management decisions with the potential to have organization-wide impacts, including decisions such as corporate investment strategies, budget determinations, product portfolio changes, and/or hiring/firing/promotion determinations. For example, a Board of Directors, a Management Board, an Executive Committee, a Finance Committee, a Recruiting Committee, and/or a formalized group of department heads, facility managers or other leadership group may constitute "governing bodies" in an organization. (Note: For some organizations, these categories and decisions may be held by individual people rather than groups. If such groups do not exist in your organization, please use the option to report N/A if your organization does not have a governing body and report diversity under the leadership metric.) For purposes of reporting, companies can indicate if they are reporting U.S. based operations, or global operations, which in turn will be noted in reporting by ACC.

Community Engagement & Empowerment Metric

Rationale

ACC member companies strive to play a positive role in the communities in which they operate. Company investments support jobs, prosperity, tax revenue and economic growth at the local, state and national levels. ACC companies prioritize the well-being and fulfillment of their employees and work to enhance the vitality of their neighbors beyond the fence line by communicating about their operations to promote safety and support prosperity, educational opportunities, cultural life enhancements and environmental protection. ACC's annual economic impact data, along with information on our member companies' charitable activities and contributions, provides an opportunity to create a fuller picture of industry's positive impact.

Measurements & Member Reporting Instructions

26. Total Company Charitable Contributions in USD$

27. Percent of Relevant Member Facilities Engaging with a Local Community Advisory Panel (CAP).

a. Have you assessed each of your facilities to determine the relevance of hosting or participating in a CAP? (YES/NO)
b. Based on your assessment of your facilities, report:
    i. Number of facilities deemed relevant to host or participate in a CAP.
    ii. Number of facilities that currently host or participate in an active CAP.

***Note*: Appendix A includes guidance for companies to help assess the advisability or relevancy that each of their facilities should participate in or create a CAP.**

28. Company Volunteering

a. Total paid hours employees spent volunteering during employee's typical working hours.
b. Total employee hours spent volunteering through company sponsored initiatives or events outside of employee's typical working hours.

ADDENDUM

Definitions

501(c)(3): Section 501(c)(3) is the portion of the U.S. Internal Revenue Code that allows for federal tax exemption of nonprofit organizations, specifically those that are considered public charities, private foundations or private operating foundations. It is regulated and administered by the U.S. Department of Treasury through the Internal Revenue Service. There are other 501(c) organizations, indicated by categories 501(c)(1) – 501(c)(29). This discussion will focus on 501(c)(3). Additional information can be found at https://www.501c3.org/what-is-a-501c3/

Community investments: Total community investments refers to actual expenditures in the reporting period, not commitments. A member company can calculate community investments as voluntary donations plus investment of funds in the broader community where the target beneficiaries are external to the organization. Voluntary donations and investment of funds in the broader community where the target beneficiaries are external to the organization can include:

- Contributions to charities, NGOs and research institutes (unrelated to the organization's commercial research and development); this excludes political lobbying contributions.
- Funds to support community infrastructure, such as recreational facilities;
- Direct costs of social programs, including arts and educational events.

If reporting infrastructure investments, an organization can include costs of goods and labor, in addition to capital costs, as well as operating costs for support of ongoing facilities or programs. An example of support for ongoing facilities or programs can include the organization funding the daily operations of a public facility. Community investments exclude legal and commercial activities or where the purpose of the investment is exclusively commercial.

Community Advisory Panels (CAPs): A Community Advisory Panel is a collaborative forum for open dialog among manufacturing facilities and community stakeholders. CAPs traditionally consist of individual stakeholders who live near or around a chemical facility(s) and may include local legislators/regulators, community organizations, first responders, school officials and law enforcement, among others. The CAP meets regularly to discuss issues of mutual interest.

CAPs have long been a staple in the chemical industry, providing a forum for two-way communication between industry and local citizens and stakeholders. CAPs can enable chemical manufacturing facilities to better understand and engage with the communities in which they operate, and communities to convey interests and concerns around the facility and its operations.

"Paid volunteering": Refers to hours that company employees spent volunteering in the community during which time they were receiving their normal financial compensation. Stated simply, while "on the job and being paid" the employees' time was dedicated to a volunteer or charitable purpose.

If a company simply encourages its employees to volunteer on the weekend without offering any support (like matching the volunteer hours with corporate dollars or providing transportation to the volunteer activity), this should not be counted as corporate volunteering. Time employees spend on their own – without a material contribution to the process from the company – should not be reported as time the company donated to the community.

"Typical Working Hours": This term is intended to refer to an employee's standard work schedule, for purposes of tracking time employees spend engaging in volunteer activities sponsored by the company. Companies should disclose the amount of employee volunteer hours that occur:

1) Outside of an employee's standard working schedule, but that is sponsored by the company.

- **For example:** Disclosure may include employee participation in a weekend river cleanup activity sponsored by the company, but which does not coincide with their employee's routine work schedule; and

2) During an employee's standard work schedule with approval and support from the reporting organization

- **For example:** Participation in an employee-sponsored student reading program that takes place during an employee's routine work hours, and employee is still paid during those hours).

Appendix A: Member Tool for CAP Assessment

To illustrate industry's commitments to enhancing community engagement and empowerment through Community Advisory Panels, ACC recommends that members assess their need for CAPs on as facility-by-facility basis. Members may use the facilities-focused questions included below to determine whether facility participation on a CAP is relevant or may be beneficial for their facilities. ACC Members are encouraged to consider both environment and health risk to operations and local communities as well as potential opportunities for proactive engagement through CAPs.

Below is a list of facility-focused questions to help ACC member companies determine the conditions under which it may be advisable to participate in or initiate a CAP near each of their facilities. Please respond YES or NO to each question.

1. Do you have more than 200 people employed at this facility?

2. Do you have a major metro area within 10 miles of your facility?

3. Has your facility experienced an incident resulting in life-altering injuries, or had a significant release with off-site consequences in the past 5 years?

4. Has your facility received formal health or environmental related complaints in the past 12 months?

5. Does your facility house chemicals that fall under the Risk Management Program (RMP), the Toxic Release Inventory, or other high profile toxics (examples may include asbestos, ammonia, chlorine, cyanide)?

6. Are local and/or national organized environmental advocates publically expressing concerns about your facility?

7. Has a third-party health study been conducted related to your facility, or have there been media or public reports attributing health issues to the facility?

8. Are you expecting to significantly expand or reduce the size of your plant/workforce in the next two years?

9. Do you have multiple (more than 4) hazardous materials transports in and out of the facility daily?

Scoring: If you answered ‘yes’ to 3 or more questions, this indicates your facility meets the recommended criteria to consider establishing or engaging with a Community Advisory Panel. Your facility may wish to consider establishing or participating in an existing CAP within the next 12 months.

Product Safety Metric

Rationale

Consumers generally expect that the ingredients in the products they purchase and use have been thoroughly evaluated and assessed for safety by chemical manufacturers and regulatory agencies. With the proliferation of information on the internet and growth of global databases, risk-based information used by government agencies to make decisions regarding products in commerce world-wide is increasingly publicly available. Through this metric, ACC will capture and communicate publicly available chemical safety information on ACC member company products. ACC will work with members to identify potential gaps in publicly available risk-based information; this could lead to the establishment of metric targets to help fill any such information gaps. In a parallel effort, ACC and members will work to increase the number of "high interest" chemicals with safety information presented on ChemicalSafetyFacts.org.

ACC members aim for continuous innovation to improve the safety and sustainability of the chemicals they produce. Stakeholder interviews suggested that ACC acknowledge consumer fears around hazard, prior to introducing elements of exposure and risk. The innovation measurement does that by demonstrating industry's commitment to incorporating green and sustainable chemistry and engineering objectives into innovation and new product development.

Three measurements were established to meet the following objectives:

1. Increase information transparency and enhance stakeholder confidence in decision-making pertaining to chemicals in commerce;
2. Provide chemical safety information in a clear and understandable manner for a public audience;
3. Establish a collaborative culture of "green" and sustainable chemistry for the development of more sustainable products and processes.

Measurements & Member Reporting Instructions

29. Number or % of total volume of each chemical produced by an ACC member and sold in the U.S. that have publicly available hazard, exposure and risk information.

Measurement 1 under the product safety metrics requires no action from members at this time. For your information: ACC will be conducting an internal project to identify ACC member company chemicals that have been subject to a government safety assessment process (U.S. or otherwise), and have publicly available information to support these assessments. ACC will distribute results on the number of assessments, by chemical and organization that conducted the assessment, for member review. The existence of publicly available information sufficient for an authoritative body to make a decision regarding product safety will qualify as a "yes" under this metric. The universe of chemicals on which the measure will be based is the TSCA Chemical Data Reporting (CDR). *TSCA exemptions and CBI exclusions apply.*

30. Public Access to Consumer-Friendly Chemical Safety Information

a. Are the "high interest" chemicals that your company manufactures currently represented on ChemicalSafetyFacts.org? Yes/No (see accompanying list of chemicals currently represented on ChemicalSafetyFacts.org)

b. Recommend chemical(s) of "high interest" (see definition below) that your company manufactures and should be added to ChemicalSafetyFacts.org

31. Innovation to Reduce Risk

a. The number of ACC member companies with **sustainable chemistry programs** focused on innovating to improve the safety profiles of chemicals.

To qualify for inclusion in this measure, member company **sustainable chemistry programs** should reflect at least 4 of the 5 following concepts or something substantially similar:

- A sustainable chemistry training program[4] that provides awareness and knowledge to identify opportunities to **improve product safety profiles,** particularly in developing new chemistries. Programs should be in place across the organization including R&D, product development, business, commercialization, and environmental departments.
- External collaborations, partnerships or customer alliances aimed at education and training, or identifying innovation opportunities for sustainable chemistry.
- Periodic review of existing product portfolios to identify opportunities for innovation toward products with improved safety profiles.

[4] A training program that establishes requirements for sustainable chemistry training / knowledge / skills based on company roles and responsibilities related to product innovation.

- Consideration of external triggers (e.g., market or regulatory signals, and/or significant new information) that initiate an out-of-cycle risk-based product review.
- **A product development methodology** that incorporates "**advanced product safety assessments**" (See definitions).

An optional text box in the web-tool allows you to provide any additional explanatory information to support this metric. For example:

- If you responded **No** to the above, but have a sustainable chemistry program that you believe is similar in objectives even though it does not include the specific program elements listed above

- If you responded **Yes**, but the relevant elements you considered in your response to the question above exist independently across your company and are not integrated under one program

b. The number of innovations produced by ACC member companies intended to reduce human health risk across the product's lifecycle.

Members are encouraged to voluntarily submit narrative examples of their innovations to ACC for use as sustainability case stories.

ADDENDUM

Definitions

High interest chemicals: High interest chemicals may be selected because they are of high public interest, high interest to members, a source of frequent inquiry by stakeholders, or because they pose some other value for information gathering and sharing. This may include chemicals that have been designated as "low concern" or "low priority" by a government authority, yet are of interest to the public or other stakeholders.

Improved product safety profiles: Product innovations aimed at reducing health risks to the company's workers, and to those who handle and use the products along the value chain. The innovation is intended to focus on the potential impacts that chemical products, and the processes used to make them, have on human health. This includes reducing the hazard profile of the product, or reducing exposure through product design. However, this does not include reducing releases to the environment because these potential exposures are covered by ACC's other Sustainability metrics. It also does not include improvements to operational efficiency and resource use, as these issues are likewise addressed by other metrics.

Product Development Methodology: The product development methodology may be the company's "stage-gate" and/or innovation process.

Advanced Product Safety Assessment: High-level risk assessment, consistent with and builds upon frameworks found in NAS Redbook and ICCA Guidance on Chemical Risk Assessment. Reducing hazards is the initial consideration and the assessment may incorporate predictive toxicology and exposure tools, where appropriate.

FAQs

1. What are examples of innovations that should be counted in Measurement 3b?

The Product Safety Innovation metrics focus on **product and process innovations produced by ACC member companies related to the product safety aspects of sustainable chemistry**, which means they aim to reduce risk to human health and/or the environment (i.e., less persistent and/or less risk to the health of aquatic and/or terrestrial species) across the product's lifecycle. These innovations may be triggered by internal or external indicators (e.g., *market or regulatory signals, and/or significant new information*) or risk-based prioritization, which are independent of product safety determinations on existing products and processes.

They are not intended to include innovations with sustainability benefits realized through downstream uses (e.g., lighter cars, insulation materials) as this is will be captured in a separate innovation metric. In addition, process-related sustainability improvements, such as reductions in GHG emissions or water discharge, will be captured in media-specific sustainability metrics.

The following examples demonstrate the types of innovations that are intended to be captured by an ACC member company reporting under the product safety innovation metric:

- Developed a new product to replace or provide an alternative to an existing product that has a component on a government list designated for further risk management, or other organizational lists that are important to your business.
- Developed a new product to replace or provide an alternative to an existing product with a component with a lower hazard classification (i.e., the incumbent was classified or contained a component classified as a CMR, PBT, vPvT, and the new product or component has a lower hazard classification.)
- Modified a process or reformulated a product to lower potential risk to human health. For example: Replaced a solvent with one that is less hazardous either in a product formulation, used in the product process, or in cleaning manufacturing equipment.
- Modified a production process in order to use a less hazardous raw material in the manufacture of an existing product, thus reducing demand for the original raw material, which could potentially impact residuals in the product, eco-toxicity in the environment, and reduced worker exposure across the supply and value chain.
- Redesigned a process to incorporate continuous processing or other closed-loop systems that reduces exposure to reactants, intermediates, unintentional by-products, contaminants, and/or chemical products to workers and throughout the value chain.
- Redesigned delivery and handling of the product that reduces potential exposure to the chemical product throughout the value chain.

- Replaced a process catalyst with one that presents a lower risk to human health.

2. What are examples of innovations that should NOT be counted in Measurement 3b?

ACC will not capture innovations that are directed at reducing releases to the environment that are captured in other ACC Sustainability Metrics (i.e., air, water, waste, energy) unless there are improvements to the product risk profile or reduced exposure during manufacturing, distribution, storage, or customer handling. Guidelines for determining what is outside the scope of this metric include:

- Process changes that reduce or eliminate releases of hazardous substances to the environment (e.g., hazardous waste, water discharge, air emissions)
- Process changes that reduce consumption of energy
- Process changes that reduce consumption of natural resources
- Process changes that reduce GHG emissions
- Plastics recycling and/or reuse, including plastics to fuel technology, and other design for circularity innovations that do not result in improved product safety profiles.
- Routine upgrades using existing technology that result in reduced worker exposure.

The following examples demonstrate the types of innovations that, while they may be beneficial, are outside the scope of what this product safety innovation metric seeks to capture:

- Replaced a process catalyst with one that reduces energy consumption but otherwise does not directly lower risk to human health through exposure to the catalyst material.
- Redesigned a process to increase product yield and thereby, reduce waste, in accordance with EPA's waste management hierarchy pyramid.
- A new product is launched with a substituted raw material that is "sustainably sourced."
- Upgraded a pollution control device to reduce manufacturing air emissions.
- Substituted one-time use packaging material in a product for reusable packaging materials for the same product.
- Changed transportation from road (highway) to rail to reduce carbon emissions per quantity transported.

Supply Chain Management Metric

Rationale

The value and supply chains for the chemical industry position it as both a customer and supplier to numerous industry sectors. In this position, ACC members have the opportunity to demonstrate their commitment to the sustainability of their supply chains by evaluating the practices and operations of suppliers. This metric is designed to encourage members to evaluate their suppliers to promote responsible conduct on relevant environmental and social issues, especially as related to the chemical industry.

Measurements & Member Reporting Instructions

Supplier Sustainability Evaluation

32. **Does your company evaluate relevant sustainability practices associated with the operations of potential suppliers?**
    - **a.** Yes, our company evaluates relevant sustainability practices associated with the operations of potential suppliers.
    - **b.** No, our company does not evaluate relevant sustainability practices associated with the operations of potential suppliers.

33. **Does your company repeat supplier sustainability evaluations on a regular basis[5].**
    - **a.** Yes, our company evaluates relevant sustainability practices associated with the operations of potential suppliers.
    - **b.** No, our company does not evaluate relevant sustainability practices associated with the operations of potential suppliers.

34. **Does your company incorporate the following issues into their evaluation of suppliers[6]:**
    (Results to be collected by category for internal use only)
    - **a.** Environmental Regulatory Compliance: Your supplier evaluation considers whether supplier demonstrates evidence of compliance with applicable environmental regulatory requirements. (Yes/No)

[5] Supplier engagements whose duration is short term, such that the engagement ends before a re-evaluation would normally occur according to the time period a company determines is a 'Regular Basis' should be exempt from consideration under this metric and not prevent a company from answering in the affirmative.
[6] In the context of this disclosure metric, 'supplier' refers to both current and potential suppliers.

b. Occupational Health and Safety Performance: Your supplier evaluation considers whether supplier demonstrates evidence of attention to occupational health and safety, such as through evidence of safety programs, emergency planning, injury prevention programs, or other favorable health and safety metrics. (Yes/No)

c. Human Rights Considerations: Where relevant, suppliers are evaluated for potential human rights concerns, such as through evidence of appropriate labor practices or safeguards against human trafficking concerns within their workforce. (Yes/No)

d. Diversity and Inclusion: Your supplier evaluation considers whether suppliers demonstrate evidence of a commitment to promoting diversity and inclusion within their organizations. (Yes/No)

e. Responsible Sourcing of Agricultural Products *(If Applicable)*: Your supplier evaluation considers whether supplier demonstrates evidence that agricultural products used for raw materials and feedstocks are cultivated and harvested in a responsible manner to minimize environmental and human rights impacts. (Yes/No)

ADDENDUM

Definitions

Evaluate: Refers to an assessment based on inquiry, data collection, data review, interviews, site visits, surveys/questionnaires and/or other methods and information considered typical and appropriate for the topic being assessed by the reporting member.

Sustainability Practices: Refers to processes or procedures to identify, prevent, mitigate, improve and account for how an organization addresses its actual and potential negative and positive impacts on the environment, natural resources and human health. For example, practices aligning with, or similar to, the UN Global Compact principles and goals, such as those articulated by the UN Sustainable Development Goals, would constitute "sustainability practices" for purposes of this metric.

Impact: 'Impact' refers to the effect an organization has on the economy, the environment, and/or society, which in turn can indicate its contribution (positive or negative) to sustainable development.

For any factor or other consideration, '**Relevant**' refers to those that are most appropriate for the supplier from the context of the reporting ACC member. Determinations on items to consider should be made by the reporting member company based on its own assessment of issues that intersect most significantly with the related operations of the supplier.

Regular Basis: Members determine what frequency they consider to be a "regular basis" for their own assessment practices and programs, but for purposes of metric No. 3, a single initial assessment, without more, would not be considered a "regular basis." Note the exception of short duration engagements with suppliers explained in the footnote below

Supplier: Organization or person that provides a product or service used in the supply chain of the reporting organization. In the context of this metric, 'supplier' refers to both current and potential suppliers.

Supplier Evaluation: Formal or documented process that applies a set of performance criteria as one of the factors in determining whether to proceed in a relationship with a supplier.

Diversity: Diversity refers to the similarities and differences between individuals accounting for all aspects of one's personality and individual identity, including age, color, disability, ethnicity/national origin, family status, gender and gender identity, race, religion, sexual orientation and veteran status.

Inclusion: Inclusion refers to giving equal access and participation opportunities to all people. It is what enables an organization to realize the social, business and economic benefits of its full potential to draw on a diverse set of employees.

Circularity Metric

Rationale

The intent of this metric is to develop baseline information about ACC member companies' pursuit of greater circularity and to inform more mature measurements for potential adoption in the future. Strategy group participants unanimously agreed that any initial metric should account for the varying levels of maturity across ACC membership and believe this approach will provide the necessary accessibility. As with other approved sustainability metrics, information collected as a result of this metric will be presented in the aggregate until the Board of Directors approves a shift to company-by-company reporting, a question that will not be revisited by the Board Sustainability Committee until 2022.

Measurements & Member Reporting Instructions

In keeping with the Circularity Principles and Circularity Metric Objectives and Guidelines, the metric is organized as screening level questions affirming the existence of circularity goals, a secondary set of questions to gather details around the specific elements being measured, and a third question allowing companies to indicate if they are applying a third party framework to their circularity efforts.

35. Has your company set goals to address circularity?

a. Yes/No

36. If you have set goals, has your company made your goals public?

a. Yes/No

37. Which of the following specific attributes does your company incorporate in your circularity strategy? (Please select ALL that apply):

a. Material and natural resource tracking based on a mass balance model
b. Process efficiency improvements including energy and water efficiency
c. Feedstocks sourced from non-virgin sources
d. Feedstocks sourced from bio-based materials
e. Byproducts directed toward use rather than waste treatment
f. Product portfolio optimized for reuse, repurpose or recyclability
g. Durable life of products
h. Enhancements to product portfolio based on circularity benefits
i. Recyclability of products via mechanical or advanced recycling technologies

38. Is your company making specific investments in innovation to potentially advance new technologies to promote circularity principles?

a. Yes/No

39. Is your company engaged in partnerships or collaborations with the value chain, academia and /or governments to address circularity barriers and needs?

a. Yes/No

40. Does your company use a third-party circularity framework to measure circularity?

a. Yes/No
b. If yes, please indicate the third party framework utilized to assess circularity:
    i. ISCC+ certification
    ii. Material Circularity Indicator, Ellen MacArthur Foundation
    iii. Circle Scan, Circle Economy
    iv. Circularity Check, Ecopreneur
    v. Circularity Transition Indicator, WBCSD
    vi. Other? (please provide names of others)