Sustainability Metrics Guidance Documents

On 9 Metrics Approved by ACC Board

2020 July Draft
Subject to Future Updates

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

Kathryn St. John: Kathryn_stjohn@americanchemistry.com | (202) 249-6513
Bryan Kuppe: Bryan_kuppe@americanchemistry.com | (202) 249-6199
Sharon Dubrow: Sharon_Dubrow@americanchemistry.com | (202) 249-6192

Table of Contents

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**
   Report the amount of chemical in pounds that is released to air for each chemical required to be reported to EPA under the Toxics Release Inventory (TRI) program.

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), Nitrous Oxide (NOx) (Currently reported under RC),* and Volatile Organic Compounds (VOCs)
      iii. Other relevant **Criteria Pollutants** as defined by the Clean Air Act

3. **Aggregate number of source reduction initiatives by calendar year (CY) the initiative began and reductions achieved through any initiatives for the current reporting year (RY)**
   a. ACC members will report data on source reduction initiatives for the CY in which the initiative began

b. ACC members will report the quantitative emission reductions achieved in the current RY through any source reduction initiative

Timing for Reporting

Reporting timeline and process to be determined.
For TRI data, ACC to utilize third-party contractor for pulling TRI data directly from EPA/publicly available sources after the October public release.

ADDENDUM

Definitions

1. **Facilities required for EPA reporting:** ACC members will provide data reported to EPA's TRI program related to chemicals entering the air. 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.

2. **Source Reduction:** for purposes of this metric source reduction will 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" does not 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).

3. **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 10micrometers 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.

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

Existing Responsible Care Metrics

Hazardous Air Pollutant (HAP) Emissions

Definition

HAPs: TRI air releases of HAPs covered under Title III of the Clean Air Act that are also covered under TRI reporting requirements.

See **Appendix A** in existing Responsible Care HAP Emissions metric for the list of HAPs reportable under this metric.

Member Reporting Instructions

***Important* Facility ID's:** Members should first add their EPA issued Facility Identification Numbers to the in the "Next Year Information" section before verifying their current year data. Once this is complete, the contractor can pull the data from EPA's database for the next reporting year.

Instructions: The ACC will upload the HAPs information into the web-based metrics data management system and member companies will be able to verify the data during the data entry period each year. Any discrepancies should be noted by each company and reconciled using the comment process embedded in the data management system. Once the company has reviewed this data and commented on any discrepancies, they will then have to approve it before the ACC will begin its approval process.

Timing for Reporting

Data will be due February 28, 2019.

Sulphur Oxides (SOx) and Nitrogen Oxides (NOx)

Definition

Reportable SOx and NOx Emissions: ACC member companies will report annual emissions inventory for criteria pollutants, NOx and SOx, for those company sources within facilities that would otherwise be required to prepare and submit annual emissions inventory as per their respective permitting / regulatory requirements. Although state reporting requirements for SOx and NOx emission vary in terms of scope (e.g. some states require SOx reporting while others require only SO_2), ACC's reporting defers to the state reporting requirement. This allows ACC's reporting to align with the data that are publicly available through state programs. In order to understand the extent of capture of these data, ACC member companies will also be required to provide data regarding number / percentage of their facility operations for which these data are required, and therefore reported.

Member Reporting Instructions

This information will be collect via the web-based data management system. Each member company will have to log onto this site and report:

a) Total SOx air emissions in pounds
b) Total NOx air emissions in pounds
c) The total number of facilities included in ACC membership
d) The total number of facilities required to report SOx and NOx as a permit requirement.

Once the company has entered in this data, they will then have to approve it before the ACC will begin its approval process.

Reporting should include facilities that fall under the ACC dues base

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

Data gathered and/or estimated by ACC Economics Department and reported publicly for items 1-3:

1. **Average Wages and Total Value of Benefits in USD$ as Compared to all Manufacturing Sectors**

2. **Economic Contribution in USD$ to States and Nation**

3. **Industry Contributions to National and State Tax Bases**

Data gathered from ACC member companies and publicly reported in aggregate by ACC:

4. **Aggregate Industry Total Charitable Contributions in USD$**

5. **Aggregate Local Procurement Investment** *(NOTE: Members will report aggregate dollar amount spent on goods and services with local suppliers. This can be calculated by either using suppliers located with 250 miles of the facility or referencing a Metropolitan Statistical Area as defined by the U.S. Census Bureau.)*

6. **Percent of Relevant Member Facilities Engaging with a Local Community Advisory Panel (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.)*
    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.

7. Aggregate Total Paid Hours Employees Spend Volunteering

a. ACC Members will report *total paid volunteer hours spent by employees* in <u>total hours for the organization (not by individual employee)</u>.

<u>Timing for Reporting</u>

Reporting timeline and process to be determined.

ADDENDUM

Definitions

Supplier: Organization or person that provides a product or service used in the reporting member company's supply chain and is compensated for that product or service

> Note 1: A supplier is further characterized by a genuine direct or indirect commercial relationship with the organization.
>
> Note 2: Examples of suppliers can be found in the *GRI 204: Procurement Practices 2016* (https://www.globalreporting.org/standards/media/1005/gri-204-procurement-practices-2016.pdf)

Local Supplier: Organization or person that provides a product or service to the reporting member company, and that is based in the same geographic market as the reporting company (that is, no transnational payments are made to a local supplier)

Core Based Statistical Area (CBSA): A statistical geographic entity consisting of the county or counties associated with at least one core (urbanized area or urban cluster) of at least 10,000 population, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties with the counties containing the core. Metropolitan and Micropolitan Statistical Areas are the two categories of Core Based Statistical Areas.

Metropolitan Statistical Area: A CBSA associated with at least one urbanized area that has a population of at least 50,000. The Metropolitan Statistical Area comprises the central county or counties containing the core, plus adjacent outlying counties having a high degree of social and economic integration with the central county or counties as measured through commuting.

Micropolitan Statistical Area: A CBSA associated with at least one urban cluster that has a population of at least 10,000, but less than 50,000. The Micropolitan Statistical Area comprises the central county or counties containing the core, plus adjacent outlying counties having a high degree of social and economic integration with the central county or counties as measured through commuting.

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.

Corporate volunteering: The total number of 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.

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.

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

1. **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.

2. **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.

Timing for Reporting

Company data will be due XXXX XX, 202X. Members will reference a baseline year of CY2015 for reporting.

ADDENDUM

Definitions

1. **Renewable Energy:** The U.S. Energy Information Administration, under 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

2. **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.

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

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

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

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

7. **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.

Existing Responsible Care Metrics

1. **Company energy efficiency**

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 Pollution Prevention Code of Responsible Care®.

See **Appendix C** for instructions, **Appendix D** for an example survey and **Appendix E** for FAQ's in the existing Responsible Care Energy Efficiency metric.

Member Reporting Instructions

The ACC Energy Efficiency and Greenhouse Gas Emissions Survey will be used for data collection for this metric. An on-line version of this survey must be completed by members within the data management system. Members will also have the option of completing the survey via excel spreadsheets and uploading the data directly onto the data management system. This data will be released to the public only as aggregated ACC membership data.

As part of the Responsible Care Strategic Review, the GHG and EE emissions factors have been aligned with the EPA Mandatory Greenhouse Gas rule – effective 2014

Timing for Reporting

Company will be due by May 31, 2019

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

1. **Member company GHG emissions intensity, incorporating direct and purchased emissions**
   The ACC Energy Efficiency and Greenhouse Gas Emissions Survey will be used for data collection for this metric. An on-line version of this survey must be completed by members within the data management system. Members will also have the option of completing the survey via excel spreadsheets and uploading the data directly onto the data management system. This data will be released to the public only as aggregated ACC membership data.

2. **Percentage of Membership Publicly Committed to Reduce Actual GHG Emissions & Resulting Aggregate Reductions**
   ACC members will report on the existence of public commitments to reduce actual GHG emissions and the resulting aggregate GHG reductions. Reductions will be reported in the same format as ACC's Greenhouse Gas Intensity metric, expressed as pounds of carbon dioxide (CO_2) reduced during the reporting year. Companies without public commitments should still disclose any reductions year over year.

3. **Percentage of Membership Publicly Committed to Reduce GHG Emissions Intensity and Resulting Aggregate Reductions**
   ACC members will report on the existence of public commitments to reduce GHG emissions intensity and the resulting aggregate reductions. Reductions will be reported in format of ACC's Greenhouse Gas Intensity metric, expressed as pounds of carbon dioxide (CO_2) per pound of production reduced during the reporting year. Companies without public commitments should still disclose any reductions year over year.

Timing for Reporting

Reporting timeline and process to be determined.

ADDENDUM

Definitions

1. **Greenhouse Gases (CO_2 equivalents)*:*** Includes carbon dioxide, methane, nitrous oxides, HFC, PFC, and SF6.

2. **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.

Existing Responsible Care Metrics

1. **Aggregate actual GHG emissions direct and purchased from U.S. Operations**

Definitions

Greenhouse Gases (CO_2 equivalents): Includes carbon dioxide, methane, nitrous oxides, HFC, PFC, and SF6.

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.

See **Appendix C** for instructions, **Appendix D** for worksheets and **Appendix E** for FAQ's in the existing Responsible Care GHG Intensity metric.

Member Reporting Instructions

The ACC Energy Efficiency and Greenhouse Gas Emissions Survey will be used for data collection for this metric. An on-line version of this survey must be completed by members within the data management system. Members will also have the option of completing the survey via excel spreadsheets and uploading the data directly onto the data management system. This data will be released to the public only as aggregated ACC membership data.

As part of the outcomes of the 2014 Responsible Care Strategic Review, the GHG and EE emissions factors have been aligned with the EPA Mandatory Greenhouse Gas rule.

Timing for Reporting

Company data will be due by May 31, 2019.

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 land disposal methods 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

1. **Total Volume of Hazardous Waste**
   a. "Hazardous waste volume," consistent with what member companies report (or would report) on federal EPA biennial reports.
   b. U.S.-based data (aligns with current Responsible Care® reporting).

2. **Percent of Hazardous Waste Diverted from Land Disposal (%HWD)**
   a. %HWD = (total amount of hazardous waste recycled or converted to energy / total hazardous waste) x 100.
   b. Identify and track "recycled and converted to energy" hazardous waste quantities in the aggregate by using *Reclamation and Recovery Management Method Codes* on the U.S. Environmental Protection Agency (EPA) biennial report form.

3. **Hazardous Waste Intensity**
   a. HWI = (total hazardous waste / total chemical production mass).

Timing for Reporting

Reporting timeline and process to be determined.

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 (*to be further developed and defined*)

1. *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.

2. *Converted to energy:* Materials that can be categorized as meeting Reclamation and Recovery management method codes on EPA's biennial reporting form. See https://www.epa.gov/sites/production/files/2015-06/documents/codes.pdf

3. *Diverted from land disposal:* Defined as the sum of hazardous waste materials that are either recycled or converted to energy, and thus do not result in their land disposal.

4. *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).

5. *Recycled*: Materials that can be categorized as meeting Reclamation and Recovery management method codes on EPA's biennial reporting form. See https://www.epa.gov/sites/production/files/2015-06/documents/codes.pdf

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

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

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

Diversity of Governance Bodies

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

i. Male
ii. Female
iii. Minority
iv. (Optional) Other under-represented populations

Diversity of Workforce

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

i. Male
ii. Female
iii. Minority
iv. (Optional) Other under-represented populations

c. Percent of individuals in company's management and/or leadership ranks in the following categories:

i. 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) **U.S. census minority availability data will be included for context.)*

Supply Chain Diversity

d. Companies will report to ACC and ACC report publicly in the aggregate:

i. Aggregate of procurement dollars spent in the U.S. to suppliers that are private companies owned by women, minorities or other underserved populations, excluding feedstocks

2. Measurements Regarding Future Workforce Growth: To be reported to ACC by each member company, and ACC will report publicly in the aggregate.

a. 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? YES/NO

b. Does your company conduct a recruitment program(s) to solicit applications from a diverse applicant pool? YES/NO

c. 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? YES/NO.

Addition to the Diversity and Inclusion Metric
Request for Approval

Additional measurement to Diversity & Inclusion Metric:

Diversity of Governance Bodies

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

i. Male
ii. Female
iii. Minority
iv. (Optional) Under-represented populations

ADDENDUM

Definitions

General Terms

1. *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.
2. *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.
3. *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.
4. *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

5. *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.
6. *Manager:* A manager holds a senior position in the organization and supervises other employees, and/or helps set policies, drives change inside the organization.
7. *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

8. *Supply Chain Diversity*: For purposes of this metric, supply chain is defined as business suppliers from whom you purchase goods and services when the supplier is a small business or a women-owned, veteran-owned or a minority-owned company.
9. *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.
10. *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.
11. *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.*
12. *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 which have decision-making authority or significant influence over strategic or management decisions with the potential to have organization-wide impacts. 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.

Water Management Metric

Goal: To focus our efforts and resources to drive industry-wide improvements over time.

Background: 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. ACC member company CEOs prioritized a water management metric when they met in June, 2019.

The Board-approved (Nov. 2019) Water Management Metric is broken down into three parts:

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 report the percent of ACC Member companies who 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 and includes new measurements related to permit compliance that can help inform an assessment of potential impacts on water. To go beyond regulation, this metric proposes an assessment framework that could be adopted by member companies to evaluate and further reduce the risk of water quality impacts.

Part 3: 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

Water Use and Efficiency

Members to report the following data to ACC to support aggregate measurements:

1. **Water Withdrawn**[1,2]
   ACC members to report total water withdrawn in gallons for the reporting year.
   a. _____ Gallons (Total)

   For facilities with one or more cooling towers, report the volume included in Water Withdrawn that is associated with cooling tower operations for the reporting year.
   b. _____ Gallons (used in cooling towers)
2. **Estimated Water Reuse**[3]
   ACC members to report best available estimates for water reused.
   a. _____ Gallons (Total)

   For facilities with one or more cooling towers, report the volume included in Water Reuse that is associated with cooling tower operations for the reporting year.
   b. _____ Gallons (reused in cooling towers)
3. **Total Units of Production**
   Value to be used as normalization factor for *Water Intensity* calculation.
   a. _____ Units

ACC to <u>publicly report</u> when publishing commences[4]*:*

1. **Industry Water Use Performance, Year Over Year Change**[5]
   ACC to aggregate member company annual water withdrawn (gallons) data
2. **Estimated Industry Water Reuse Year Over Year Change**[5]
   ACC to aggregate member estimated water reused (gallons), over total withdrawn (gallons) to produce estimated % of water withdrawn that is reused.

   <u>Estimated Aggregated Water Reused</u>
   (Aggregated Water Withdrawn + Reused) 〓 Estimated % of Water Withdrawn That is Reused
3. **Industry Water Use Intensity Year Over Year Change**[5]
   Aggregate member water withdrawn over aggregate member total units of production to estimate industry water use intensity.

   <u>Aggregated Member Water Withdrawn</u>
   Total Units of Production 〓 Gallons per Unit of Production (Intensity)
4. **Technologies Implemented**
   Have you implemented techniques or technologies to promote reductions in water withdrawn?
   Yes/No
5. **Water Stress Assessment**

[1] Definition and reporting instructions for "Water Withdraw" will be intended to be consistent with Water Intake elements of the "Water Consumption" metric currently reported through Responsible Care®
[2] Members will report Water Withdrawn for fresh water only
[3] Members will report Estimated Water Reuse for fresh water only
[4] Member companies may reserve the right to adjust the baseline year to account for mergers and acquisitions
[5] ACC to publish year over year change with CY2020 as the referenced baseline year

Have you conducted a water stress assessment for each of your facilities?[6]
Yes/No

Water Quality & Protection

a. Toxics Release Inventory (TRI) releases[7]:

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[7,8.] All EPA thresholds and exclusions apply.

b. Accidental Releases to Water:

i. Report the number of Responsible Care® Process Safety Incidents[9] collected under current API RP-754 metric that resulted in a release to a water medium.

ii. The number of calls that were made to the National Response Center (NRC) for releases to water, and the number of events that required a response beyond initial notification. See http://nrc.uscg.mil/.

Note: The number of calls made to the National Response Center (NRC) includes those related to releases of CERCLA Hazardous Substances[10] that require a response beyond initial notification. Examples of a response actions beyond initial notification include: 1) a removal action to prevent imminent potential harm or spread of the release, 2) a public health assessment, and/or 3) a long-term remedial action.

This metric does not include calls made to the NRC for EPCRA Extremely Hazardous Substances (EHS)[11] that are not also included as CERCLA hazardous substances. While there is some overlap between the EPCRA and CERCLA hazardous substances, releases of EPCRA EHS that are not CERCLA substances typically require only state/local reporting. [12]

There was discussion around whether ACC would be able to pull this information In addition, for members to review; the consensus at this point is that it would not be

---

[6] For the purposes of this metric, "water stress" will be 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/

[7] For TRI data, ACC to utilize third-part contractor for pulling TRI data directly from EPA publicly available sources after their October public release

[8] EPA Toxics Release Inventory Reporting Forms and Instructions https://ofmpub.epa.gov/apex/guideme_ext/f?p=guideme:rfi-home

[9] Responsible Care Performance Metrics Guidance Document, current year, provides instruction on reporting Process Safety Incidents in accordance with API RP-754. Report Tier 1 and Tier 2 incidents separately.

[10] CERCLA hazardous substances and the reportable quantities (RQ) that triggers reporting to the NRC are listed in 40 CFR 302.4 Table 302.4. CERCLA hazardous substances also include wastes exhibiting characteristics of ignitability, corrosivity, reactivity, and toxicity (lCRT) under RCRA (40 CFR 261.20 through 261.24.)

[11] EPCRA Extremely Hazardous Substances - Appendix A and Appendix B Emergency Planning and Notification (40 CFR part 355)

[12] EPCRA Emergency Notification requirements: https://www.epa.gov/epcra/epcra-section-304

feasible for ACC to gather this data and that each member company would need to gather the information.

c. National Pollutant Discharge Elimination System (NPDES) Permitted Discharges to Water:

Report the number of exceedances of permitted allowances.

(NOTE TO MEMBERS: Reported exceedances should include only significant noncompliance (SNC) incidents, as defined by EPA SNC Criteria 1 and 2[13])

d. Water Body Risk Assessment, Management and Mitigation:

Number of companies that have attested to conducting an assessment of facility impacts on receiving water bodies.

Measurements to be reported to ACC by each member company:

_____ Total number of company facilities covered under ACC dues fees
_____ Number of those relevant facilities with completed Water Risk Assessments

Measurement to be reported out from ACC in the aggregate:

_____ Percent of ACC member facilities which have completed a Water Body Risk Assessment

Water Body Risk Assessment, Management and Mitigation:

Number of companies that have attested to conducting an assessment of facility impacts on receiving water bodies. The objective of this holistic water body risk assessment is to look beyond regulatory compliance activities at all potential factors. For example, the assessment could consider the potential water impacts of research and development products.

Members can use the below elements as a High Level Framework for consideration. This framework is suggested as a range of ideas and is not intended to be a prescriptive set of steps. Rather, the members will use this framework to attest that they have completed work in a "Plan, Do, Check, Act" model addressing at minimum three core categories: assessed risk, considered mitigations and are prepared to re-evaluate the potentials risks at each of their facilities.

- **1) ASSESSMENT PHASE should include efforts to:**

[13] EPA Memorandum, "Significant Noncompliance (SNC) Criteria for National Pollutant Discharge Elimination System Violations, Sept 21, 1995. https://www.epa.gov/sites/production/files/documents/revisnpdessnc.pdf

- Conduct an organized review and assessment of all of your facilities for potential risks to water bodies[14] and categorize risks by importance
- Identify if the facility falls within a state's designated Source Water Protection Area
- Review a facility's proximity to public water systems intake locations and assess if any potential releases of contaminants (permitted and accidental) could reach those intake locations. Assess and understand operational water use and discharge in relation to local area water bodies.
- Consider information from various U.S. water regulatory programs or other existing sources and regulations (e.g., SPCC, SWPPP, NPDES) that inform potential water risks.
- Consider potential water impacts from non-production operations and business decisions, such as product design and raw material selection.

- **2) MITIGATION PHASE should include efforts to:**
  - Implement site-specific operational practices that mitigate the risk to adjacent water bodies, including risk management and mitigation initiatives that go above and beyond standard storage, use and on-site transport or containment practices
  - Assess if there should be an increased frequency of inspections of relevant equipment, storage methods and transport systems
  - Implement management measures to prevent, reduce or eliminate risks
  - Develop contingency planning strategies that address potential risks
  - Include water use, operational efficiency and protection considerations as part of the organizations process and product design and changes to these processes
- **3) RE-EVALUATION PHASE should include efforts to:**
  - Designate a point person to review and execute the risk assessment process and any potential mitigation actions
  - Create a central repository of water-risk information, emergency plans, relevant operations staff, and set a timetable for re-evaluation of mitigations actions.

4. Water Innovation

a. <u>Measure new products or technologies around water treatment:</u>

i. Potential measurements around water treatment innovations where quality of treated water returned is of higher quality overall than the source water it is being returned to.

b. <u>Measure new products or technologies around water use efficiency:</u>

i. Number or dollars associated with geographically focused supply projects to protect or improve the health of key water bodies or water systems;

ii. Number of collaborative projects to protect key watersheds;

[14] For purposes of this Water Body Risk Assessment, water bodies shall include all reservoirs potentially impacted by the facility, including both surface water and groundwater aquifers.

iii. Number of products or technologies that contribute to improved water use efficiency.

Addendum

Definitions

Water Withdrawn: The total amount of water pumped, piped or otherwise brought on-site for use in manufacturing and related activities. Excludes storm water (See Appendix A)

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 for Members

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/

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.

Significant Non-Compliance (SNC): Apply the EPA definition. For full-definition and guidance available in **Appendix B**; for purposes of this metric the first two criteria will be applied.

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 reused 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 Members who shares 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®.

Does "Accidental Releases to Water" include potential groundwater contamination?
No, the scope of this metric is surface water. It does not include groundwater because it would potentially broaden the scope to include all land releases, which is not the focus of this particularly measure.

Do the "number of calls that were made to the National Response Center (NRC) for releases to water" apply to both CERCLA Hazardous Substances and EPCRA Extremely Hazardous Substances?

The number of calls made to the National Response Center (NRC) includes only those related to releases of CERCLA Hazardous Substances[10] to water, and that require a response beyond initial notification. Examples of a response actions beyond initial notification include: 1) a removal action to prevent imminent potential harm or spread of the release, 2) initiating a public health assessment, and/or 3) a long-term remedial action.

This metric does not include calls made to the NRC for EPCRA Extremely Hazardous Substances (EHS)[11] that are not also included as CERCLA hazardous substances. While there is some overlap between the EPCRA and CERCLA hazardous substances, releases of EPCRA EHS that are not CERCLA substances typically require only state/local reporting.[12]

What is the intent of the Water Body Risk Assessment, Management, and Mitigation measure?
To determine the risk of an impact from facility operations to nearby water bodies, including groundwater, and identify opportunities for risk management and mitigation actions, including innovative, sustainable solutions.

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[15], and The Ceres Aqua Gauge™[16]

How often should the water risk assessment be updated?
Revisiting an assessment approximately every 2-3 years is a typical benchmark for considering any changes in process or new information.

Additional Notes

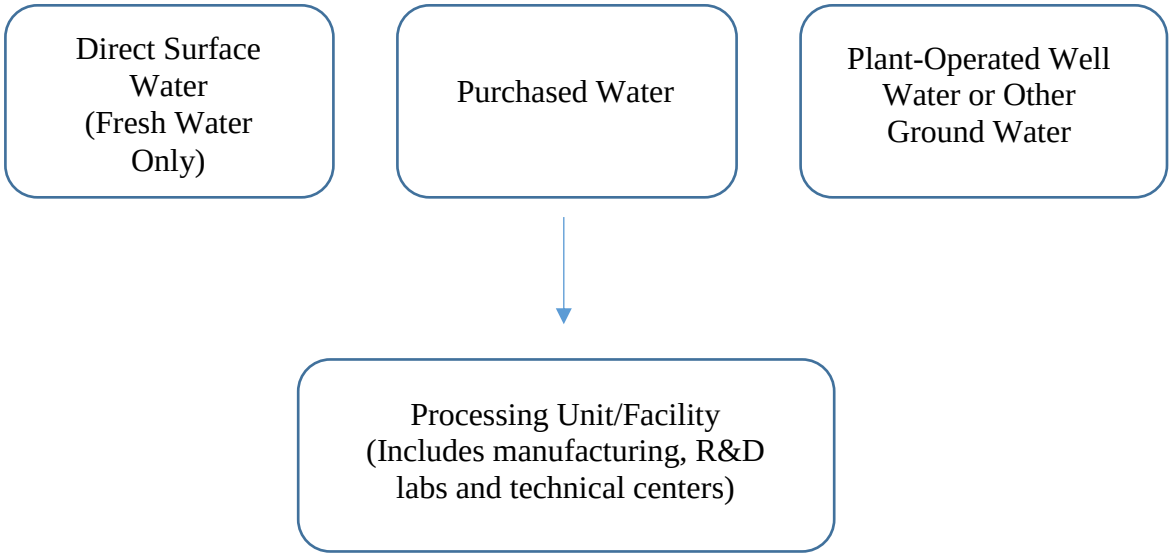
[15] CEO Water Management Water Risk Assessment tools: https://ceowatermandate.org/collectiveaction/resources/assess-and-engage/

[16] 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

Technologies Implemented Maturity Model: ACC acknowledges the limitations of the current metric to effectively communicate the specific innovations or technologies that members may be deploying in order to promote reductions or more effective reuse of water resources. ACC staff will work in consultation with member company representatives to develop a mechanism for greater promotion of these investments.

Water Stress Maturity Model: ACC acknowledges the importance of contextualizing Water Use and Efficiency metrics through the perspective of relative water stress of regions where water resources are being used or impacted. ACC staff will work in consultation with member company representatives to build a more comprehensive strategy and communication around the efforts of the chemical industry to prioritize regions in the United States with high baseline water stress with the intent to more adequately address and effectively communicate on water use issues beyond the current iteration of this metric.

Appendix A – Water Withdrawn Calculation



Note to Members: For reporting National Pollutant Discharge Elimination Systems (NPDES) Permitted discharges to water, to enable members to report exceedances of permitted discharges, members can reference Significant Noncompliance (SNC)[13] criteria as defined under items #1 and #2 below.

Appendix B – EPA "Significant Non-compliance"

Significant Noncompliance (SNC)

1. Effluent Violations of Monthly Average Limits

   a. TRC Violations – A 40% exceedance of specific pollutant limits listed in Exhibit A or a 20% exceedance of a specific pollutant limit from Exhibit B at a given discharge point for any two or more months during the two consecutive quarter review period is SNC.

   b. Chronic Violations – Violation of any monthly effluent limit at a given pipe by any amount for any four or more months during the two consecutive quarter review period is SNC.

2. Effluent Violations of Non-Monthly Average Limits

   TRC and chronic SNC criteria are the same as for monthly average violations as described in section 1.a. and b. above. However, the following caveat also applies: When a parameter has both a monthly average and a non-monthly average limit, a facility would only be considered in SNC for the non-monthly limits if the monthly average is also violated to some degree (but less than SNC).

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 the product safety 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

1. **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. Later in the year, ACC will distribute results on the number of assessments, by chemical and organization that conducted the assessment, to companies participating in the pilot study for review and feedback. 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). The reported chemicals will be further broken down based on the following CDR indicators: 1) Consumer and/or commercial use, 2) Industrial use, 3) Imported, or 4) Imported and never physically at the site. *TSCA exemptions and CBI exclusions apply.**

2. Number of "high interest" chemicals for which chemical safety information is provided by industry in a consistent, useful and understandable format.

For purposes of the pilot test, member companies should:

- *Are the "high interest" chemicals that your company manufactures currently represented on ChemicalSafetyFacts.org? Yes/No (see accompanying list of chemicals currently represented on CSF.org)*
- *Recommend chemical(s) of "high interest" (see definition below) that your company manufactures and should be added to CSF.org*
- *Are you willing to provide feedback on the form and content of information presented on CSF.org (separate from pilot)? Yes/No*

3. 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[17] 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.*
- *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).*

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

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

1. **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.

2. **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.

3. **Product Development Methodology**: The product development methodology may be the company's "stage-gate" process. Advanced product safety assessments may be incorporated at several stages of the process, such as:
   - Initial screening of new chemistry using predictive toxicology and exposure tools, where appropriate (e.g., EPA Chem Dashboard, OECD Toolbox, QSAR tools).
   - Initial stage-gate that includes an assessment of hazard characteristics and can lead to reformulation to lower risk including and up to termination of product development.

- Initial stage-gate that assigns preference to product development candidates that lead to reduced risk to human health, or reduced uncertainty in risk to human health.
- Detailed health and safety investigation that includes a resource-intensive study for high-priority products.

4. **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 are intended to capture potential reductions in human health risk through:

a) Products with lower toxicity through innovation in product or process;

b) Reduced exposure through innovation in product or process (e.g., including delivery system).

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.
- Redesigned a process to incorporate continuous processing or other closed-loop systems that reduce worker exposure to reactants, intermediates, unintentional by-products, contaminants, and/or chemical products.

- Constructed a solvent recovery system to recover solvent that is part of the manufacturing process, but not part of the product. The new system reduces the potential for worker exposure to a hazardous substance.
- 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

Goal: To demonstrate ACC member commitment to promote sustainable practices throughout their supply chains.

Background: 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

Members to report the following to ACC.

Supplier Sustainability Evaluation

1. **Percentage of ACC members that evaluate relevant sustainability practices associated with the operations of potential suppliers.**
   (Yes/no question with result based on the total percentage of members responding "yes.")

2. **Percentage of ACC member companies that repeat supplier sustainability evaluations on a regular basis[18].**
   (Yes/no question with result based on the percentage of members responding "yes.")

3. **Percentage of ACC members that incorporate the following issues into their evaluation of suppliers[19]:**
   (Yes/no question for each of the listed categories. 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)
   - **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)

[18] 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.

[19] In the context of this disclosure metric, 'supplier' refers to both current and potential suppliers.

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 U.N. 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.