Preparing Your Organization for Climate Accounting and ESG Reporting

by Masa Maruyama,
CEO
HULFT, Inc.

01 WHY START A CLIMATE ACCOUNTING INITIATIVE, AND HOW

It wasn't long ago that sustainability programs and environmental, social and governance (ESG) issues were on the not-doing-now list for most companies. Executives typically said that significant increases in spending against vague results were the reasons why they kept their sustainability initiatives in the incubation phase.

But in the past three years, we've witnessed much clearer successes with companies such as Schneider Electric, Boeing, and Schnitzer Steel that achieved tangible business results. In addition, actions taken by the Securities Exchange Commission (SEC) and the Task Force on Climate-Related Financial Disclosures (TFCD) requiring more ESG reporting and climate accounting, mainstream companies and industries now need to plan more aggressively.

As another indicator, we can look to the global consulting firms that have ushered in many new global business trends of lasting importance. McKinsey, Deloitte, Bain and KPMG now have strong ESG and climate accounting practices that are at least 5 years old. Comparing this to their involvement with Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) software, many different accounting initiatives including the Dodd-Frank Wall Street Reform, Consumer Protection Act and the JOBS Act, we can assume that their mature consulting practices are also a signal that climate accounting is moving towards the mainstream.
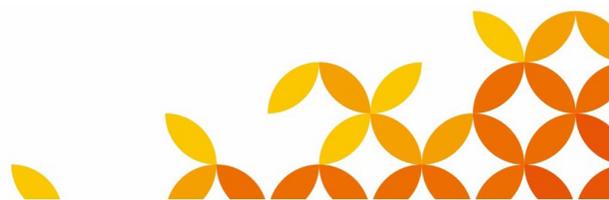
Benefits that Drive the Bottom Line

If ESG and climate accounting is still a conversation on the expense side of your balance sheet, it's time to broaden your company's understanding of ESG and sustainability, and start finding the reasons why it can improve your sales, customer and partner relationships, and spending. Here are some common motivators:

- **Reduced operational costs and mitigating climate risk** — Decreased business travel, improved production efficiencies, optimized supply chains, reducing waste.

- **Increased competitive advantage** — In addition to customer and brand perceptions of pro–sustainability customers, you should expect that your target customers could also prioritize awarding contracts especially if they have strong sustainability initiatives themselves.

- **Potentially higher company valuations** — Wall Street increasingly favors those that have less climate–related risk. In addition, a recent study by McKinsey and prospective acquirers will pay a premium for forward–thinking companies on this front, especially if they will be an addition to their overall ESG posture.

- **Meeting increased stakeholder expectations** — Customers, investors, employees and other stakeholders expect organizations to be transparent about their environmental impact and take action to reduce it.

- **Strengthen your brand image with consumers and partners** — In a recent consumer survey, 71% of participants said they'd pay a price premium for a sustainable brand, and 49% said they've paid a premium for products branded as sustainable in the last 12 months (IBM and the National Retail Federation). Moreover, between 2013-2019, products marketed as sustainable grew 5X faster than those that weren't.
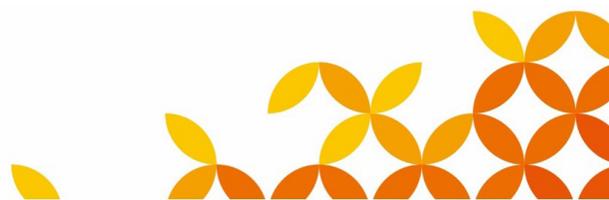
First Steps For Climate Accounting Initiatives – Executive Actions

Assuming you have a person or a small team named to drive your ESG programs, here are the specific task categories that you should be monitoring, and align proper resources to make them successful:

- **Gather essential data** — Consider all relevant aspects of your operations, such as energy use, transportation, and waste management. Ensure that you have a robust data collection and management system in place to ensure the accuracy and reliability of that data.

- **Conduct a TCFD gap analysis** — Know what metrics you'll need
- to measure and report on, and the information sources you will need to include.

- **Establish your climate accounting and carbon pricing strategy** — Conduct scenario analysis and internal carbon pricing Integrating climate risk into core risk management including processes and controls.

- **Begin technology budgeting and change management planning** — What new systems will you need to track, measure, report and monitor your progress? What new employees, departments and processes will you need to sustain your initiatives?

The earlier you start your climate accounting initiative, the more time you have to understand your emissions, identify areas for improvement, and implement strategies to reduce them. Additionally, starting early can help you stay ahead of any future regulations or changes in stakeholder expectations.
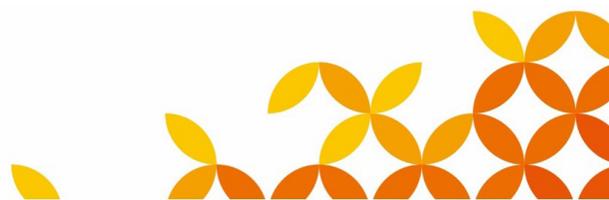
02 BEGIN YOUR DATA GATHERING NOW

Last year, we witnessed regulatory organizations become more specific than ever about how companies around the globe should report on climate accounting initiatives. There were many developments related to the Greenhouse Gas Protocol (GHGP), The Task Force on Climate-Related Financial Disclosures (TCFD), the Global Reporting Initiative (GRI), and The Sustainability Accounting Standards Board (SASB).

Just as significant, the United States government took further action with the passage of the Inflation Reduction Act (IRA) with a major climate bill inside. In Europe, the Corporate Sustainability Reporting Directive (CSRD) became law on January 5, 2023. In Q2 2023, the Securities and Exchange Commission will provide further guidance on its March 2022 rules proposal including the definition of full transparency for carbon emissions and climate risks.

All of this regulatory activity can be summarized this way: a growing number of U.S. companies will need to gather a myriad of disparate data that contribute to climate action plans and their performance against those plans starting as early as 2024, on 2023 data. In Europe, the Corporate Sustainability Reporting Directive (CSRD) will require a 2025 report on 2024 data.

Consolidation between the reporting rules in different regions of the world is ongoing, and it's far from finalized. This has made it difficult for many global organizations to understand exactly what to disclose—and also where and when. However, the time is now to begin building out a reporting infrastructure and create internal reports to identify data gaps and establish good processes. This begins with determining what data you need to support the reporting and how to gather it.
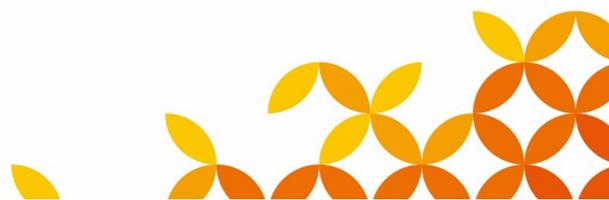
Align Data Gathering Efforts to Known
Climate Accounting Reporting Standards

The most common data approach for carbon accounting should leverage Scopes 1–3 of the Greenhouse Gas Protocol (GHGP), which has been built into many international climate-monitoring agreements and first-generation ESG reporting standards. While approximately 90% of S&P 500 companies reported some type of environment, social and governance and GHG emissions information by the end of 2021, there was a high variance of information and some companies were accused of 'greenwashing.' We can expect company reporting expectations to become more scrutinized going forward, being more science-based and using industry and regulatory standards.

GHGP Scope 1 relates to direct emissions from sources that are owned or controlled by the company such as fleet vehicle emissions or electric power consumption. Scope 2 is indirect emissions at company facilities that generate energy bought and consumed by the company. Scope 1 and 2 data collection is well understood because companies have this information and data sources readily available.

In contrast, Scope 3 covers indirect emissions throughout an organization's upstream and downstream supply chain. And in terms of climate impact, Scope 3 is the most important to consider. As evidenced by the CDP's 2021 Global Supply Chain Report, there are 11.4 times more emissions in a company's supply chain compared to its direct operations.

With the biggest potential impact to the carbon footprint also creates the greatest complexity in terms of data. Upstream emissions from the goods and services the company purchases produce different data sets than the downstream emissions from the consumption of their products. Calculating these emissions requires the use of two types of data:

- **Activity data** — A quantitative measure of a level of activity that results in GHG emissions such as liters of fuel consumed, or kilograms of material purchased.

- **Emission factor data** — A factor that converts activity data into GHG emissions data such as kilograms of CO2 emitted per liter of fuel consumed.
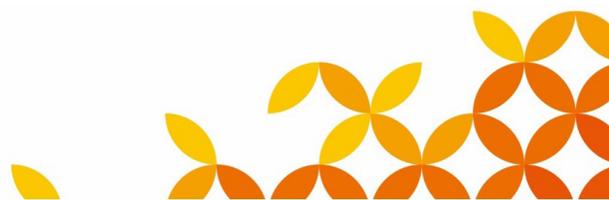
Align Data Gathering Efforts to Known
Climate Accounting Reporting Standards Continued

In addition, organizations can run into issues ensuring it is accurate and in the right format for consumption in a CRM, ERP or Climate Management Accounting Platform (CMAP). For example, a company may not have accurate Scope 3 calculations if suppliers in their value chain don't accurately measure their emissions.

By far, Scope 3 will be the hardest data to gather and standardize. So it's essential that you have good working relationships with your supply chain partners and suppliers so that each company can ask for the data they need and supply them to others. This data gathering is typically more complex and time–consuming than what you currently share with them so our advice is to start now if you haven't already, beginning with an ask for the data you need, and soon after, provide the Scope 3 target that you are trying to accomplish.
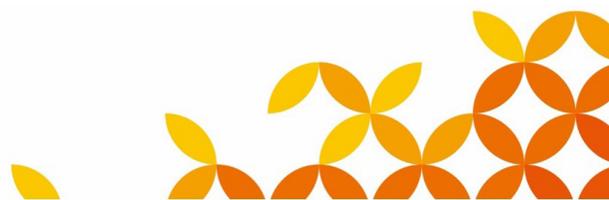
03 A DATA STRATEGY FOR GREENHOUSE GAS PROTOCOL

Carbon accounting is a complex process to say the least. For businesses to learn the new processes, set measurement metrics and establish reporting capabilities for the GHCP and SEC, they are likely to hire a significant team and spend $677,000 per year on these tasks.

With this kind of money at stake and the 2024 reporting deadline looming, one of the greatest risks — and opportunities — resides in your data strategy. How you will acquire, store, harmonize and deliver these data to a CMAP or ESG reporting solution will make the difference between early success and failure with carbon accounting.

At HULFT, we estimate that a manufacturing company with $500 million in revenue will have approximately 130 sources of emissions–related data that come from at least 30 enterprise data systems that reside inside their company, at energy suppliers or at partner companies in the value chain. Just as challenging, these data will be delivered in a wide variety of formats.
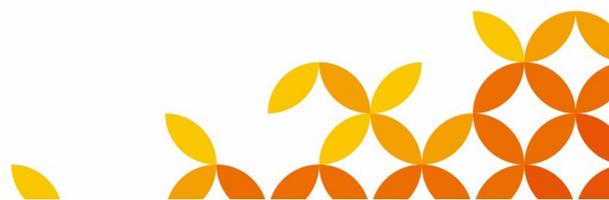
Data Strategy Components

To produce financial-grade reports that are auditable, all data sources must have a well-understood lineage and how they are transformed into the final product. This requires confidence in the data and its audibility at every step in the process. Towards this end, there are five components of an effective carbon data strategy:

Data definition — Defining the categories and types of data you will need, who owns them and where they are located.

Data acquisition — Determining how you will acquire the data – with humans, machines or both.

Data storage — Deciding where it will reside after acquisition, be it a centralized data lake or in databases.

Data calculation — Leveraging the industry standard requirement emissions factors and calculations.

Reporting – For the SEC and other climate-oriented governing bodies. Working with Scopes 1 and 2 data are relatively straightforward. They come from individual energy providers for electricity, steam, and HVAC inside the company. Today, you can often obtain a data feed from your utility providers via an online portal or an application programming interface (API). If that option is not available, there is also OCR scanning of PDF files, and other ways to turn analog to digital.

If you have the resources, there are several ESG software and service companies such as WatchWire, which automatically acquires utility invoices from providers so you no longer need to manually extract data from utilities. These solutions are not cheap but they help ensure data accuracy and provide advanced analytics for reporting and can eventually make future predictions on electric, steam, natural gas, and water consumption based on historical invoice data.
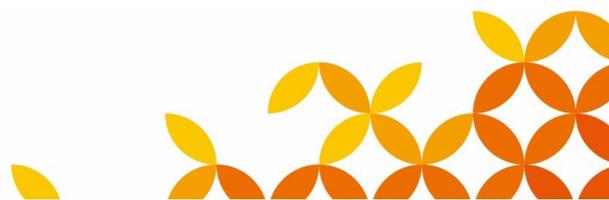
Scope 3 Data Challenges

As we all know by now, the greatest complexities in climate accounting reside in Scope 3 data. On the upstream side of the business, this includes, but is not limited to: leased assets, employee commute, transportation and distribution, waste generated during operations, fuel and energy–related activities, business travel, capital goods, purchased goods and services. On the downstream side, this includes the processing of sold products, transportation and distribution, use of sold products, end–of–life sold product treatment, franchises, and investments.

With much of Scope 1 and 2 data, the location, quality and format are known. With Scope 3, the data dimensions are harder to understand, and it requires one or more partners outside of your control to manage each data source. This adds the following additional complexities:

- Manual data gathering processes.

- Humans sometimes producing and sharing data instead of machines.

- Lack of access — aka 'siloed' data.

- Expenses related to data acquisition — hard costs and staff time are nontrivial.

- You don't understand what is being collected and why.

- Lack of partner and stakeholder engagement and communication.

- Limited budgets.

- Non–standard business processes that result in low quality.
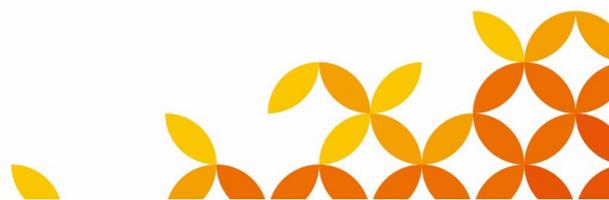
Ensuring Data Quality

The data required to calculate GHG emissions is often scattered across various internal systems throughout the organization. Many of these systems may be incompatible and don't 'talk' to each other. Or the utility suppliers might not have systems and processes in place to share data. To ensure a complete and accurate data foundation to underpin your reporting and decarbonization efforts, your team needs to determine how to source data on an ongoing basis. Some suggestions on this front include:

- Consider outsourcing the data capture process to a specialist service provider.

- Get as close to the original data source as you can. If you have a choice between meter or billing data, use meter data.

- Aim for automated data transfer wherever possible. Minimize human intervention: files touched by people prior to data collection are more prone to failure to load, precision loss and metric confusion.

- Consider how you will store and manage the data on an ongoing basis. A cloud-based enterprise software platform is infinitely superior to spreadsheets for this task.

Even though carbon accounting is a new practice in the business world, there are several technology developments that occurred over the past two decades including Enterprise Resource Planning, Customer Relationship Management and Ecommerce that provide sound and similar frameworks that can be leveraged for carbon accounting. In the end, carbon accounting is the combination of people, data, business processes and technology to achieve a measurable outcome. By leveraging already-established frameworks and engaging with the teams inside your company that have completed large-scale technology initiatives, you are well on your way towards your first carbon emissions report in 2024 or soon after.
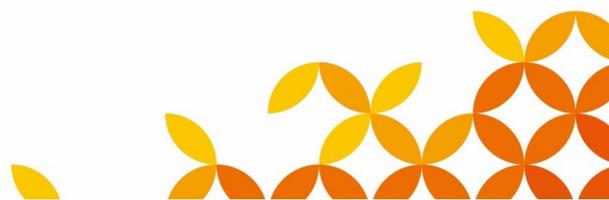
04 THE 4 TECHNOLOGY SYSTEMS YOU'LL NEED FOR CLIMATE ACCOUNTING

New environmental, social and governance (ESG) initiatives and Greenhouse Gas Protocol (GHGP) created the need for organizations to track and report on their carbon emissions for the first time. This is extremely difficult, because few software and hardware systems were created with tracking carbon as a use case, nor was it a business practice or a measurement for anyone but energy suppliers.

As your organization moves quickly down the climate accounting path it's useful to understand the systems involved in this process and how they will work together to track carbon consumption, production and reporting of it to regulatory organizations. See the Carbon Accounting Data Map below (Figure 1).

(Figure 1)
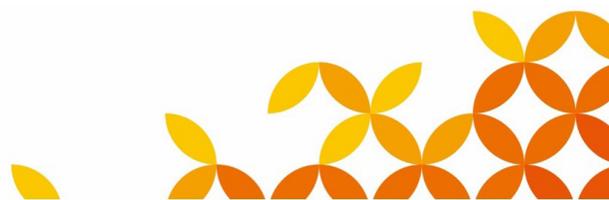
Data Acquisition

Carbon emission data contains two factors: carbon activity data and carbon emission factors. By multiplying carbon activity data and carbon emission factors, you can calculate your carbon emissions. For carbon activity data in Scopes 1 and 2 of the Greenhouse Gas Protocol, you need to acquire consumption data from utility bills, transportation records, waste disposal logs, and other internal and external data sources that track your organization's consumption of carbon. These are the easiest sources to gather and the ones to get started on if you are at the beginning of the journey. Scope 3 includes upstream and downstream emissions. They are exponentially more complicated because they reside in partner or supplier locations, the data are in different formats and volumes, and the measurements and calculations are dependent on standards that aren't completely defined today. Scope 3 can often make up a significant portion of an organization's carbon footprint, and at the same time can present the greatest opportunities for emissions reductions through supply chain management and other strategies.

To harness all this data, you need a broad variety of data acquisition ingestion technologies to capture data from utility companies, machine sensors and all the industrial equipment in your company. In addition, there will be many data feeds coming in from suppliers and partners in various structures and formats.

For carbon emission calculations, you can refer to databases such as the GHG, the EPA and European Environmental Agency.
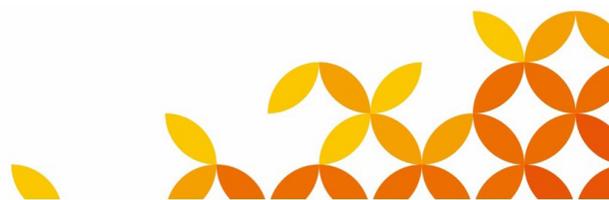
Data Integration

Because you will likely have more than 100 data feeds for carbon accounting, which will constantly change in terms of location, format and volume, data integration is one of the most essential technologies. You'll never know when a partner or supplier changes their data, but having flexible integration technologies in place will enable your organization to respond quickly.

Without data integration, this data may be scattered across different systems and departments, making it difficult to analyze, calculate and draw meaningful insights. It would also be nearly impossible to ensure the accuracy, completeness and lineage of this data. By integrating data from different sources into a single version of the truth, your organization can identify gaps and inconsistencies in its data, which can be addressed through additional data collection or data quality checks.

The data integration technologies your organization will use typically include extract, transfer and load (ETL) solutions, application programming interfaces (API), enterprise service buses (ESBs) and dozens types of data connectors. Because of the volume, variety and velocity of data, your IT team will need a broad variety of data integration techniques and technologies to provide the 'glue' for all of it to stay together and be delivered across the enterprise and into the right data management and reporting software systems.
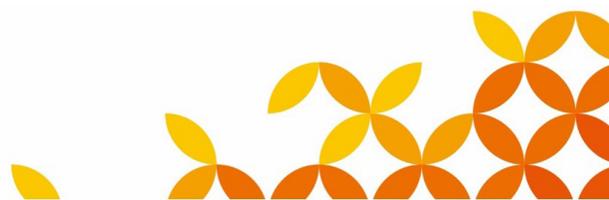
Data Storage & Management

The types of data storage required for climate accounting depend on the nature and volume of the data being collected and analyzed. In addition, The common types of data storage used in climate accounting are databases, data warehouses, master data management systems, cloud databases and spreadsheets.

Overall, the type of data storage required for climate accounting depends on the size and complexity of an organization's data, as well as its budget, resources, and technical expertise. A combination of different storage solutions may be required to meet the needs of climate accounting.

Carbon Accounting, Reporting and Analytics

As of 2023, it's still very early days for climate accounting in terms of both the technology and the completeness of the industry regulations that we'll need. Consequently, the carbon accounting software market is just now taking shape. Quite typical of an emerging software market, the choices your organization has is between established platforms in your organization that are high functioning, but not specific enough for the new challenges of climate accounting. In addition, there are new types of software that are very specific, but they may not be mature enough today. So most organizations are combining old and new software in an attempt to create a solution that fits your specific needs.

Climate Accounting Technology – Reference Architecture
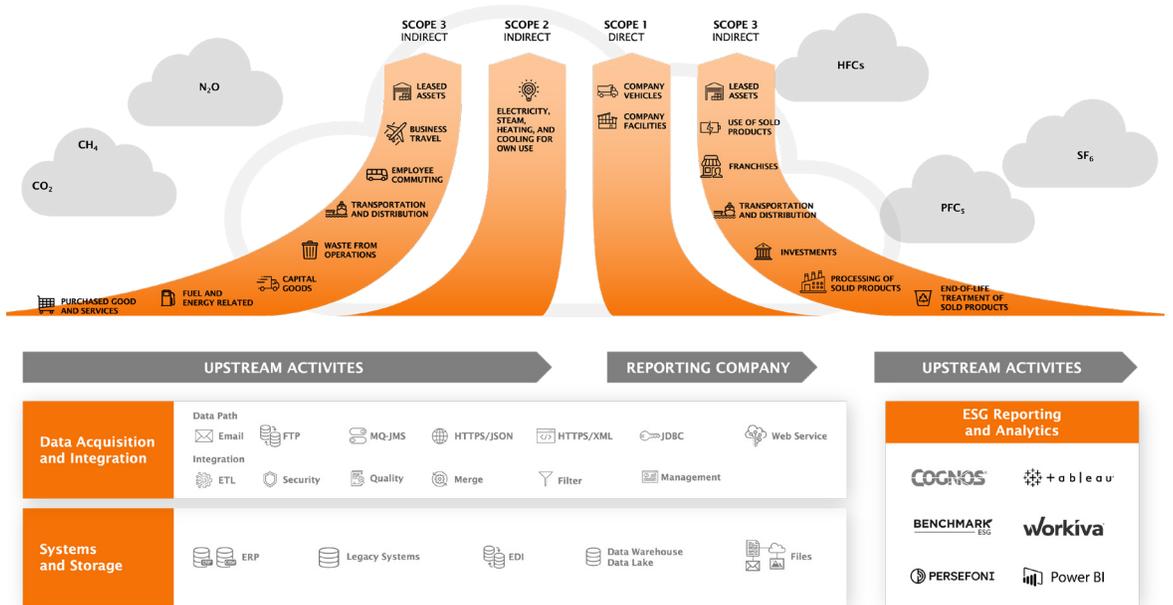
ERP systems are primarily designed to manage business processes and operations across multiple departments, including finance, procurement, and production. These systems can provide some level of support for climate accounting, particularly for tracking and reporting on energy consumption, emissions, and other environmental metrics. However, ERP systems may not have the specific features and capabilities needed for advanced climate accounting and sustainability reporting.

Carbon Management Accounting Platforms (CMAPs) are specifically designed for managing climate accounting data and reporting on sustainability metrics. These platforms can provide a comprehensive view of an organization's environmental impact, enable advanced analysis and modeling, and support compliance with sustainability reporting standards. CMAPs may also offer features like carbon offset tracking and verification, which are not typically included in ERP systems.
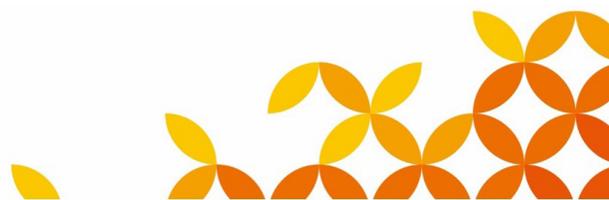
Conclusion

For climate accounting, industry experts are beginning to recommend CMAPs rather than ERPs and to a much lesser degree Customer Relationship Management (CRM). Overall, the choice of analytics tools for climate accounting will depend on an organization's specific needs, budget, and technical expertise. It's important to select tools that can provide the necessary features and capabilities for effective sustainability management and reporting.

Learning from the internet of things movement, the last major new technology innovation phase, you can assume that approximately half of the technology you will use for carbon accounting are systems that currently exist in your IT stacks. The other 50 percent will be for storage with greater capacity and speed, more comprehensive data integration solutions and more specialized enterprise software applications to build effective reporting and KPIs for your organization.
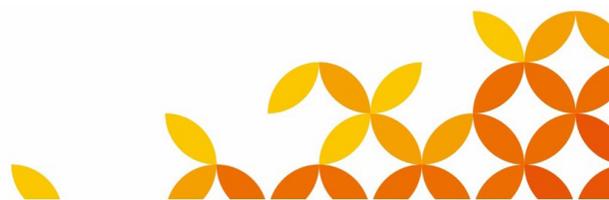
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