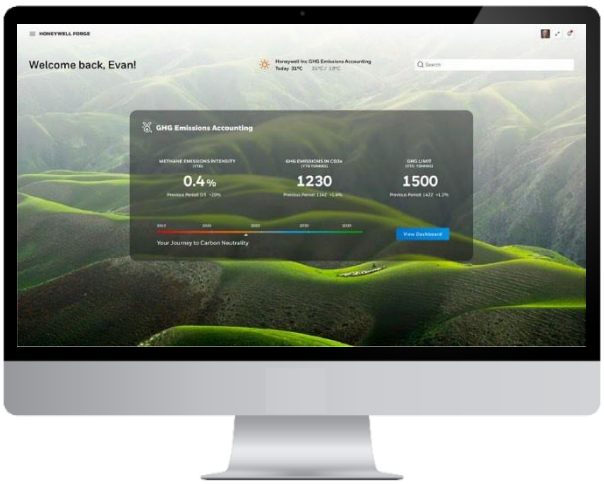
HONEYWELL FORGE

HONEYWELL FORGE SUSTAINABILITY+ for INDUSTRIALS | EMISSIONS MANAGEMENT

PRODUCT INFORMATION NOTE

Honeywell Forge Sustainability+ Emissions Management ("Emissions Management" or "EM") is a cloud-based solution – which can also be delivered as a Software-as-a-Service (SaaS) for automated data collection, model contextualization, calculation, and reporting. The Emissions Management application provides enterprise-wide greenhouse gas emissions tracking, accounting, visualization, and reporting using a near real-time Scope 1 and 2 emissions for HSE professionals and executive teams.

The core vision of Honeywell Forge Sustainability+ Emissions Management is to help organizations meet their sustainability needs, operate in a more energy-efficient manner, and with a lower carbon footprint. Honeywell Forge Sustainability+ Emissions Management helps industrial leaders meet sustainability goals and commitments through emissions measuring, monitoring, and by providing reduction insights.



7 KEY BENEFITS OF EMISSIONS MANAGEMENT

1 AUTOMATE DATA COLLECTION & VALIDATION

Consolidate emissions data from multiple sources namely Combustion, Flaring, Venting, and Fugitive to avoid point-in-time snapshots of an organization's emissions status. Ingest Leak Detection and Repair Reports (LDAR) and draw direct measurement data from:

• Honeywell Versatilis™ Signal Scout™ Methane Sensors and Rebellion Gas Cloud Imaging (GCI) Cameras, where absolute emissions are pulled from the direct measurement at the site level and are not rolled up to scope 1 accounting.

• Third-party, Industrial Internet of Things (IIoT) edge measurement technologies

• Ground detection with handheld devices, surveys from drones and fixed-wing aircraft, and satellite imaging.

With pre-built connectors, integrate content from disparate systems such as Process Historian (which supports OPC HDA protocols), ODBC connections, digital twin software sources, processing equipment, and existing and legacy emissions databases. Manual input into Emission Management application is also possible via on-demand upload of Excel or CSV files.

2 ENRICH & PRIORITE DATA

Establish data hierarchy from source types that may include:

(a) sensor-based empirical data;

(b) information calculated from publicly available formulas, emissions factors, and Global Warming Potentials (GWPs); and

(c) digital twin-generated soft-sensor content (where data from this source is employed when hard sensors cannot be deployed throughout the plant due to economic considerations. Soft sensors are critical where the process measurements are not readily available and are helpful in emissions calculation at the granular source level).

Select and shift between data sources to address preferences and resource, labor, and economic realities, while generating emissions information.

The value of this feature is:

The Emissions data prioritization feature assists users with ranking of input data measurements that creates confidence in their emissions estimations. As the ultimate purpose of emission inventories is to drive precise and accurate emissions, many guidelines prescribe the most reliable method to be used for emissions estimation - which oftentimes is a balance of accuracy and investment:

• Empirical source sampling (e.g., source tests, continuous emission monitoring, etc.) possess the greatest reliability but is also the most expensive.
• Conservative overestimates and extrapolations based on assumptions are the most cost-effective but the least reliable.

3 HARNESS VERSATILE EMISSIONS FACTORS & EQUATIONS LIBRARY

Access an ever-growing library of pre-loaded emissions factors (EF) and global warming potentials that presently include:

- Australian National Greenhouse Accounts Factors (2022)
- Canada's Emissions Factors & Reference Values (2022)
- United Kingdom's Department of Environment, Food, & Rural Affairs (DEFRA) Conversion Factors (2022)
- United States' (US') Environmental Protection Agency (EPA) (choose from 2022 or 2023 for Oil & Gas)
- United States' (US') Environmental Protection Agency (EPA) (2022 for Mining Minerals Metals)
- World Resources Institute's (WRI's) Greenhouse Gas (GHG) Protocol

Enterprise, region, and site-level common EF standard and version can be set and managed via the emissions factor management interface. EF standard can be propagated to the child Emissions sources based upon setting the asset-type level; optional direct reference of Emission Factor reference in the model is also supported. The calculated emissions at the activity level can be viewed along with the EF standard used for calculation for later auditing. Alternatively, organizations may customize existing emissions factors or upload other standards to accommodate innovative new sustainable fuels and blends, or to capitalize on availability and arbitrage in energy sourcing activities related to market vs. location-based electricity sourcing.

4 CALCULATE & QUANTIFY EMISSIONS IN NEAR REAL TIME

Robust calculation engine to perform Scope 1 and Scope 2 on large emissions datasets in near real time that supports creation, modification, and management of formulas on a regional, site, or source level. Export data and information into standard emissions templates for multiple industry verticals for easy configuration and scaling of the solution.

5 RECONCILE EMISSIONS DATA AND INFORMATION SETS

Highlight possible discrepancies between top-down and bottoms-up emissions information from the piloting and implementation of various GHG estimation methods. Emissions Management's reconciliation feature gathers emissions measurements from detection sources, collecting them into the appropriate site or facility grouping – and then aggregating the sites / facilities into appropriate regions or enterprise levels. The value of EM's reconciliation capability addresses the challenge faced that no two sensing technologies or methodologies will arrive at the same emissions detection volumes and intensities – even if both are tasked to measure the same area at the same time.

6 CONVERT DATA & INFORMATION INTO INSIGHTS - AND INSIGHTS INTO ACTIONS

Emissions Management's advanced analytics, artificial intelligence, and machine learning, combine near real-time raw data and emissions information to train and generate an emissions model that helps to predict year-end emissions, month-on-month, based on planned production data. Course-correct production and/or emissions reduction activities if an organization's presently and predicted emissions inventories exceed regulatory thresholds or forecasted year-end targets.

Navigate enterprise-wide visualization in near real-time with drill-down capabilities for granular visibility into emission sources and gain insights across core emission functions with an initial focus on region and site view through configurable charts and graphs and interactive dashboards. Access Emissions Management's investigation workspace for creation and analysis of emission calculations. Interrogate data and information using time series trends and contextualization.

Customers can then drive insights into calls-to-action with Honeywell's portfolio of reduce by data offerings (APC, APM, Digital Twin); reduce by technology offerings (carbon capture utilization & storage, hydrogen portfolio, battery energy storage solutions); or both, as in the case of Honeywell's burner management solutions and flare solutions portfolio. Time is of the essence – and Emissions Management supports an organization's proactivity.

7 **CENTRALIZE AND STORE EMISSIONS DATA AND INFORMATION**

Store LDAR reports ingested by your organization or by a third-party. Emissions Management tracks changes which alter an organization's emissions and energy records through an emissions factor library update, modifications to calculations, or activity changes across the enterprise or by process. Showcased audit trail functionality includes emission input change, calculated output override, and limit changes.

EMISSIONS MANAGEMENT | DATA TRANSPARENCY

Access Near Real Time Emissions and Energy Sourcing Data & Information

-For Scope 1 activities, Emissions Management seamlessly draws time-series data from disparate historian and digital twin software sources, along with data from sensing devices, processing equipment, and existing and legacy emissions databases. Flexible design allows for manual data input via Excel or csv files. Incorporate Leak Detection and Repair (LDAR) information to aggregated emissions calculations in an auditable, centralized repository where they can be compared with other emissions estimation methods. The Emissions Management application comprises a new LDAR integration feature where one can perform the following tasks:

- Group the LDAR data into fugitive component groups and integrate with the Emissions Management software.
- View the grouped LDAR leaks under direct measurement and compare against activity-based emissions calculations.
- Forecast leaks for the rest of the year based on the last repair leak quantity.

-For Scope 2 activities, track energy sourcing predominantly from purchased electricity, purchased heat, or steam, with location-based and market-based emissions factors to calculate emissions (actual usage):

- Track monthly electricity consumption and the corresponding emissions with data from utility providers through EM's utility services integration feature. Compare Scope 2 emissions and the energy cost for each site based on the electricity consumption.
- User can configure equipment-level energy consumption calculations. From this data – and in conjunction with emissions factors – Emissions Management can calculate the greenhouse gas emissions. Additionally, EM allows a company to compare their target vs. actual energy consumption – down to the asset level.

-For Scope 2 Market-based instruments management (certificates-driven):
Ability to add and upload instruments and relevant certificates per site based on various instrument types, such as, but not limited to, renewable energy certificates (REC), energy contracts, energy attribute certificates. The expiry of certificates is tracked beyond which it cannot be applied to market-based calculations. A user can view the certificate usage across multiple sites in a single view and apply them on a need basis. When applying the certificates per site, one can use partial or full certificate values to claim and calculate market-based emissions accordingly. The system calculates when the certificate is applied to a site and provides the latest results. Emissions Management also possesses the ability to define site-level financial periods and residual emission factors to calculate emissions for remaining Scope 2 electricity not covered by certificates.

Constantly Tally Greenhouse Gas Data and Information

Determine absolute amounts of:

- methane (CH_4)
- carbon dioxide (CO_2)
- nitrous oxide (N_2O)
- refrigerants
- hydrofluorocarbons (HFC_s)
- perfluorocarbons (PFC_s)
- sulfur hexafluoride (SF_6)

Determine cumulative carbon dioxide equivalents (CO_{2e}) by multiplying the absolute emissions of each greenhouse gas with respective Global Warming Potential.

Determine emissions intensities of:

- methane (CH_4)
- carbon dioxide equivalent (CO_{2e})

EMISSIONS MANAGEMENT | INSIGHTS

See the Big Emissions Picture – or Pinpoint on a Specific Asset

Organize emissions-related data in a hierarchical format. Drill for specific greenhouse gas information and compare by location and size – across the global enterprise, region, site, or process unit-level. Visual Intelligence screens for multiple industrial verticals allows a user to:

- Identify top 3 emitting sites at the enterprise-level with a few clicks

Navigate between region and site level emission details in one click

- Possess on-demand maximized view for visualization tiles
- Switch between tile and grid views.

Understand Your Company's Emissions Through Powerful & Intuitive User Interfaces

Obtain improved visibility, integrity, and transparency into emissions through near real time visual intelligence screens by functional role. With predefined or customizable dashboards, Sustainability, Operations and C-Suite personnel can monitor and track the most critical key performance indicators (KPIs), gathering the specific information necessary to create clarity and removing decision-making friction.

Separate Normal Operations from Developing Issues

Import data gathered and information derived by Emissions Management by notifying Plant Professionals of sudden changes in emissions quantities from sources which were previously predictable in their process or fugitive venting.

EMISSIONS MANAGEMENT | SCORE-KEEPING & REPORTING

Develop and Leverage Meaningful Data and Information

- Reconcile bottoms-up and top-down data and information so your complementary technologies and methodologies do not result in unaccounted or unexplained discrepancies.
- Track and compare critical emissions related KPI metrics & impacts by generating data and information for:
  - operations (production and quality)
  - finance (hurdle rates, internal rates of return, and return-on-investments)
  - sustainability-related activities (GHG emissions)
- Predict CO_2e and CH_4 emissions intensity and absolute emissions at the end of the year for the respective production target plan per site with Emissions Prediction functionality. Trigger the prediction by uploading a forecasting plan or using the re-calculate option. On-demand reports can be generated and downloaded for the predicted analytics. Emission prediction parameters used in prediction and analytics algorithms can be user defined at the start of the solution or set within a look-back period to infer the parameters from history.
- Generate an emissions generation report at the click of a button.

Provide Transparency That Matters

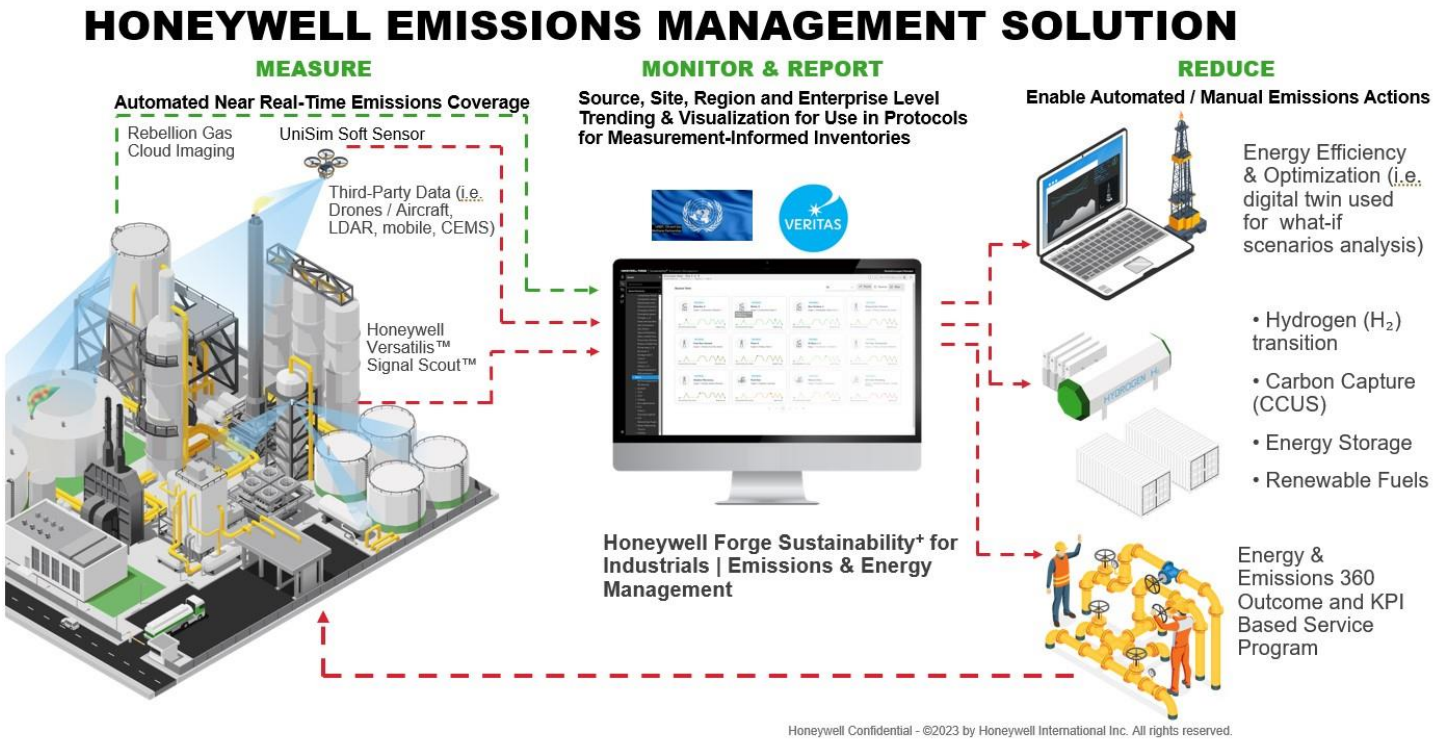
Reduce resource and time commitment for global initiatives, environmental compliance, calculating sustainability baselines and progress, financial reporting, measuring alignment with assurance validation frameworks, and gathering data and information for certificates of carbon intensities. Utilize data and information for globally recognized reporting structures such as:

- Carbon Disclosure Project (CDP)
- Global Reporting Initiative (GRI)
- Oil & Gas Methane Partnership 2.0 (OGMP 2.0)
- Sustainability Accounting Standards Board (SASB)
- Task Force for Climate-Related Disclosures (TFCD)

SOFTWARE REQUIREMENTS

Software	Version
Google Chrome	The latest version of Google Chrome
Microsoft Edge	The latest version of Microsoft Edge
Microsoft Excel	Microsoft Excel Office 365 and above
Cloud Historian Collector	CHC 150.6.16 or later version
Unisim Design (*Optional*)	(On-prem) R492
Experion Elevate (*Optional*)	R100
MatrikonOPC Simulation Server (*Optional*)	R1.9.0.8629
SHIR (self-hosted integration runtime) (*Optional*)	Java JRE 1.8 update 387
	Integration Runtime-5.17.8154.2

EMISSIONS MANAGEMENT SOFTWARE |
INTERCONNECTIVITY TO END-TO-END SOLUTION



GO BEYOND EMISSIONS MANAGEMENT

Honeywell Forge Sustainability^{+} for Industrials | Emissions Management balances the versatility of a centralized emissions information solution for governing existing and future mission-specific software and equipment, with the specificity to tailor needs per a company's industry and respective applications. Emissions Management is one facet in an ecosystem of decarbonization and sustainability solutions.

WHY HONEYWELL?

Honeywell's 100+ year heritage of solving complex challenges has earned the trust and confidence of technical professionals worldwide by helping them perform their jobs in a safer, data-driven, and more efficient manner. Our software, equipment and service offerings provide a comprehensive solution across a wide array of industries and applications, displaying our broad and intensive domain knowledge. Whether working with an existing customer possessing a rich Honeywell installed base – or a new customer whose trust we've recently earned – we focus on the future our clients wish to create.

For More Information

Want to learn more about how Honeywell Forge Sustainability^{+} for Industrials can help your organization in its decarbonization and sustainability journey? Visit https://www.honeywell.com/us/en/solutions/emission- reduction or contact your Honeywell account manager.

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