

A POWERFUL ENVIRONMENTAL FORECAST SOLUTION



Customized weather forecasting, accidental release,
and air quality impact software for industrial facilities



Industrial assets around the globe use RWDI's real-time emergency and environmental forecast systems to understand their air quality impacts and mitigate environmental risks. This advanced web-based GIS software integrates air quality monitoring data, weather forecast, accidental release and atmospheric dispersion models into a single user-friendly interface.

WHY OUR FORECAST SYSTEM?

Our emergency and environmental forecast system is a valuable tool for anyone who needs to understand the dispersion of emissions into the atmosphere – from industry leaders and field operators to regulators and emergency responders. Users not only gain access to a system that combines high-quality data, technical sophistication and outstanding usability, they also receive support from RWDI's renowned team of engineers and scientists.

Nowcast

- Current weather conditions
- Immediate impact and response
- Sub-hourly updates

Forecast

- Incident tracking as conditions develop
- Planning for scheduled and hypothetical events

Hindcast

- Forensics, training and source apportionment

Accidental and Operational Modes

More than an emergency management system, our forecast system offers 24/7 data assimilation and weather forecasting. It is capable of modeling impacts from normal and planned operations for regulatory compliance and nuisance avoidance.

Responsive support

The emergency forecasting system comes with RWDI's meteorologists, hazard modelers, air quality scientists, IT developers, engineers and their knowledge of the industrial process.

Features

Responsiveness

- Runs 24/7, always ready for use
- Supports rapid response with pre-configured release scenarios (most likely, worst case) as well as easy-to-generate custom scenarios

Technical strength

- Suitable for dense, neutral, and buoyant gas releases as well as liquid spills
- Effective in onshore and offshore environments
- Offers a holistic picture, with a smooth transition between release sites and longer-range dispersion
- Uses high-resolution 3D meteorology and dispersion modeling, capable of tracking curved trajectories (complex terrain, coastal environments, long range transport); supporting transient and steady-state impact assessment; and evaluating multi-source cumulative impact

Adaptability

- Can be implemented in your existing system or in the cloud
- Available with open source or proprietary GIS interfaces
- Allows administrators to authorize different levels of information access for different users

A PROVEN APPROACH

Using emergency forecasting across an entire jurisdiction

Alberta, Canada, contains the third-largest crude oil resources in the world, as well as considerable natural gas deposits. RWDI has developed a customized emergency forecasting tool for Alberta's environmental regulator for joint use by government and industry. The Emergency Air Monitoring and Assessment System (EAMAS) focuses on oil sands developments in the north of the province, and on the petrochemical industrial heartland.

Potential incidents include chlorine releases, anhydrous and aqueous ammonia spills, hydrocarbon storage tank fires, sulfur fires, unignited jets, flares, pipeline blowdowns and ruptures, derailments, chemical process upsets, and forest fires. EAMAS allows multiple release scenarios and displays cumulative impact to track escalating incidents.

EAMAS continuously assimilates data from two networks of 25 air quality monitoring stations as well as National Centers for Environmental Prediction (NCEP) forecasts. It runs high-resolution weather forecast, computes and displays concentrations and exposure guidelines over multiple GIS layers, shows weather maps and allows click-and-run interactive scenarios. It is also securely designed for use by multiple facilities and stakeholders.

In addition to developing EAMAS, RWDI worked closely with industry and Alberta's emergency response teams to further refine and customize the software, provide operational support, and train staff in the effective use of the system.



Emergency forecasting for sour gas flaring

Combined with another tool developed in-house at RWDI (Plume-RT), our forecasting system has enabled the management of sour gas flaring activities in flat and complex terrain on several continents. It has helped operators:

- identify favorable flaring windows
- reduce shut-in periods
- optimize fuel (lift) gas usage
- select representative locations for permanent and mobile SO₂ monitor placement
- manage odor complaints

Quick deployment of the modeling system, combined with continuous weather, ambient and emission data assimilation, supports smoothly managed and cost-effective operations.

RWDI is a valuable partner to clients seeking to...

Explore Innovations

- Push emergency prediction beyond short term and short range by incorporating 3D meteorology and puff dispersion modeling

Create Opportunities

- Optimize emergency management with a multi stakeholder system, while retaining full privacy and data security for each facility
- Streamline air quality management with a single system for normal operations, upset conditions, and emergencies

Fulfill Expectations

- Satisfy expectations for budget, schedule and performance simultaneously, with an emergency management solution that takes project-specific concerns into account, and comes with a responsive team of experts

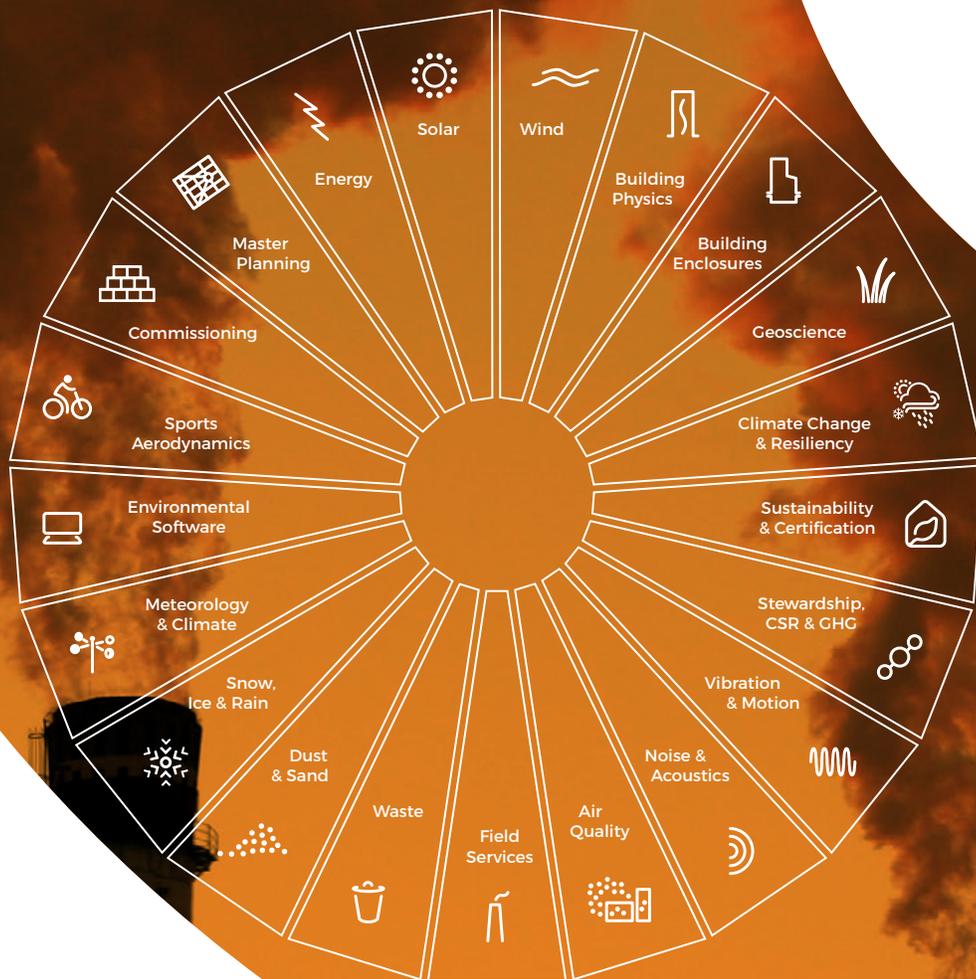
Meet Challenges

- Manage escalating emergency situations with multiple concurrent hot spots and on-the-fly scenario configuration



Services

RWDI's core practice areas bring together a diverse array of capabilities around a common purpose: meeting the immediate aims and broader business goals of our clients.



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