

GreenCert™

An Intelligence Solution for Power Generation

Power Generators' Needs

Power producers face a perpetual balancing act between demand and production capabilities. This balancing act is further complicated by maintaining cost-effective reliability, regulatory compliance, and efficient performance. Timely communication of information is critical to management to stay functional and competitive. The power generation industry has developed an array of effective metrics and analyses which assist in maintaining the balance between all of the competing interests. Plant operators and engineers have access to a wealth of data and use it to create and conduct these analyses. Spreadsheets, specialized software programs, and other tools are used by plant operators and engineers to conduct these analyses which are then often manually transferred and interpreted into management reports. Datasets for each department are stored and maintained independently; often cross-departmental cooperation is non-existent. Therein lies the problem; managers get post-mortem weekly or monthly reports from each department which are manually integrated and pushed to upper level management. The time lag between data being logged at the unit level and it being interpreted and conveyed to upper management is often on the order months or quarters. Timely analyses, correlations, and reports of actionable data are provides powerful capabilities which are sorely needed in the power generation industry.

GreenCert™ Solution Overview

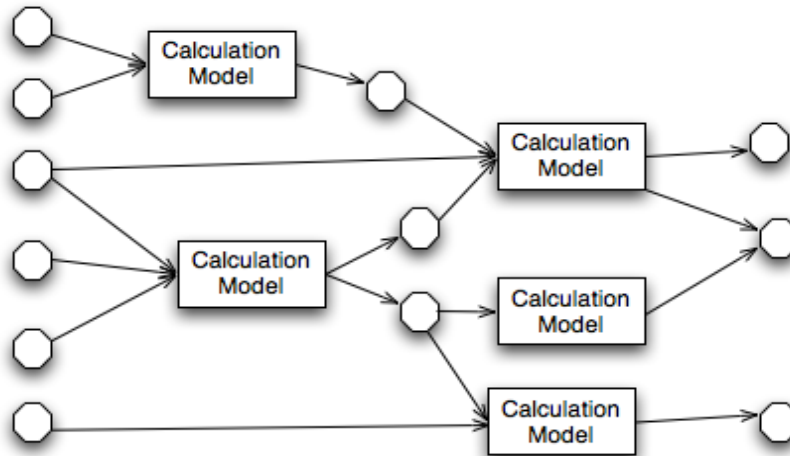
GreenCert™ differentiates itself by offering an advanced, highly verticalized intelligence solution which has been carefully tailored to meet the needs of the power generation industry. Our enterprise approach enables all management levels to view, query and chart updated availability, financial, emissions, operational, fuel and other unit- and plant-specific datasets. Our intelligence solution offers an analytical insight into self-determined KPIs and fleet-wide day-to-day operations. GreenCert™ provides timely, actionable drill down functionalities previously unavailable, in a modern, easy-to-use user interface which can be user configured to suit the needs of each manager. Thereby improving your ability to optimize your fleet and enact better decisions, faster.

GreenCert™ generates operational insight and provides enterprise-wide data aggregation and analytics. Our intelligence solution creates a centralized fleet-wide data management interface which features quick, easy-to-use report generation and dashboard configuration. Within our robust management toolset, managers have the ability to set and monitor targets and goals, notate events,

and identify then investigate issues. The configurable analyses feature a transparent process which can be fully traced, thereby allowing users to respond and identify to specific operational issues. GreenCert™ offers superior auditability and drill-down capabilities. Disparate factors, such as reliability and regulatory compliance, can be correlated through efficiency-oriented emission reductions through GreenCert™. The net result is an enhanced ability to manage assets, improve efficiency and reliability, while meeting regulatory requirements and reducing risk for future compliance.

Analysis Approach

GreenCert™ aggregates disparate plant-level datasets into one analytical platform to provide actionable fleet-wide drill down functionalities. Our analytics model is a proprietary framework that supports model construction to create meaningful relationships and navigation of those relationships. The relationships are constructed based on “real world” scenarios coupled with multiple models, including well-vetted statistical, calculation, and data models that are capable of handling both structured and unstructured datasets. Calculation models encompass not only conservation laws, reversible chemistry, thermodynamics, conversions, etc. they also include fuel specific efficiency calculations such as mass balance and covariance. Our proprietary modeling structure can accommodate variable frequency and granularity of data, just as it is collected from the units. Most any data can be incorporated and normalized over user selected time periods.



Our analysis approach provides a platform on which fleet wide, multi-level analyses can be conducted on the most recent data available within the system. In some instances and unit configurations, it would be possible to provide management updates and analyses daily, or possibly, even faster.

Historical data, environmental factors, and plant configuration specifics per unit are used to generate baselines for models rather than starting from manufacturing specifications. Operators can use our intelligence solution to develop deep correlations and relationships between components and

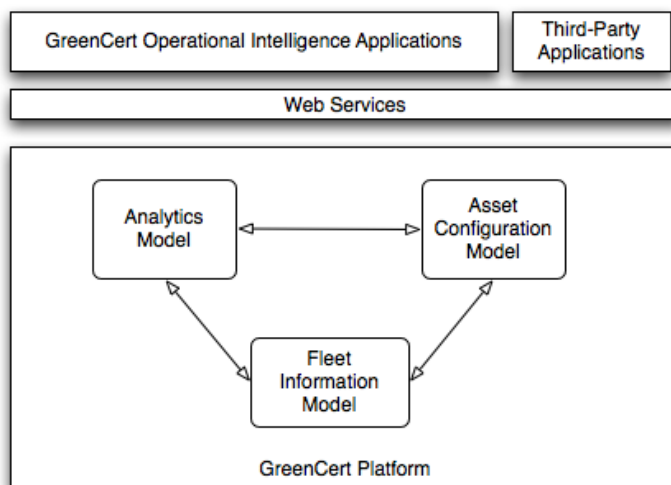
performance based on their plant- and unit-specific expertise; this allows others in the fleet to leverage the knowledge and experience of the best operators in the fleet. Once the relationships are developed, the accuracy of analyses and projections will improve significantly. Ultimately, the goal is to generate actionable information which can be used to improve efficiency and get better results.

Program Architecture

GreenCert™ has been engineered on a Software-as-a-Solution (SaaS) platform. While data moved into the GreenCert™ repository is not subject to FERC regulatory authority, it is a valuable commercial asset of the plant and is treated with special care through Evergreen Energy policies. Evergreen Energy's Information Security Policy classifies all customer data as confidential and the financial data being treated as highly-confidential. Evergreen's policy is based on best-of-breed commercial security practice. Evergreen's policies would be familiar to anyone with knowledge of the NERC CIPs.

The GreenCert™ analysis software for the energy generating business capitalizes on the greatly reduced lifetime costs of cloud computing which has been strongly leveraged in other industries' IT infrastructures. The GreenCert™ applications are hosted outside of the physical plant boundaries. The applications are accessible from anywhere needed over the Internet through a wide variety of web-enabled intelligent devices.

Our solution features a highly configurable dashboard, with modules which can be snapped in the interface and organized based on user preferences. The user interface is designed to assist users with simple navigation tools and intuitive design. Our intelligence solution is based on best-of-breed open source and commercial components. It is an on-line service application which is designed to integrate seamlessly with other software applications, databases, and analysis toolsets.



GreenCert™'s proprietary applications and platform extracts data from existing, non-linked data sources and repurposes it to provide actionable information. The application, data storage, and data transfers are secured using best-of-breed techniques designed to meet FERC and NERC CIP standards.

Applications

GreenCert™ was initially developed as a solution for coal-fired power plants and has quickly expanded to include other forms of fossil fuel such as natural gas. Our solution was constructed with fleet management in mind and is designed to be easily configured to include any type of power generation resource, fossil fuel or renewable.

Our intelligence solution, GreenCert™ can be used as a management tool at all levels of power generation from the unit level to fleet executive. The superior drill down capabilities and swift analysis toolsets provide valuable time-savings to shift supervisors and plant engineers. Easy to configure dashboards, provide unparalleled usability. Efficiency auditing, compliance, reporting, and emissions monitoring, including greenhouse gases, are all achievable through GreenCert™. GreenCert™'s modularized construction allows customers the ability to pick and choose the functionality that they need. We strive to continually improve our product, so if you do not see the functionality that you need - please feel free to suggest ideas for new module development. Customer feedback is always welcome!

Summary

Every power generation fleet struggles to find the balance between performance, reliability, environmental compliance, and efficiency while maintaining cost-effectiveness in their fleet. Data integration and analytics are the driving force behind the next wave of efficiency. GreenCert™ is an intelligence solution for power generators which maximizes data aggregation and interpretation capabilities enabling management to initiate cost-effective, operational efficiencies throughout the fleet.

GreenCert™ provides you with *better* information, *faster*.

Contact Us Today!

Evergreen Energy's mission is to provide powerful decision tools for today's utility management and smooth integration with tomorrow's SmartGrid technologies. Our technological innovations result in products and processes that providing operational intelligence for the power generation industry and enables power generators to leverage its assets, whether they are coal, gas, solar, or wind, based on business metrics that are relevant to them.



For more information, please feel free to visit with us!

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