Getting to Green
THREE KEY STEPS FOR PREPARING ENTERPRISE DATA FOR SUSTAINABILITY REPORTING

BY JOHN O’ROURKE

As organizations around the world adopt sustainability initiatives, executives need tools to support the reporting and management of these initiatives. While sustainability reporting is mandatory in some countries, many business leaders are working to become more responsible in managing their energy and water usage, greenhouse gas emissions, and social and community programs. They are collecting and reporting this information to support internal improvement initiatives and to provide stakeholders a better sense of the impact an organization has on the environment and the regions in which it operates.

So how do organizations collect, consolidate, and report their sustainability metrics? Customer surveys and discussions indicate that most start out using spreadsheets, text documents, and e-mail to collect and report the information—especially if the process is being done only once a year for external reporting purposes. But as the need for sustainability reporting becomes more frequent, organizations will look for software solutions that can support a more easily repeatable process, while providing a higher level of quality and confidence in the data being reported. This is particularly important if the data is subject to external auditing and assurance.

Technologies that support these activities should conform to global sustainability reporting guidelines. There are many reporting guidelines companies use to achieve this end—the Global Reporting Initiative (GRI) and the Carbon Disclosure Project (CDP) are two commonly used examples. There’s also the recently launched International Integrated Reporting Committee, which is focused on driving a framework for integrated financial and sustainability reporting.

While there are a number of specialized applications emerging to support energy, carbon, and sustainability reporting, many enterprises are starting to leverage their existing enterprise performance management (EPM) and business intelligence (BI) solutions to collect and report sustainability metrics. These existing applications support a repeatable high-quality sustainability reporting process built considering three key activities: data collection and contextualization, data aggregation, and data reporting and analysis.

Once the right technology is implemented or leveraged, following such guidelines becomes a much simpler endeavor. “Whether for companies or cities, carbon and energy management software will become the fundamental platform for enabling corporate sustainability strategy, as transparency into carbon emissions and other resource use is the prerequisite to setting appropriate reduction targets and identifying and prioritizing sustainability projects to reach those targets,” wrote Forrester Research analyst Daniel Krauss in his December 2010 report The Evolution of Enterprise Carbon and Energy Management Software.

DATA COLLECTION AND CONTEXTUALIZATION
The data required for sustainability reporting and management originates in a number of internal and external data-sources. Metrics about carbon emissions and electricity, fuel, and water usage can exist in applications for enterprise resource planning; facilities, transportation, and supply chain management; and shop floor and process control. Some of the information may need to be collected from external sources such as electricity providers, and in some organizations, meters and sensors are being installed within various

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facilities and locations to provide more-granular detail regarding energy usage. Social metrics such as workforce diversity, compensation levels, and employee training and development programs may originate in HR systems. And economic metrics needed for sustainability reporting, such as spending with local suppliers at significant locations of operation, will mostly originate in financial applications.

Key technologies required to collect the raw sustainability data from these sources include extract, transform, and load (ETL) and data quality tools, which directly pull the required metrics from operational applications. The ability to connect to remote sensors and meters may also be required for more-granular tracking of energy usage. In some cases, organizations are using spreadsheets, surveys, and Web-based data entry tools to collect sustainability metrics from managers in remote locations and load them into the reporting database.

Locating and collecting the raw data needed for sustainability reporting and management is just the first step; the data also needs to be contextualized. This may include summarizing raw data into the appropriate time frames—for example, hourly or daily electricity consumption—and matching up sustainability metrics with operational metrics such as revenue, head count, and production figures to calculate key ratios such as emissions per employee. ETL and data quality tools working together with database systems can usually perform the data collection, transformation, and aggregations required to put the sustainability metrics in the right context for user consumption.

**DATA AGGREGATION**

Once the relevant data to support sustainability initiatives is identified and collected, it must be aggregated and organized for analysis and reporting purposes. This includes applying the required conversions and calculations to support standard sustainability guidelines or to create carbon equivalents. There are a number of alternatives to consider, including relational databases, multidimensional online analytical processing (OLAP) servers, and purpose-built sustainability reporting applications that leverage these technologies. Key factors to consider include whether the intended audience for the data is internal or external, the level of analysis required, and the frequency and level of granularity needed for analysis.

If the reporting requirements are fairly simple, such as internal delivery of energy usage and greenhouse gas emissions to managers via standard reports or graphical dashboards, then a relational data mart or warehouse can be a viable solution. If managers want to perform more-complex types of comparative analysis, modeling, or forecasting of sustainability metrics, then multidimensional OLAP server technology will provide a more viable solution.

If the sustainability data will be used for external reporting to key stakeholders and may be exposed to external audit and assurance processes, then packaged EPM applications, such as financial consolidation and reporting applications, can be leveraged. These applications integrate sustainability metrics with financial reporting and provide additional features such as data validations and controls, workflow and process management, and audit trails. The EPM applications can be used on their own or in conjunction with a relational or multidimensional data mart to support both internal and external sustainability reporting requirements.

Denmark-based DONG Energy recently used Oracle EPM applications for such reporting. (See “Sustainable Energy,” page 28.) Analysts previously used spreadsheets and e-mail to collect and report sustainability metrics—and the company received a poor audit report on the quality of its data. Since managers were already using Oracle Hyperion Financial

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**Developing a Tech Strategy for Sustainability**

With several options to consider when it comes to collecting, aggregating, and reporting sustainability information and metrics, Oracle Vice President of Product Marketing John O’Rourke offers some considerations that should drive an organization’s technology strategy.

1. **Determine the best practices in your industry or region.** One example might be collecting energy usage data at the facility level in retail or financial services. Determine what your peers are doing in response to regulations and which high-return opportunities they are pursuing, such as reducing energy usage and carbon footprint in supply chains. Engage partners as needed.

2. **Review current IT platforms and reporting tools.** Look for opportunities to leverage existing investments, data, and processes to minimize incremental cost. For example, if you are already using Oracle Essbase or Oracle Hyperion Financial Management, these systems can be extended to support sustainability reporting.

3. **Identify sources of necessary data.** Examine current sources such as Microsoft Excel spreadsheets in the environmental health and safety department, but also identify whether data capture can be achieved via accounts payable processes or Web forms. Automating data capture can reduce time and effort and improve accuracy in sustainability reporting.

4. **Understand data granularity demands.** Determine whether a sensor-based approach, collecting data at the facility or department level, is justifiable, and which data frequency makes sense for operational versus enterprise-level usage. Fitness First collected weekly energy usage measures for internal reporting and analysis and then rolled up for external reporting on an annual basis.

5. **Determine audience for reporting.** Will the data be published internally, externally, or both? Data collected for external publishing and assurance will need stronger controls and processes to be in place to ensure accuracy and audit readiness.
Management for financial consolidation and reporting, they decided to extend the application to address sustainability reporting requirements. The company now has a single system that aligns its financial and nonfinancial/sustainability reporting, which has earned a clean bill of health from auditors.

“We with Oracle Hyperion Financial Management, we can now identify the hotspots in our work with sustainability, where we can obtain maximum change and results—and we can track progress in our work to achieve our goals,” says Niels Strange Peulicke-Andersen, common systems manager in the Quality, Health, Safety, and Environment group at DONG Energy. “We can also publish our results in line with our financial results because our reporting is transparent and valid.”

DATA ANALYSIS AND REPORTING

Once sustainability data is collected, aggregated, and contextualized, it is ready for formatting and delivery to stakeholders. Internal stakeholders can include senior executives who are interested in tracking high-level trends and metrics against goals, facilities managers and analysts who may want to perform ongoing analysis and benchmarking of energy and water usage across departments and locations, and staff who need standard reports on a regular basis. External stakeholders may include regulators who require sustainability reporting in a specific format. But the broader audience includes investors, customers, suppliers, employees, and others who want to access information and metrics about sustainability initiatives on the organization’s Website.

For senior executives and managers, sustainability reporting data and metrics can be delivered via graphical BI dashboards or scorecards that highlight trends over time and provide drill-down analysis and comparisons of sustainability metrics against predefined goals and initiatives.

For managers and analysts who require ad hoc analysis, the same dashboards and scorecards may provide a starting point. But they may also need ad hoc query and reporting capabilities, and data mining, planning, forecasting, and predictive modeling tools to perform forward-looking modeling and forecasting of energy and water usage and greenhouse gas emissions. Spreadsheets connected to relational or OLAP servers can also be popular tools for performing ad hoc reporting and analysis of sustainability data. For line managers and other casual users, production reporting tools with the ability to print or e-mail PDF reports may be sufficient.

To report sustainability metrics to external stakeholders, organizations will need the ability to feed the metrics into their published sustainability reports—or into annual financial reports, if they are taking a more integrated approach to sustainability reporting. Alternatively, some organizations are making sustainability information and metrics available in an interactive format on their Websites using graphical BI dashboard technology. Beyond publishing annual sustainability reports on company Websites, some organizations are going further by updating and publishing sustainability goals and metrics on a more frequent basis. SABMiller, the world’s second-largest brewing company, provides a Sustainability Assessment Matrix (SAM) reporting portal for external stakeholders. The SAM reporting portal displays how the organization has performed against its 10 sustainable development goals. The site includes interactive reports and charts that allow stakeholders to view sustainability performance by region and subsidiary.

PEOPLE, PLANET, AND PROFIT

Although sustainability reporting is mostly external in nature, this is not necessarily the end goal. The triple bottom line of people, planet, and profit also has merit for internal purposes, such as cost reduction and raising awareness about sustainability matters. For example, Fitness First, the largest global health club and gym operator, implemented the Environmental Management and Measurement Application (EMMA) from Oracle partner Knowledge Global to automatically collect and report energy data from sensors and meters across 95 gyms in Australia. This data is fed into a consolidated analytics dashboard, which establishes accurate baselines, creates benchmarks across facilities, measures improvements, and helps forecast savings. This consolidation of energy data also supports Fitness First’s mandatory greenhouse gas reporting to the Australian government for the coming financial year.

“The primary goal of Fitness First in undertaking this project was to reduce our carbon footprint by lowering energy consumption within our gyms,” says Michael Rose, procurement manager at Fitness First Australia. “The vast amounts of energy data consolidated in EMMA’s dashboard make complex analysis very straightforward but outstandingly valuable to Fitness First’s plans.”

Organizations can derive strategic advantage by embracing sustainability as part of the business and disclosing the details of their sustainability efforts to external stakeholders. The benefits include cost savings by limiting waste and consumption of natural resources, enhanced brand value and reputation with customers and partners, better risk management, the ability to attract capital from green investors, and the opportunity to attract better staff by offering a great place to work.

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The Evolution of Enterprise Carbon and Energy Management Software
forrester.com/go?docid=56555
Oracle’s Solutions for Sustainability Reporting