THE ISSUE

Accelerating Decarbonization

KEY TAKEAWAY

There's a growing need for accurate carbon reporting – that's only going to grow more urgent – and only digital solutions will offer the accuracy and speed required to provide it

The current situation

Companies are under enormous stakeholder (and in some cases regulatory) pressure to disclose their carbon emissions. In time, that is likely to become a mandated financial disclosure, so the fidelity of measurement and the verification of data around carbon emissions is only going to grow more important.

Right now, most of the reporting pressures are related to Scope 1 (i.e. direct) emissions. Most businesses have a rough idea of their carbon emissions in this area, which is good. But there's a big 'but'.

First, 'a rough idea' is very rapidly going to become 'not good enough', both from a plant efficiency perspective and from the point of view of maximizing participation in carbon offset markets.

Second, it's a case of 'when' not 'if' for regulatory requirements to move to Scope 2 (or 'indirect') emissions, where most businesses have far less insight than Scope 1.

And, sooner rather than later, Scope 3 will be included too, so businesses will have to report on the emissions profile of their whole organization, from supply chain through to end customers. In this kind of reporting, most businesses are pretty much flying blind.

Summary

There's an urgent and growing need for businesses to build the systems that let them record, analyze, and use carbon emissions data quickly, accurately, and transparently.

So, what's stopping them?

The key challenges

There are three major challenges facing businesses when it comes to carbon emissions reporting

01

Manual measurement systems

Measuring enterprise-wide carbon emissions is currently an extremely manual process in most businesses. They lack the right systems infrastructure to pull data from OT and IT systems while also incorporating manual data inputs, leading to a data gap, both in terms of data quality and data processing.

Rather than a repeatable, scalable process for gathering, normalizing, conditioning, and analyzing carbon emissions data, businesses rely on a small team with a 50-tab Excel document performing the calculus themselves, putting it into a report, and hoping for the best.

02

A lack of methodological rigour

This is true on both a micro and macro level. For the reasons listed above, different enterprises have developed different methodologies for interpreting and presenting carbon emissions data. That makes comparisons between businesses extremely difficult, and even within businesses there's an incentive to cherry-pick the methodologies that show the enterprise in a best light rather than compared to an agreed standard.

03

Data is retrospective and disconnected from decision-making

Businesses often only get figures on carbon emissions six to nine months after those emissions happened. And, even then, because of the manual nature of the collection and analysis there may well be disagreement over the accuracy of the data.

Both factors mean that carbon emissions data is highly retrospective and disconnected from decision-making at both an enterprise and operational level. The data simply doesn't have the fidelity or resolution levels required to make holistic decisions like a price on carbon or a plan to reduce carbon emissions.

The digital solution

There are a number of areas where digital transformation and integration will help businesses meet these challenges.

Digital solutions offer far more efficient and rigorous ways for companies to measure and manage carbon emissions. By building a robust set of workflows and systems connected to digital carbon monitoring devices, businesses can automate a process that provides an audit trail for where data was pulled from, how it was conditioned, and what methodologies were employed to analyze it. Finally, this system can push that data back into a software system for reporting purposes.

Once such systems are in place, businesses will benefit both intrinsically and extrinsically.

First, because the data can be pulled far more efficiently, it can be used in making operational decisions such as where you source your feedstock or how you optimize individual assets or the plant as a whole. Having a near real-time understanding of your carbon intensity is going to be increasingly important in gaining and maintaining competitive advantage as you maximize revenue potential at a plant and asset level.

Second, participation in either voluntary or compliance carbon markets is going to rely on a certain level of carbon emissions data fidelity. And, once in such markets, the more robust and timely the methodology you use to provide carbon emissions reporting, the higher the premium you'll be able to charge as a result of your carbon removal or carbon avoidance projects.

Want to find out more?

For a more in-depth look at the current situation around decarbonization and how digital technologies will help enterprises achieve their goals, read our latest whitepaper: Sustainability & Profitability: How Digital Solutions Can Help Power Generators and Oil & Gas Producers to Find the Balance in the Energy Transition.

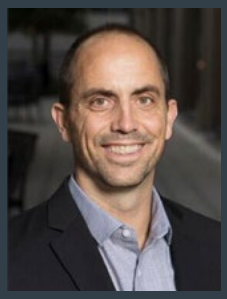
READ MORE →

Dig deeper into the Energy Transition with resources focused on:

Why energy operators should focus on Accelerating Decarbonization

How to leverage digital solutions to Decarbonize Heavy Industry

Unlocking value with Intelligent Asset and Fleet Optimization



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John has 14 years experience in technology product management and engineering at GE working in the Energy and Oil and Gas sectors. He has served in roles spanning reliability engineering, outage and turnaround engineering, technology strategy development/ execution and technology product management in areas of asset management, operations management and reliability management.

John also has 10 years experience in operations in the United States Air Force where he served as an instrucor pilot and a fighter pilot. He holds a MS and BS degree in engineering.

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