***Data Management*** Technology

Author: Peter Sherwin - Global Business Development Mgr.

WATLOW®
*Powered by Possibility*

# New SEC Scope Reporting Rules Highlight Need for Data Management Systems and Efficiency Across Heat Treating Industry


## *Summary*

**The Securities and Exchange Commission (SEC)** recently passed new rule changes, originally proposed in March 2022, to enhance and standardize climate-related disclosures for investors. The new rules affect all publicly traded companies registered in the US, requiring the disclosure of greenhouse gas (GHG) emissions and other associated climate change risks, and how their board and management are dealing with oversight and governance of climate-related risks in general. Companies and suppliers also will need to identify and disclose any specific, material climate-related risks (both now and in the future) and articulate their impact on financial performance and strategy.

**The new rules will have a swift impact on the heat treatment industry specifically.** While many heat treatment companies will fall outside the reporting requirements for publicly traded companies, the major corporations using heat treated products will require this data from their suppliers and partners to complete their analysis. Those companies not tracking and reporting emissions ("scope reporting") risk being left behind, not just in the United States but around the globe.

**There is an upside to the announcement as well:** Putting technologies into place to comply with this reporting will also position heat treatment plants to better monitor and manage their energy usage, potentially saving on their energy costs.

## The SEC Rules, in Plain Language

From time to time, the SEC updates its disclosure requirements so that investors can make clear, data-guided decisions about the kinds of risks they want to take. The most current rule changes with regard to climate require registrants to disclose thing like:

- Climate-related risks that have had, or are reasonably likely to have, a material impact on the registrant's business strategy, results of operations or financial condition.
- Information about a registrant's climate-related targets or goals, if any.
- Any strategies to mitigate or adapt to climate-related risks, along with expenditures and financial estimates of such activity.
- Specified disclosures regarding a registrant's activities, if any, to mitigate or adapt to a material climate-related risk, including the use, if any, of transition plans, scenario analysis or internal carbon prices.
- Any processes the registrant has for identifying, assessing and managing material climate-related risks and, if the registrant is managing those risks, whether and how any such processes are integrated into the registrant's overall risk management system or processes.

This list is neither comprehensive nor complete; its purpose is to give some indication of the kinds of things to be reported. (For an overview, see the **SEC's March 6 announcement**.) The new rules aim to improve the efficiency and effectiveness of climate risk disclosures and meet investor demand for reliable information on climate risks.

A specifically challenging element of the new disclosure requirements concerns comprehensive reporting of greenhouse gas (GHG) emissions. In this regard, the rule is similar to the **Task Force on Climate-Related Financial Disclosures (TCFD)** framework and recommends using the GHG protocol or other universally accepted emissions calculations—often referred to as "scope reporting." Many companies will need to disclose Scope 1 and Scope 2 emissions, while the SEC has determined that it is going to take a "more layered approach" with regard to Scope 3 emissions. (Thus, while Scope 3 emissions disclosures are not being required at this time, the SEC recognizes that investors are using Scope 3 information in their investment decision making.)

The timetable for implementing this scope reporting varies by company size:

| Company Size | Item 1505 (Scopes 1 and 2 GHG emissions) | Item 1506 Limited Assurance | Item 1506 Reasonable Assurance |
|---|---|---|---|
| Large Accelerated Filers ($700 million+ Initial Public Float) | FYB 2026 | FYB 2029 | FYB 2033 |
| Accelerated Filers ($75 to $699 million Initial Public Float) | FYB 2028 | FYB 2031 | N/A |

Here, "FYB" refers to any fiscal year beginning in the calendar year listed. **These final rules are effective on May 28, 2024.**

Note that Scope 1 and 2 reporting is not required for non-accelerated filers (NAF), smaller reporting companies (SRC), or emerging growth companies (EGC).

## Preparing for Scope Reporting throughout the Supply Chain

While many heat treating companies may fall outside the publicly traded reporting requirements for publicly traded companies, they are intimately involved with such companies up and down the production chain. Major corporations using heat treated products will start requiring this data from their suppliers to complete their analyses and make detailed reports available to investors and potential investors. In short, heat treatment companies will need to prepare for compliance, too.

Collecting and collating the data necessary for compliance, coupled with evolving regulatory standards elsewhere, is enough to keep a team of people consumed by administrative tasks. However, if the industry doesn't start collecting and understanding this data, not only will the energy costs and emissions continue as they are—or increase—there is also the risk of losing contracts to more efficient and transparent companies, negatively impacting the bottom line for those that lag behind.

## What Will Need to be Reported? TCFD's Scopes

The TCFD gives a reporting framework in terms of the scope of emissions reporting; understanding these scopes and what is required for each will help clarify requirements and point the way to the right technology solutions that will make compliance possible:

| Scope | Relevance to Heat Treat | Reduction Recommendations |
|---|---|---|
| **Scope 1**<br>(Direct Emissions) | Heat treatment processes often involve the combustion of fossil fuels like natural gas, propane, or oil to generate heat. Direct emissions are attributed to the equipment used in the heat treatment process, such as furnaces and ovens. | Upgrade to more efficient equipment.<br>Adopt alternative heating technologies, like induction or electric process heating systems. |
| **Scope 2**<br>(Indirect Emissions from Energy) | Emissions associated with generating the electricity used to power various components, such as pumps, fans and control systems in heat treatment processes and thermal loop systems. | Invest in renewable energy sources.<br>Purchase green energy from utility provider. |
| **Scope 3**<br>(Other Indirect Emissions) | Emissions associated with activities throughout the value chain of heat treatment applications and thermal loop systems, such as the manufacturing and transporting of raw materials, equipment and waste management. | Collaborate with commercial heat treatment suppliers to improve environmental performance of products and services.<br>Optimize transportation and logistics and implement waste reduction strategies. |
| **Scope 4**<br>(Avoided Emissions) | In heat treatment applications and thermal loop systems, avoided emissions may come from implementing energy-efficient technologies, waste heat recovery systems or other innovative solutions that reduce overall energy consumption and associated emissions. | Showcase the positive impact of their sustainability efforts on reducing their carbon footprint by quantifying avoided emissions.<br>Highlight avoided emissions when subcontracting heat treatment requirements to a more energy-efficient source, rather than running a captive operation. |

Scope reporting involves quantifying and documenting the emissions associated with various activities, processes, and sources within an organization's operations. Accurate, transparent, and meaningful scope reporting enables organizations to understand their emissions profile, identify opportunities for improvement and demonstrate their commitment to environmental stewardship.

## The SEC Ruling is Part of a Larger Trend, With More to Come

A primary function of the SEC ruling is to encourage companies to reduce their carbon footprint and promote environmental sustainability by making energy use information more visible to stakeholders, investors and the public. But the ruling is just another step toward increased requirements for emissions and sustainability reporting generally. For example, the European Union's International Financial Reporting Standards (IFRS Accounting Standards) already have guidelines in place for the disclosure of sustainability-related financial information (IFRS S1) and climate-related disclosures (S2).

Likewise, the European Union's Corporate Sustainability Reporting Directive (CSRD) **entered into force in January of 2023.** According to this directive, a broader set of large companies, as well as listed SMEs, are now required to report on sustainability. Some non-EU companies will also have to report if they generate over EUR 150 million on the EU market.

Granted, the SEC's approach to climate disclosure is slightly narrower, but more prescriptive, compared to international standards like those in the UK and EU. But, importantly, there is global movement toward Scope 3 disclosures, with jurisdictions like the UK and EU advancing mandatory climate-related risk disclosures that include Scope 3 emissions. The International Sustainability Standards Board (ISSB) also voted to include material Scope 3 emissions reporting in its standards. Thus, even with Scope 3 emissions being optional in the SEC rules, companies that do business internationally should be preparing for even broader disclosure requirements.

Finally, the state of California passed two bills in the fall of 2023 with regards to scope reporting. **SB-253, the Climate Corporate Data Accountability Act**, requires specified partnerships, corporations, limited liability companies, and other business entities over a certain size to publicly disclose their scope 1 and scope 2 greenhouse gas emissions. **SB-261, Greenhouse gases: climate-related financial risk**, requires those same entities to prepare a climate-related financial risk report that includes any climate-related financial risks, as well as measures adopted to reduce and adapt to climate-related financial risk.

Collectively, we can think of these standards and rules as a call for greater visibility when it comes to climate issues. Where this has the greater impact is in the monitoring of energy—both its source and its use. Thus, energy visibility is key to ensuring all parties have the information needed to make process changes and report compliance with the new scope reporting regulations.

## Energy Information, Energy Visibility and Data Capture

Theoretically, energy information (data) is available at every step of a production process; the call for energy visibility is a call to have this energy information closely monitored, analyzed and reported. Data capture plays a critical role in energy visibility, and the requirements for scope reporting have created a timeline for implementing data captures technologies.

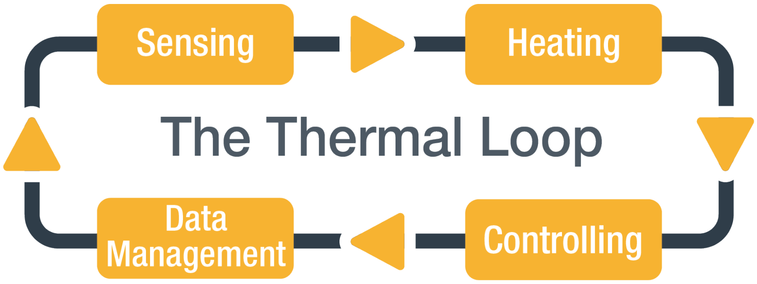
Data capture contributes to energy visibility through:

1. **Measurement and monitoring** of emissions from various sources, aiding in understanding and tracking changes over time.
2. **Emission calculation** using real-world data, facilitating accurate reporting of direct and indirect emissions (Scope 1 and Scope 2).
3. **Identification of emission "hotspots"** (areas that contribute most heavily to emissions), which in turn aids in prioritizing mitigation efforts.
4. **Enhancing transparency and accountability** in reporting, building trust with investors and other stakeholders.
5. **Providing insights for decision-making** and strategic planning to improve efficiency and reduce costs.

In addition, data capture can help emissions indirectly by making process heating more efficient and less prone to problems. For example, thermal loop systems with appropriate sensors and controllers are able to detect thermal drift more easily, which improves process quality while also making energy consumption more efficient. Such sensors often also can detect anomalies that might signal the need for preventive maintenance before a problem arises.

## Examples of Thermal Loop Solutions with Data Capture

Heat treatment thermal loop solutions offer sustainability benefits by reducing energy consumption and waste, and they surpass traditional methods with better temperature control, faster heating and cooling for optimized soak times and higher efficiency.




Of the various components in a thermal loop solution, the power controller (an SCR, typically) plays a critical role when it comes to both power management and data capture/energy visibility.

**Power management.** Power controllers can help regulate power output to minimize energy waste, and, when paired with renewable energy sources, serve as a much more sustainable alternative to more traditional gas-fired thermal solutions. Furthermore, predictive load management functions (load sharing and load shedding) and hybrid firing algorithms help contribute to sustainability by optimizing the energy usage of heat treatment processes.

**Data capture and energy visibility.** Advanced power controllers offer real-time monitoring and control of energy consumption. Together with an energy audit, this can be used to set parameters for power management and provide the needed scope reporting with regard to Scope 2 emissions (and customers trying to assess their Scope 3 emissions).

Watlow, together with Eurotherm, offers a number of power controllers that are complete solutions with regard to both of these capabilities. For example::

- **The *ASPYRE*® family** is flexible, scalable, and offers various options, allowing one platform to be reused across a wide range of applications.
- **The *EPower* controller** uses the newest technologies to manage processes and reduce energy costs, with measurement accuracy, functionality and innovation that delivers extraordinary power control.
- ***The EPack™* compact SCR power controller** family is designed for fast integration and optimum efficiency.

***ASPYRE*** family of controllers

***EPower*** controller

***EPack*** controllers

Those interested in finding a specific power controller for their needs are encouraged to **download our article on finding a power controller**. To configure a power controller and get an estimate of price, we recommend **visiting our power controllers page** and selecting the "Configure and Price" option for your chosen controller.

Outside of power controllers, Watlow also offers several data recording solutions, such as our ***F4T*®** temperature controller with data logging capabilities, and the **Eurotherm *nanodac*™** data recorder.


***F4T*** temperature controllers


**Eurotherm *nanodac*** data recorder

## The Next Generation of Solutions is Coming

Reporting standards and national laws are not static, and neither are the technologies that make data collection, monitoring and energy management possible. While the above solutions are more than adequate for the needs of the heat treatment industry, there is already a new generation of technologies being developed to allow for even easier monitoring and more precise control. These efforts also align more generally with Industry 4.0 (I4.0) and digital transformation projects, which many larger manufacturers have already begun to implement.

As these projects continue to gain momentum, heat treatment thermal loop solutions will become increasingly important. Integrating digital technology and machine learning algorithms will provide even greater control, traceability and transparency, enabling organizations to make informed decisions based on real-time data and predictive analytics. And as new materials and manufacturing processes are developed, adaptive and flexible heat treatment will require thermal loop solutions that can provide the necessary level of control.

Pilot projects are already under way at some heat treatment plants:

- Installing data **"gateways"** on site to port information for analysis and provide reports.
- Exploring process drifts and thermal excursions, and finding ways to prevent or mitigate such drifts and excursions.
- Developing a **"big picture"** view of energy use across processes to accurately cost those process—in some instances, being able to do so for the first time.
- Providing metrics for **Overall Equipment Effectiveness** (**OEE**).

## Summary

The SEC's announcement comes as no surprise, and it will not be the last we hear about scope reporting. The trend seems to be toward more global disclosures, with increased requirements regarding Scope 3 disclosures in particular. This means that the heat treating industry will be impacted as larger customers try to get a handle on what their supply chains and manufacturers are doing with regard to climate and sustainability efforts.

The technology for this scale of data capture is currently available, but it is also constantly evolving. The logical next step for an organization attempting to reach compliance with scope reporting is to consider the array of options for this kind of data capture. Not only will this help ensure compliance, but it can also have a dramatic impact when it comes to energy costing and savings.

For more on scope reporting generally, or scope reporting in the heat treating industry specifically, contact Peter Sherwin: Peter.Sherwin@watlow.com.