

Accelerate ESG value now from existing chemical operations

Environmental, Social and Governance (ESG) has become increasingly relevant for the global Chemical Process Industry as operators strive for a Net-Zero carbon future. A best practice approach demonstrates renewed value in helping to **reduce carbon by up to twenty five percent in three to five years with immediate savings beginning today.** However, based on a recent survey conducted by Chemical Week for Argo Consulting, many Chemical Process Industry companies have yet to leverage this opportunity. The answer lies within your existing operations.

Building an effective and highly efficient operational foundation is imperative to meet rising ESG responsibilities and commitments, while maintaining business vitality and integrity, and enabling capital and expense reallocation to support alternative ESG growth technology development and deployment.

A robust Operational Excellence Program accelerates ESG improvement. The most efficient and carbon advantaged

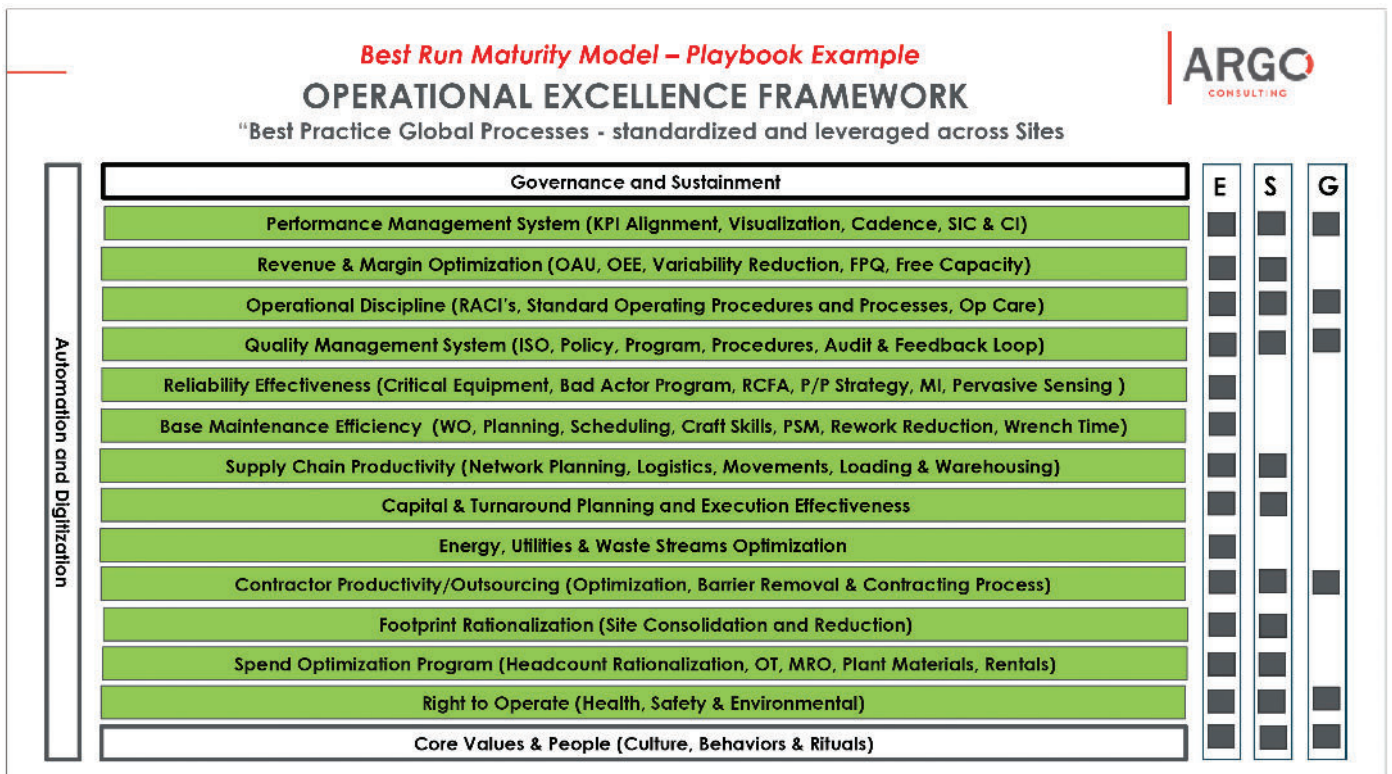
companies are clearly those that generate the most value from the fewest resources; whether those resources are capital intensive plant assets and labor to manufacture products, energy, and water to operate plant utilities, waste streams and raw materials.

Simply stated, the goal is to do more with less. A highly optimized footprint with effective work processes will enhance asset, resource and logistics utilization and will require substantially less carbon.

All of the chemical companies surveyed agree that a robust Operational Excellence framework is an essential foundation and enabler to ESG. However, **less than 30% of chemical companies surveyed have an effective program in place.** 50% of the companies reported that they are currently working on creating a program and 20% have not started at all. A well-defined Operational Excellence strategy and accelerated implementation approach must be top of mind to achieve your objectives.

When deciding where to allocate resources to achieve your ESG objectives, you may want to ask yourself these questions:

1. Is your value chain footprint optimized and operating at or close to best-in-class performance that adheres to EHS requirements? How do you know?
2. Are you efficiently converting raw materials and energy into the intended commercial products?
3. Are your annual operating expenses and infrastructure capital investments at a sustainable and best-in-class level? What are your OPEX and CAPEX requirements ratios to your current asset base replacement value, and what opportunities do they present?
4. Are you sustainably maintaining your license-to-operate and fulfilling the expectations of your social commitments to important stakeholders such as shareholders, employees, customers, and the communities in which you operate?



5. Do you fully understand what the human impact, environmental impact, and the financial benefits would be if you were able to decrease your daily operational unplanned events by just 10%?
6. Are you proactively working with your material suppliers to help them reduce their carbon footprint and/or ensuring ESG is a consideration during the buying process?
7. Do you have an effective SIOP process to accurately plan and execute orders that maximizes asset availability, resource utilization, and transportation?
8. Do you have a transportation management system that is optimizing loading density and routing, as well as reducing idle time for over the road transportation?

The good news is that operational improvements that will enable and accelerate the ESG transformation are hiding “in plain sight.” While these opportunities are not novel, they are many times accepted as the norm as they tax the organization, consuming significant amounts of human energy and financial resources to either maintain status quo or make marginal improvements. Sometimes they are referred to as the “hidden plant/s.” Based on our experience working with companies that were intent on capturing these opportunities, collectively we have been able to make significant gains in EH&S, asset availability and cost reduction performance through an energized, targeted improvement focus on operational excellence, reliability, and waste minimization.

Practical first steps to build a strong foundation for ESG include the following:

1. Implement an effective LEAN management program to ensure you are operating in the most efficient way to minimize waste in current work processes and supporting systems e.g., value-stream mapping, Kaizen, 5s, Kanban, SMART, Gemba walks
2. Implement effective maintenance and reliability management processes, systems, and tools to transition from the industry experience of highly reactive work to predictive, preventive and planned effective and efficient work.
3. Relentlessly focus on improving asset utilization and OEE (Overall Equipment Effectiveness) to drive capital efficiency and elimination of unplanned events, which inherently create unsafe conditions

- and incur higher costs to mitigate.
4. Understand the raw material and energy conversion efficiency versus theoretical and best-in-class performance to improve yields, energy intensity, and reduce rework.
5. Ensure you have a well-designed and executed SIOP process to tightly synchronize material movements, process orders and logistics.
6. Implement an effective transportation network strategy and system to optimize loading, carriers, and routes.
7. Strategically focus on procurement optimization to mitigate material risks and spend, source from low-cost countries, and buy from companies that themselves have ESG strategies in place.
8. Get started today with an opportunity assessment workshop that will include an analysis, opportunity identification and prioritization, and a value realization implementation plan supported by a realistic business case.

A paramount accelerator in this transformation is enabling and empowering every individual in your organization to understand how their individual actions, within their sphere of control and influence, can impact the higher level corporate ESG goals and aspirations. Knowledge, understanding, and purpose is incredibly necessary and inspirational! However, providing practical SMART objectives at every level that are captured in a robust, aligned Performance Management System, with clear enterprise LOS (line-of-site), is essential to create a performance-driven reliability mindset and accelerate transformative change toward a preferred ESG future.

Embracing a pragmatic approach and leveraging a proven Operational Excellence Framework is the quickest path to success. The model noted in this article is a best practice example that has been used at many clients to take their operations to the next level and improve both ESG and business performance.

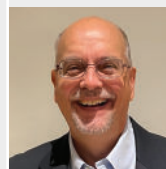
So why wait? The focus on Environmental, Social and Governance (ESG) continues to increase globally. Notable industry leaders have already announced major ESG related capital investments. **Companies are under increasing pressure from shareholders, investors, legislators, regulators, customers, employees, and suppliers** to make commitments to achieve or adhere to ESG standards, especially carbon emissions which is directly linked to use of energy and resources to produce and distribute finished goods to consumer most effectively and efficiently. Without question, the broader ESG journey will require technological breakthroughs and significant capital infusion. **However, there is a pragmatic way today to demonstrate substantial operational ESG progress that will unlock measurable business value capture now, preserving precious capital for necessary transformative change.**

Ready to take your operations to the next level? Argo's Best Run Chemical Operations Playbook includes proven best practices to make an immediate impact and accelerate your journey.

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