The journey towards sustainable manufacturing

Whether prompted by stakeholder demands, regulatory mandates, a concern for the environment, or pure financial motives, one thing is clear: the sustainability imperative appears to be growing. Manufacturers can no longer confine sustainability to a reporting activity by simply publishing aspirational targets in their annual reports. To make the progress necessary to shift the dial, they will instead need to commit to clear action.

Here are some ways to consider getting started:

Plan
• Assess your current state. As a first step, it’s important to measure your facilities’ current carbon profiles, as well as your products’ in-field performance, to build a baseline of your environmental footprint or the output of your current processes. Examples include utility monitoring to measure water and power consumption; analytics to help you identify areas to reduce waste across your manufacturing processes; deploying route optimization software to monitor your distribution practices; or using intelligent tires to measure fuel consumption and tire wear. This exercise should help you determine where to best focus your energies to make the biggest impact.
• **Refresh your strategy.** Ensure you have made explicit, systemic choices underpinning your strategy, from your winning aspiration through where to play, how to win, and the capabilities and management systems you need to execute effectively. From there, create a roadmap to hit your end goal and define what levers you can pull. This may include reallocating spend into new markets where you are best able to differentiate, identifying strategic acquisitions, pursuing accretive partnerships, and/or redesigning processes and operating models to put sustainability at the heart of your decision-making. The best strategies in the face of uncertainty—which is the condition inherent to a decarbonizing future—are generally built on scenario planning. These take into account multiple, equally plausible but divergent futures and identify both ‘no regrets’ actions that would be resilient under any scenario as well as signposts and leading indicators which you can monitor to determine how the relative likelihood of each scenario shifts as the future plays out.

• **Set targets and define priorities.** Built on your strategy, this includes identifying program milestones, building out viable use cases, and using lessons from elsewhere—not just best practices but interesting analogues from different settings—to enhance your odds of success at creating lasting advantage. Beyond considering your end customers’ priorities and expectations, this should also see you gaining a stronger understanding of the range of decarbonization pathways available to you. Project multiple different options for what those pathways might look like, based on shifting assumptions around demand conditions, policy moves, and technology development curves. Ideally, use tools which can map down to asset-level projections which you can roll up for a company-wide pathway rather than top down target-setting, which all too often misses the practical realities of what can be achieved, and dynamically shift your planned path forward as uncertainties resolve into trends.

• **Consider funding and tax implications.** Review your capital allocation process to bring carbon into the equation. Look at alternative funding mechanisms, too, such as green bonds, ESG investment funds, available tax incentives, carbon trading schemes, private equity funding, and partnerships/joint ventures.

• **Address cultural imperatives.** Sustainable manufacturing can only be achieved by setting the right tone from the top, gaining buy-in, and considering the change management implications. This means determining what priority sustainability holds within your corporate agenda—and how that aligns with your broader strategy. Experiential training is also typically key to gain buy-in for the move towards improved sustainability outcomes. Similarly, executive support is critical to drive meaningful change. One way to tackle this is by linking sustainability KPIs to executive remuneration.

**Execute**

• **Define necessary roles and responsibilities.** This may include appointing people to new roles (such as a chief sustainability officer) to lead these initiatives at a strategic level. The key here is to demonstrably make sustainability a corporate priority by securing senior leadership buy-in, rather than relegating it to a “nice-to-have” initiative that languishes on the corporate backburners.
• **Make careful investment decisions.** Questions to ask in this regard include: What sustainability metrics is the company under pressure to deliver on? Is there a convincing and supported business opportunity to address those expectations? Which areas should you best focus on to leverage your core strengths and realize measurable financial returns? What capabilities are required to deliver on this strategy—and will you build them internally or partner/invest to acquire them? Have you considered all viable technical alternatives? How much of your internal rate of return (IRR) is driven by grants, subsidies, incentives, or tax benefits? If regulations change, how significantly may this affect your business case?

• **Form structured ecosystems to overcome potential barriers.** Although the case for sustainable manufacturing is growing stronger, significant barriers persist. Regulatory constraints, such as a lack of government incentives to make alternative energy more affordable, make it economically challenging for many manufacturers to pursue this path. Uncertainty around market mechanisms can stymie action (e.g., which comes first: EVs or the power grid?). Obstacles around financing and customer acceptance of unprecedented designs also frequently lead to inaction. And cultural impediments persist—from short-term thinking and difficulty measuring environmental impacts to concern about alienating a subset of customers or employees by taking a stance.

This all speaks to the imperative of forming structured ecosystems to bring partners together—including manufacturers, industry associations, third-party providers, and regulators. To truly move the needle on sustainability outcomes, a coordinated approach is necessary—one that creates a virtuous circle, where all participants up the game (see example 5). Complexities unquestionably exist around how manufacturers can work together to address sustainability concerns. Yet the time for best efforts is now—before the manufacturing sector finds itself facing the type of existential threat that forced industries such as mining and oil and gas to explore collaborative solutions to their collective problems.

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**Example 5: Partnering to succeed**

As part of its commitment to eco design—an approach that has seen it adopt energy-efficient solutions and make smarter material design choices—in 2020, Philips reportedly achieved its goal to become 100% carbon neutral. With sustainability as a key priority, the company also sources 100% of its electricity from renewable sources.

Not content to rest there, the company is looking for ways to collaborate with its suppliers and customers to magnify its impact. This includes working with customers to reduce emissions during product use, collaborating with suppliers to reduce emissions across the supply chain, and exploring ways to adopt circular economy principles. Philips is orchestrating local material use across its production sites, has embedded emissions in its material selections, and has shifted the conversation from waste management to resource management.

Looking forward, Philips hopes to drive systemic transformation towards a circular economy by stimulating the behavior of end consumers as well—and is already taking steps to inject greater rigor into the identification of functional metrics to track its progress. By adopting a transparent approach and prioritizing data reliability, the company hopes to drive industry-wide change across the ESG spectrum.
Reflect

• **Measure progress and create a clear market narrative.** With robust and accurate measurement systems, manufacturers can do more than simply measure the progress of their sustainability initiatives. They can also use those outputs to create a clear market narrative around the positive impacts they are driving—painting a powerful picture for investors and consumers alike, all the while improving transparency to stakeholders.

• **Play a role in shaping the dialogue.** Although some companies may be tempted to take a wait and see attitude around sustainability, this stance could be risky. Rather than waiting for public opinion to settle against you, it may make sense to work proactively with associations to develop an industry point of view that helps shape opinion.

• **Think through unintended consequences.** In the quest to improve environmental performance, it’s important to examine the downside implications of your decisions as well. For instance, while EVs have the potential to reduce automotive emissions, the benefits may be diminished by the environmental impacts associated with the mining and manufacture of battery minerals. True progress mandates the adoption of a lifecycle approach.

Better yet, identify the future in which you hold advantage and act quickly to catalyze outcomes that increase the likelihood of that future coming true. In the face of uncertainty, the best leaders understand that the instinct should not be to analyze more (by definition, a retrospective exercise) but rather to act faster and in smaller increments.

By focusing on long-term outcomes, working collaboratively with industry stakeholders, and adopting a deliberate and coordinated approach, manufacturers have the capacity to realize significant benefits on the road towards sustainability. These extend from improved competitiveness and efficiency, to reduced costs and risks. Yet the true measures of success will pervade well beyond the shop floor. By driving measurable sustainability outcomes, manufacturers also have the power to create lasting social value.
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