



Building a better
working world



Steering Sustainability with Integrated Supply Chain Planning

Enriching your Company's Integrated Supply Chain
Planning with the ESG Dimension to Create Long-term
Value and Resilience

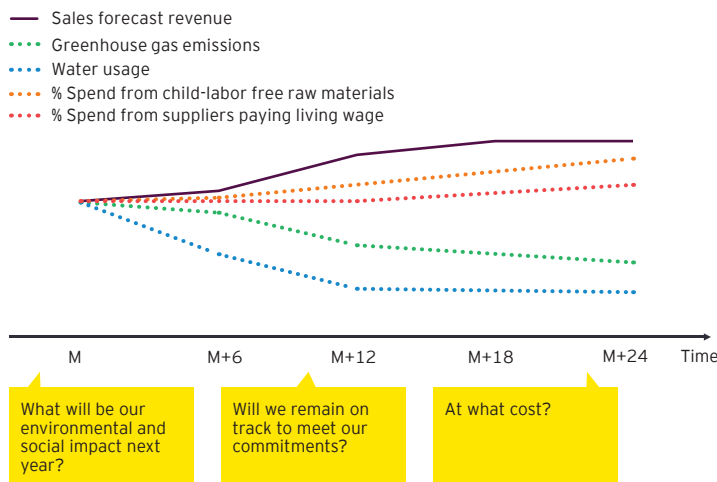
Making Your Supply Chain Ready for the Next Challenge

The increasing pressure applied on companies from rapidly evolving laws and regulations and from changing expectations of customers, investors and wider society **makes sustainability action an inescapable business imperative.**

Yet, despite the ever-growing number of companies that have embedded sustainability into their strategy, set ambitious targets and are disclosing progress towards them, value chains are still falling short of delivering on their commitments at the speed and scale required by the urgency of environmental and social issues the world is facing.

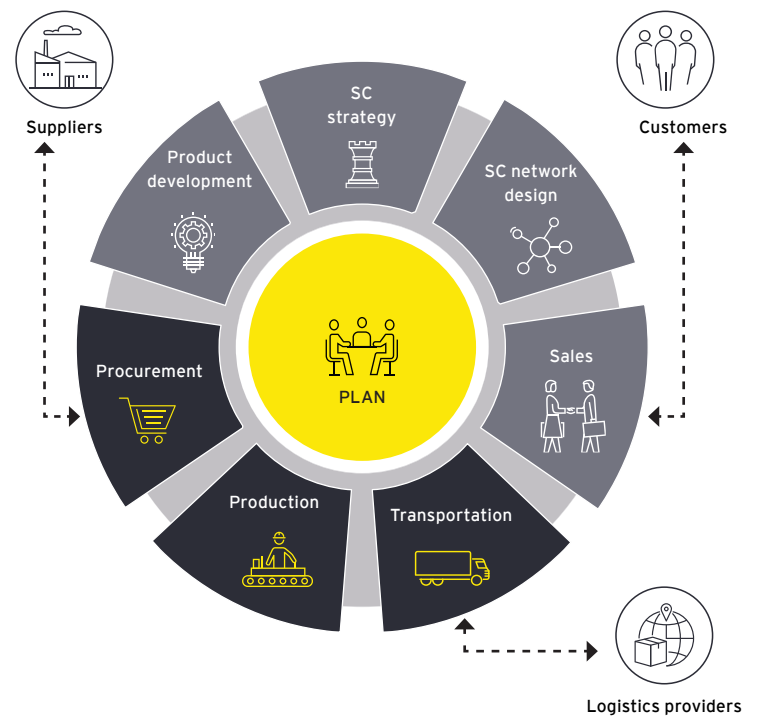
Even when goals are clear, action plans are defined and progress is tracked and disclosed through reporting, **the disconnect between intention and action remains too wide.** A reason for this is the difficulty of making one's own sustainability strategy actionable, measurable and transparent for all internal and external stakeholders. Even in the favorable case where employees of each node and function in the value chain understand the corporate sustainability strategy and the role they can play towards achieving the set goals, how can the impact of daily decisions be assessed and considered? The reporting-dominated, backward-looking view on sustainability performance and the inability to project future environmental and social impacts are currently preventing the anticipation of meaningful action.

Figure 1: The current challenge of embracing a forward-looking view on sustainability impacts



This is precisely where supply chain planning should enter the game: By having both the visibility over all physical and information flows as well as the duty to steer operations along the end-to-end value chain, **planning can act as a catalyzer of the transformation.**

Figure 2: The zone of direct and indirect influence of supply chain planners on sustainability impacts

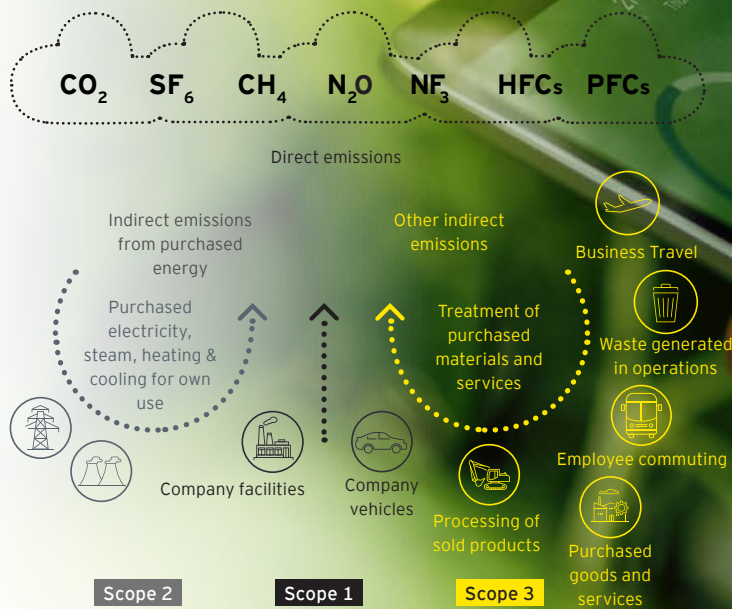


Considering ESG factors will add a whole new dimension to your supply chain planning. EY can help starting or improving this journey of Sustainable Supply Chain Planning. We want to illustrate how the ESG dimension can be integrated into your supply chain planning operating model, and how it will allow planners to work towards the bottom and the green line.

Creating Positive Impact and Making it Transparent

On the climate front for instance, companies are setting their very own strategies and science-based targets towards achieving net zero. Making your company sustainable has become a priority, and the value chain is a good place to start, considering that on average 80% of a company's carbon footprint fall under Scope 3.

Figure 3: Scope 1, 2 and 3 greenhouse gas emissions according to the Greenhouse Gas Protocol



To achieve a successful move towards a more sustainable supply chain, additional factors besides the regulatory compliance must be considered

Forcing into sight is for instance the rising investors' interest in green companies as well as external stakeholders' demand for more sustainable products and services. Making the positive impact transparent and decoupling it from negative ones will be crucial. In terms of supply chain planning this means that the general approach must be reimaged to include ESG factors. Supply chain planning needs to show the current status and forecast the improvement potentials.

Value
Chain
Sustainability

The Reimagined Solution with Holistic Sustainable Supply Chain Planning

As with any other strategy and approach, alignment and business integration will be of utmost importance to determine later tangible and achievable targets. Companies must find out what is feasible, possible and desired in terms of enhancing the environmental and social impact. The management as well as the supply chain planners should be involved from the start to develop a target operating model and framework for sustainable supply chain planning. ESG Key Performance Indicators (KPIs) will need to be defined within this framework at corporate level to enable reporting on sustainability within and outside the organization.

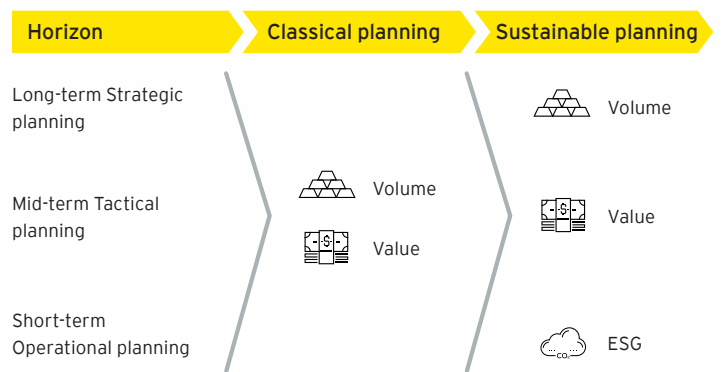
No matter whether sustainability has already been considered at corporate level in the form of a strategy that provides guidance to planners or not – the extent of influence supply chain planners may have with their scope of action on a company’s sustainability is so large that it will guide management in defining a strategy on sustainability bottom up.

After the corporate framework for sustainability has been set, supply chain planners will need to reimagine their approach and incorporate the ESG dimension from the start to achieve a truly holistic view on their supply chain in today’s sense. Holistic supply chain planning should include the ESG dimension on the strategic, tactical and operational levels to prioritize, address and understand the topics and decisions that have the most impact for companies environmentally, socially and economically.

Sustainability must be incorporated into the overall supply chain strategy and clear targets defined. However, considering ESG factors on the strategic level furthermore should actively influence decision-making on the target operating model of the supply chain and its processes. For instance, a value chain carbon footprint may be positively influenced and “designed” in terms of supplier choice, determination of locations or transportation lanes.

be put into action, meaning that the supply chain should follow its principle of “design for sustainability” and the ESG impact must be measurable based on KPIs. The targets set on the strategic level must be made tangible to all internal and external stakeholders – transparency being the goal. ESG KPIs from supply chain planning should improve the corporate sustainability reporting framework and be readily available for use.

Figure 4: Moving from classical to sustainable planning



Sustainability targets should inform the decisions made on a day-to-day basis by supply chain planners. Every activity should have the chance to contribute to a positive environmental and social impact; making planners aware of this power to change is one of the biggest drivers towards a sustainable integrated supply chain planning.

Supply chain planners have a broad area of direct and indirect influence with numerous action levers at their hand to make real-time decisions in favor of sustainability.

Figure 5: Sustainability action levers for planners

01 Improve planning



Levers

- ▶ Manage product lifecycle (phase-ins, phase-out)
- ▶ Improve forecast quality (accuracy, bias)
- ▶ Optimize inventory levels (safety stock, cycle stock)
- ▶ Optimize lot sizes
- ▶ Level production and transportation load
- ▶ Optimize production schedule (product mix, changeovers, maintenance)

Impact

- ▶ Reduced uncertainties
- ▶ Reduced inventory
- ▶ Reduced waste
- ▶ Better resource utilization
- ▶ Reduced expediting
- ▶ Reduced carbon emissions
- ▶ Reduced stress and overtime
- ▶ Reduced energy and materials usage

02 Plan improvements



Levers

Demand planning



Alternative sold products



Alternative supplier



Alternative production site



Alternative bill of materials



Alternative production process



Alternative transportation mode



Plan circular processes (return, repair, refurbish, remanufacture, reuse, recycle, recover)

Supply planning

Better plans balancing costs, service levels and ESG impact

The action levers can be mainly divided into two categories:

1 Improve planning

By "cleaning their own house", planners can already make a substantial positive ESG impact, even unconsciously. Raising planning quality through better demand forecasting, inventory optimization, capacity levelling and smarter production scheduling will automatically improve energy and materials usage, water and waste, carbon emissions as well as social and occupational factors such as stress and overtime.

2 Plan improvements

This next level requires planners to up their game and actively consider ESG metrics in their plans, along with the usual volumes, revenues and costs. Thus, by combining this new ESG lens with simulation capabilities, planners are equipped to compare various scenarios (e.g., alternative raw material, supplier, production site, transportation mode, etc.). Such an upgraded planning process allows to balance trade-offs holistically and produce plans that are not only executable and profitable, but also more sustainable.

EY can support customers and enable their supply chain planners to make use of these levers and start reimagining their integrated supply chain planning towards a more holistic approach.

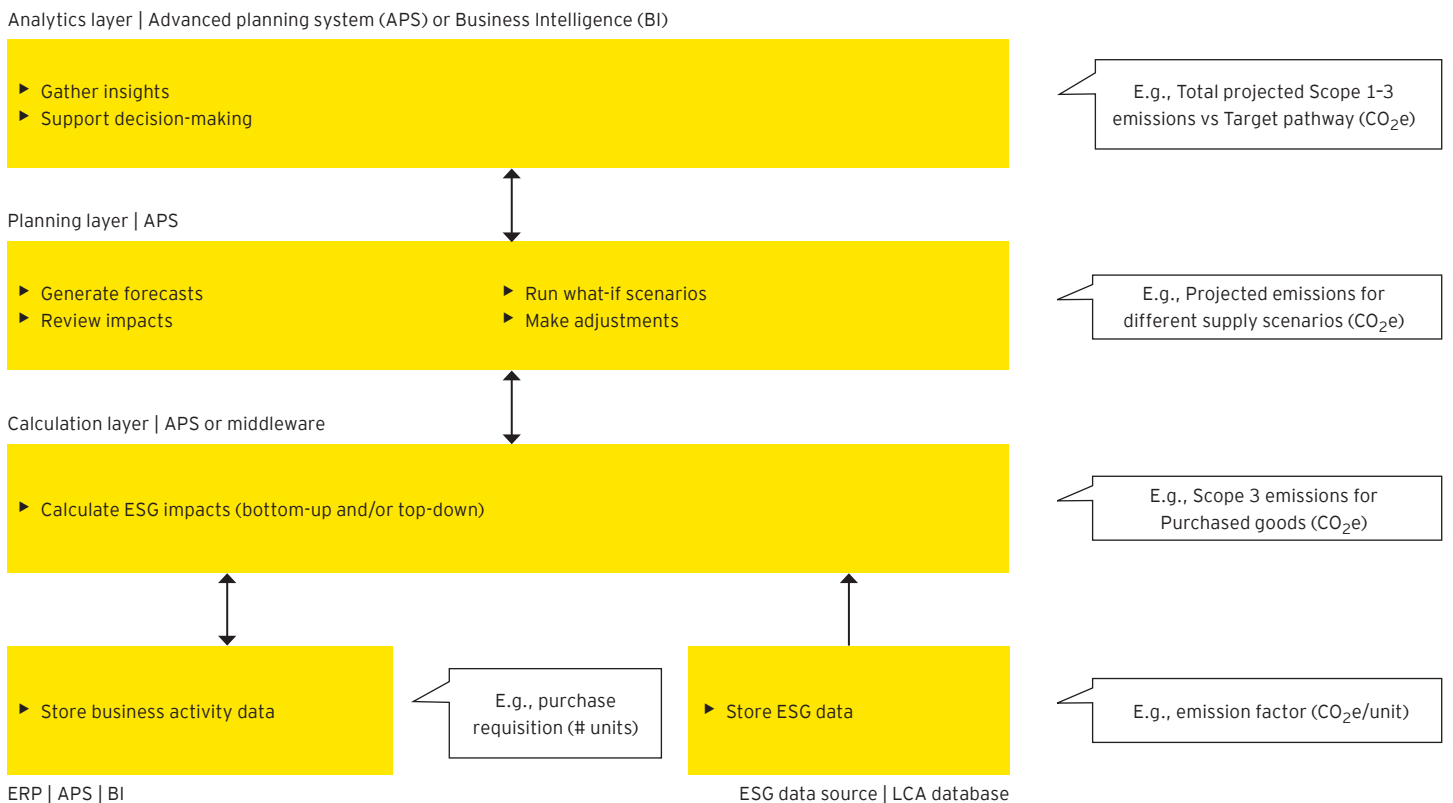
Enhance your Toolkit by adding the Sustainability Dimension

Trail

Supply chain planners today have out-of-the-box technology and software at hand helping them with their decision-making and managing complex supply chains. However, to bring the ESG dimension into the technology landscape and the planning systems, it must first be discussed where it applies in the supply chain. Also, it is necessary to validate the usage of Artificial Intelligence and Machine Learning connected to advanced planning technology.

This process of understanding how environmental and social impacts are associated with the company's supply chain and what data will be needed to be able to steer the sustainability transformation is very individual and requires a strategic approach. **To achieve valuable insights** and support for decision-making on sustainability through advanced analytics, **the ESG data and metrics will need to feed into all layers of enterprise systems**, as it is illustrated in the example architecture below.

Figure 6: Exemplary system architecture for sustainable planning



A variety of solutions in the market allows to fully develop and leverage on sustainability capabilities by investigating the environmental and social impacts of the supply chain and allow for insights on how to predict, prepare and mitigate effects more efficiently.

Plan to Win – Transparency is Key

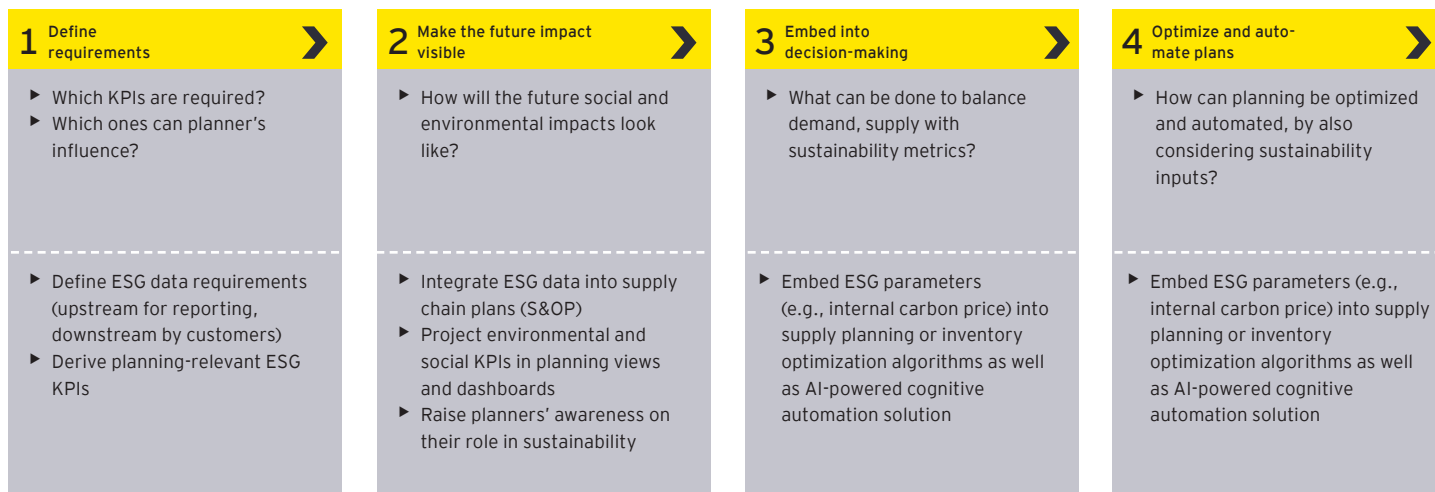
Adding the ESG dimension to an integrated supply chain planning will make the company’s supply chain more robust and the brand more resilient. **Better transparency will in the end lead to improved sustainability.** EY wants to encourage clients to act and own, design and steer their sustainability journey to create change and make a difference.

No matter the maturity level – whether a company is trying to find the right place and time to get started to comply with regulations or whether the company is already taking charge

of this issue and now wants to become a leader in sustainability, **we all have changes afoot and can plan to win today.**

With our EY experience and leading practice, we want to help our clients balance profitability, customer service and sustainability in a fully integrated business environment – you are going to be surprised how working towards the green line and the bottom line will eventually work hand in hand.

Figure 7: The sustainable planning journey, from data collection to action



The first step is to clarify which data is needed from a sustainability steering point of view and should be translated into planning-relevant key figures (i.e., related to product flow).

The second step is to integrate this ESG data and combine it with planning key figures to provide visibility over future impacts and start educating planners with these new insights.

The third – crucial and certainly the most difficult – step is to move from insights to action, by embedding the ESG dimension into planning decisions. This requires an upgrade of the planners’ job descriptions as well as an enhanced collaboration with all functions, both internally and externally.

To go beyond, the fourth step is to enrich optimization algorithms and cognitive automation solutions with ESG factors to create optimized plans at scale.

If you are interested in an individual assessment of your company on how to leverage your supply chain planning to incorporate the ESG dimension, we invite you to reach out to our team of experts. EY can support you with the following endeavors:

- Assess current planning maturity and define future ambition
- Upgrade planning operating model (KPIs, processes, roles and responsibilities)
- Technology: Enhance existing advanced planning system (APS) or include ESG in a new APS implementation

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