KPMG

Values-based growth:

Tools to measure the impact of ESG strategies

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More and more companies are reporting their ESG activities—including 98 percent of the largest 100 U.S. firms, according to the KPMG Survey of Sustainability Reporting 2020.[1] Effective ESG strategies not only can help solve societal problems, but also can help businesses drive value creation, such as by accelerating technological innovation.[2] However, management often faces a steep challenge in determining which ESG projects and initiatives produce financial value for the firm as well as broader economic and social values.

To help companies assess the financial value of their ESG-related projects as well as the sustainability values (e.g., carbon reduction), companies can apply two techniques from the economist's toolbox: cost-benefit analysis (CBA) and economic impact analysis (EIA). These techniques are widely used by regulators, but underused in business ESG strategies.

Together, these techniques help ESG program leaders and CFOs connect the dots between an ESG decision and social and financial benefits to guide planning, get stakeholder buy-in, and verify outcomes. In this paper, we describe how CBA and EIA are being used effectively by companies today to measure and guide their ESG investments.

[1] Source: KPMG Survey of Sustainability Reporting 2020

[2] Source: Gunnar Friede, Timo Busch, & Alexander Bassen, "ESG and financial performance: aggregated evidence from more than 2000 empirical studies," Journal of Sustainable Finance and Investment, 2015

Cost-benefit analysis:

Weighing complex trade-offs

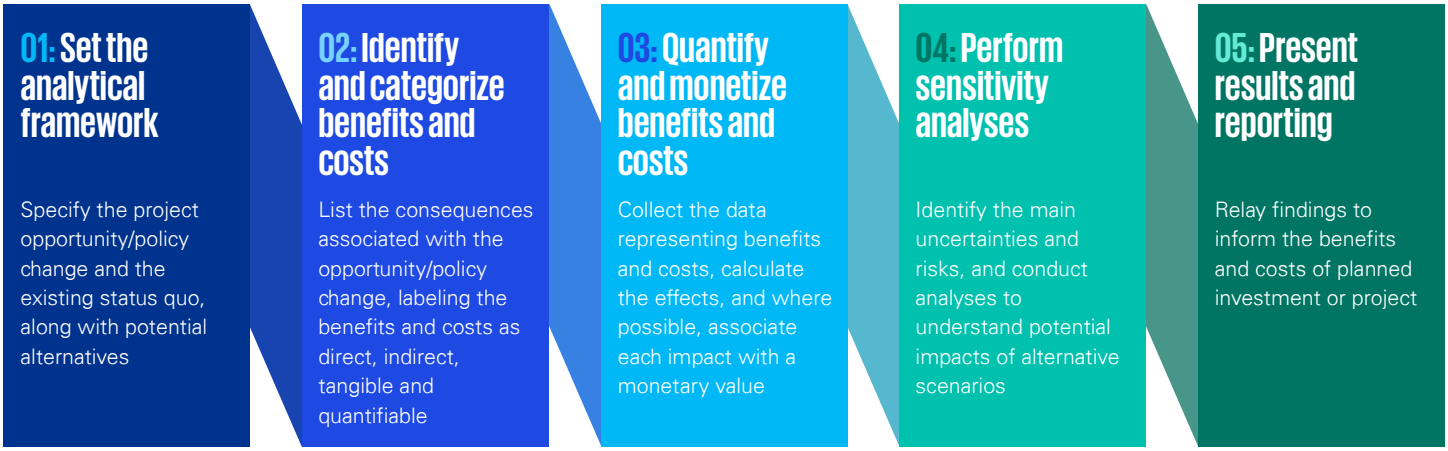
Cost-benefit analysis seeks to evaluate both the internal (financial) and external (social) consequences of a decision. While all business leaders weigh pros and cons, cost-benefit analysis provides a structured and widely recognized methodology for evaluating a complex decision. CBA is a critical tool for selecting the highest-return opportunities.

For example, a city considering the construction of a new rail transit line would use CBA to weigh the regional environmental and economic impacts versus alternatives, such as investing in electric buses for the existing bus network, which could potentially reduce carbon emissions and operating costs. Or even a very low-cost option, such as an expansion of the local bicycle infrastructure, could provide more regional economic benefits per dollar invested than bus electrification, a scenario with a greater environmental impact. Conducting a CBA produces a measure of return on investment, which allows for a straightforward comparison of the rail transit line, bus network, and bike lane alternatives.

For a company, the process is more complicated because the contribution to the company's bottom line must be factored into the ESG calculus, in addition to the economic benefits that might accrue to society. Thus, CBA is the right approach for a comprehensive assessment of both private and social impacts.

The challenge for companies wanting to make a thorough cost-benefit analysis is assigning dollar values to benefits and costs that are abstract and mostly long term: how to measure the company's economic value of reducing pollution, for example. Thanks to research involving publicly funded projects, however, it can be relatively straightforward to
assign dollar values to intangible benefits. In developing a CBA of a company's ESG initiatives, we use the following five-step framework:

Exhibit 1. A five-step framework



Applying a CBA involves going through these five steps, which can help companies make ESG-related decisions based on a thorough understanding of the potential upside, the risks, and the alternatives. Step 3, quantifying and monetizing the benefits and costs, relies on both company data and external sources, such as published empirical studies. The costs can be not only internal (such as construction) but also external (such as traffic congestion). The benefits can also be internal and external. External benefits are often estimated using the social cost of carbon to account for the lower greenhouse gas emissions and other health benefits of ESG investments. CBA can help secure buy-in among internal and external stakeholders by providing a more complete picture of the impact.

Economic impact analysis:

Accounting for the full economic contributions

An economic impact analysis complements the CBA by enabling finance leaders to measure economic benefits, such as jobs created and tax revenue generated. Reporting economic contributions is important in part because there can be a perceived trade-off between meeting ESG goals and company financial performance, according to the Organization for Economic Cooperation and Development.[3] EIAs help companies determine how an ESG strategy contributes to a community's economic well-being and the perceived social return on investment.

The framework of the World Economic Forum (WEF) for ESG reporting—a widely used set of guidelines seeking common global standards—includes "net economic contribution" as a key ESG metric.[4] However, WEF focuses only on direct economic value from business operations, such as sales of its products and services. An EIA helps companies go beyond the WEF criteria by looking at the broader economic effects.

EIA draws on several economic insights to look beyond direct effects:

Multipliers

A company's spending on goods and services as well as payroll is later re-spent by suppliers and employees, cycling through the economy.

Indirect impacts

When company A buys goods or services from company B, company B can increase its own spending. Then, that spending benefits the suppliers who do business with company B.

Induced impacts

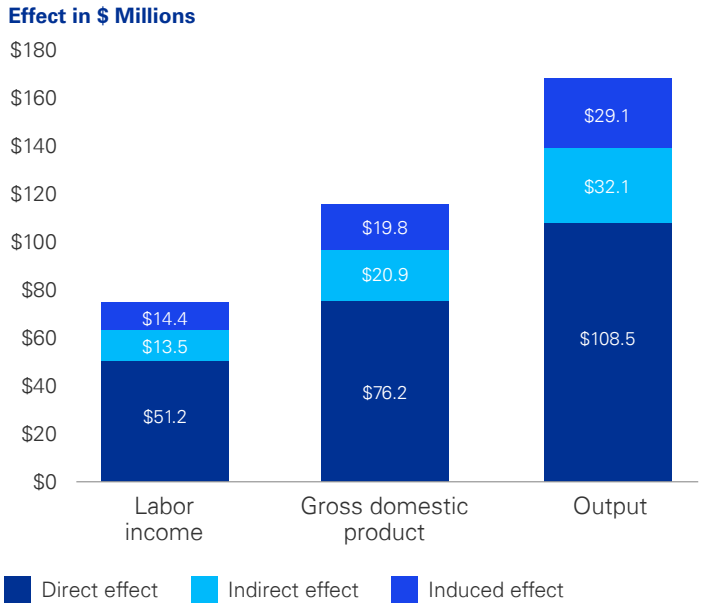
With more hiring by companies, consumers can spend more, in turn benefiting companies.

An ESG strategy can contribute to a virtuous cycle. For example, a company buys electric vehicles, which increases the revenue of an electric battery supplier. The battery supplier, in turn, buys more raw materials and hires more workers. Those workers then spend more in the local economy. Exhibit 2 shows how indirect and induced effects can add incremental benefits beyond direct effects.

[3] Source: Boffo, R., and R. Patalano, "ESG Investing: Practices, Progress and Challenges", OECD, 2020

[4] Source: KPMG, Reporting Your ESG Story

Exhibit 2. Measuring the effects of ESG investments



Some ESG efforts can have exceptionally high multiplier effects. For example, solar energy is relatively labor-intensive (on a megawatt-per-hour basis) compared to other energy sources.[5] The solar industry now employs twice as many people as coal due in part to the need for a large number of installers and other personnel.[6]

In addition to the total economic impact, EIA can assess many other custom metrics, such as the effect on government tax receipts, social equity (e.g., employment of different racial and ethnic groups), and the environment (e.g., carbon emissions).

An EIA can be valuable to measure the economic contributions of your ESG strategy, including:

- Determining the impact of a planned investment, such as the opening of a new plant or facility.
- Assessing the impact of tax incentives, job creation or infrastructure grants, and other incentives to inform stakeholders and regulators.
- Determining the effects of a specific legislation or regulation.
- Enhancing a company's reputation from increased visibility of their total economic contribution.
- Providing regulators and other stakeholders with a complete picture of a company's tax contribution, including the ripple effects through the economy.

[5] Source: Brad Plumer, "There are now twice as many solar jobs as coal jobs in the US," Vox.com, Feb. 7, 2017

[6] Source: "Lazard's Levelized Cost of Energy Analysis – Version 14," Lazard.com, Oct. 2020

Transition to EVs: The ESG calculus

Many companies are contemplating the conversion of their delivery fleets to electric vehicles (EVs) as part of their ESG strategy. For example, package delivery firm UPS recently ordered 10,000 delivery trucks from a U.K. electric vehicle manufacturer at a cost estimated at around $400 million.

To calculate the benefits of this kind of transition, the first step is to prepare a cost-benefit analysis. For the internal company CBA analysis, the cost side is the purchase price of the vehicles and the cost to operate and maintain them.

On the benefits side, fuel savings is a big contributor. This would be found by deducting the cost of electricity to charge the vans compared with the conventional fuel costs of the legacy trucks. Another big savings would come from vehicle maintenance, which tends to be lower in electric vehicles because of fewer moving parts. Additional potential benefit would be the tax break companies receive for purchasing non-polluting vehicles. There is currently a $7,500 credit for each vehicle acquired, and President Joe Biden has proposed raising that amount to $12,500.[7] There also may be incentives available from state governments and utilities.

The more difficult calculus is figuring the benefits to society from making the transition to emission-free vehicles. According to the Environmental Protection Agency, for every $1 spent to reduce emissions in transportation, the public gets a $9 benefit from improved public health, the environment, productivity, and consumer savings.[8] Other statistics about societal benefits from lower emissions of CO_2 and sulfur dioxide pollution are available from the U.S. Department of Transportation and the Intergovernmental Panel on Climate Change. One caveat: the U.S. Department of Energy reports that benefits to society will vary greatly by region depending on how electricity is generated: whether by low-emission sources like solar or renewables or by more polluting coal-fired power plants.[9]

A more difficult benefit to assess is determining the reputation and brand boost that a company enjoys from taking action on climate change, which is intangible and harder to assign a dollar value to. One way to assign a dollar value to the reputation and brand boost is the willingness to pay by investors demanding action on climate change.

Lastly, the company will perform an economic impact analysis of the proposed vehicle purchase. This would include the jobs created as a result of the change. In the UPS example, the actual manufacturing would take place overseas, but thousands of jobs would be created in the U.S. installing and maintaining the electric chargers for the delivery vans and providing maintenance. An impact analysis of this ESG strategy is never negative, because it merely tallies jobs created, but it provides a useful guide to a company about how to tell the story of its proposed ESG project.

[7] Source: Sean Szymkowski, "EV tax credit boost to $12,500 hangs in the balance," CNET.com, Oct. 5, 2021

[8] Source: "Healthier Americans," Environmental Protection Agency, Nov. 24, 2020

[9] Source: "Electric Vehicle Benefits and Considerations," Department of Energy, Alternative Fuels Data Center

Using CBA and EIA

CBA and EIA are powerful tools for ESG program leaders and CFOs. These tools can help companies make informed decisions about ESG initiatives and validate results. This analysis can inform ESG strategies that maximize return on investment while also helping the company communicate a positive ESG story. To use these tools effectively, it is important to:

Set targets for ESG initiatives

Identify ESG objectives most relevant to your business and key decisions needed to fulfill those objectives

Determine accountability

Establish clear ownership for who drives the measurement

Compare alternatives

Use CBA/EIA to conduct a systematic review of the costs and benefits of each ESG investment relative to other alternatives

Communicate

Identify the stakeholders—internal and external—most relevant to the ESG strategy and understand their goals/priorities. Communicate before and after key ESG decisions to set expectations and report outcomes

Refine

Use results from CBAs/EIAs to continually refine your ESG strategy and learn from mistakes

How KPMG can help

Our approach has been designed to help your organization make confident decisions about ESG initiatives. KPMG has extensive experience in economic analysis, ESG and sector knowledge, as well as proprietary data and analytics technologies. Economists in the KPMG Economic and Valuation Services (EVS) practice provide private and public sector clients with the experience and technical capabilities to develop defensible CBAs and EIAs. Our professionals have years of pragmatic CBA and EIA experience to offer insights to help with your ESG decisions.

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Dr. Erdem is an economist who specializes in modeling, program evaluation, policy analysis, and data analytics. He has led many projects at KPMG for federal and state agencies as well as commercial clients, and delivered solutions that include reporting tools and dashboards to support decision-making. Prior to KPMG, he worked as an antitrust economist and prepared expert reports on mergers and acquisitions, monopolization disputes, market power and concentration issues, and cartels. He has worked closely with clients, including leading law firms, Fortune 500 companies, and government agencies on topics, including ESG programs. Dr. Erdem has published his work in peer-reviewed journals and has presented at numerous national conferences. He has testified in U.S. federal courts as an expert witness.

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Pierre Vilain is an economist who applies microeconomics, urban and transportation economics and econometrics to a wide array of advisory services. Dr. Vilain has over 30 years' experience providing advice on transit, rail and toll road economics, including forecasting demand, revenues and cost inflation. He has advised numerous clients on fare policy analysis, including the institution of distance-based or time-of-day fare structures where he has quantified the impacts on ridership, revenues and emissions of different fare strategies. Dr. Vilain has advised on major transit development initiatives that have been implemented in New York, Boston, Puerto Rico and Seattle. For toll road and parking assets he has advised owners and investors on revenue and demand projections, including providing investment-grade forecasts in the context of public-private partnerships. His experience in issues relating to mobility and congestion are reflected in a wide body of published papers and presentations at professional conferences, and Dr. Vilain was appointed to an advisory board reviewing the FHWA vehicle-miles traveled forecasts in 2020. His advisory practice also includes applying decision support and cost-benefit analysis, with applications including evaluation of economic development programs and policies, and the valuation of environmental costs and benefits. He teaches a graduate-level course in cost-benefit analysis at Columbia University as an Adjunct Professor, and has been an invited lecturer at the New York University Stern School of Business.

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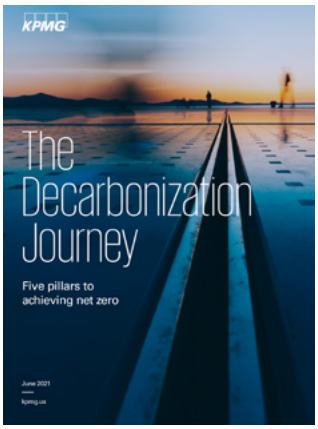
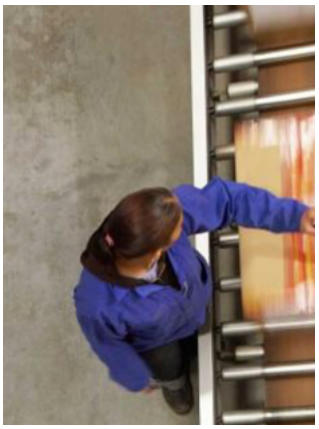


The decarbonization journey



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