



Building a better
working world

Defining, measuring
and effectively
communicating
sustainability practices
and progress in the
life sciences industry

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Pamela Spence
EY Global Health Sciences and
Wellness Industry Leader



Tim Gordon
EY Global Health Sciences and
Wellness Assurance FAAS Leader



Barend Van Bergen
EY Global Long-term Value
Methodology Leader

Today, individuals demand greater responsibility from the organizations they work for, buy from and invest in. The COVID-19 pandemic has underscored this shift, shedding new light on the consequences associated with long-standing health and economic disparities.

Even as many nations address their COVID-19 infections, the market volatility associated with the pandemic continues. At this time, the most resilient life sciences organizations are the ones that proactively identify how to participate in today's changing health ecosystem.

We believe that organizations that put sustainability at the heart of their business strategy will be better prepared to respond to the volatility triggered by unpredictable future challenges. That's because they will be best positioned to demonstrate and measure value in ways that matter not just to shareholders but to stakeholders.

As part of our purpose to build a better working world, we have used these sustainability principles to define specific action items for our member firms, expanding on our work with The Embankment Project for Inclusive Capitalism (EPIC) and the World Economic Forum International Business Council (WEF-IBC).

Our efforts make us uniquely suited to help organizations define and activate their own purpose, as well as articulate their ambition for how they intend to implement and measure sustainable value creation.







Executive summary

In health care, there is a growing need to embed the perspectives of diverse stakeholders, including payers (both public and private), providers (health systems and physicians) and individual patients in the business agenda. One growing area of interest for these stakeholders is sustainability.

As Larry Fink, CEO of BlackRock wrote in his 2020 annual letter to CEOs, “Over the past few years, more and more of our clients have focused on the impact of sustainability on their portfolios. This shift has been driven by an increased understanding of how sustainability-related factors can affect economic growth, asset values, and financial markets as a whole.”¹

Unfortunately, consensus on which factors should be measured in life sciences is lacking. This report is the first step in sparking dialog on the topic.

Key highlights:

- ▶ **The identification of eight sector-specific metrics:** after a review of metrics from 12 different standards setters, including the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB), we identified eight sector-specific metrics that biopharma companies should consider using to measure and accelerate their sustainability agendas.
- ▶ **The creation of a benchmarking framework:** these eight metrics form the basis for a preliminary model that allows cross-company comparisons with regard to sustainability. Companies can use the scores on individual metrics as a guide to identifying areas of leadership or opportunities for improvement.
- ▶ **Correlation with financial performance:** using 10-year average multiples, we calculated the financial performance of the companies in our data set and mapped the findings to the companies’ sustainable value scores. While more should be done to establish a causal link between sustainability and long-term corporate performance, our findings suggest that companies must do a better job of communicating their sustainability initiatives so that investors give them credit for these efforts.

It is important to note that the eight metrics featured in this analysis represent a subset of possible measurements that could be used to assess sustainability. In choosing them, we prioritized metrics where data was not only readily available but reported in standardized ways.

As a result, these metrics should not be viewed as a definitive list of best metrics, but as a starting point for developing an outside in perspective of life sciences companies’ sustainability performance. Given the data limitations associated with how companies currently report their sustainability initiatives, we expect our model will evolve. As life sciences companies do a better job of consistently reporting sustainability data, a wider set of metrics can be used to compare company responses.

There is a window of opportunity for life sciences companies to work with stakeholders across the health ecosystem to identify and capture impact data to better showcase how their medicines and services create long-term value creation for all.

Stakeholder capitalism: the case for change

The definition of success in business has expanded to mean more than higher profits or better returns. There's a growing recognition that quarterly earnings no longer accurately reflect a company's entire value. Indeed, while those balance sheets may have captured more than 80% of a company's value in 1975, today's balance sheets reflects at most 50% of that corporate value. (See Figure 1.)

Beyond margin and top-line growth, investors evaluate life sciences companies based on intangibles such as how their solutions contribute to overall societal health.

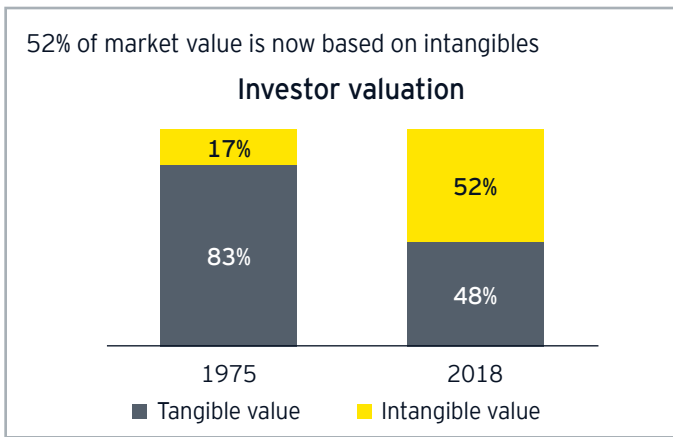
Other wide-scale changes across health care also affect the life sciences value proposition. A new competitive landscape has emerged, the result of demographic shifts, mounting cost pressures, and emerging scientific and technological breakthroughs. Not only are new competitors vying for market share, but certain stakeholders, especially consumers, have greater decision-making power.

These changes mean life science organizations must better articulate their value outside the innovative medicines they develop. In today's world, talent, data, trust and innovation also contribute to financial success. And, as the biopharma industry continues to wrap services around products, intangible assets such as intellectual property, human capital, organizational culture, corporate governance and public trust are growing in importance. We need new reporting frameworks to measure these intangibles and drive long-term results.



Figure 1. Why stakeholder capitalism matters

Changing value drivers

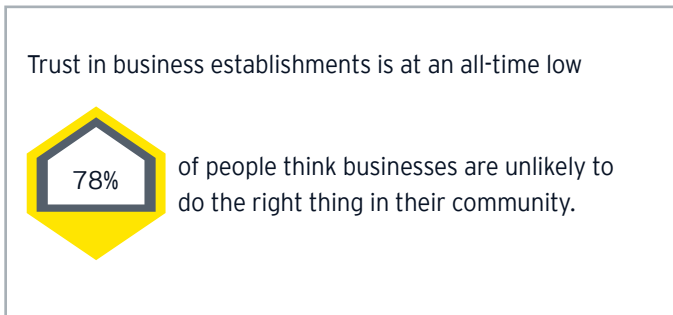


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If we don't start preparing to articulate why we need to exist ... then we are not doing our job.

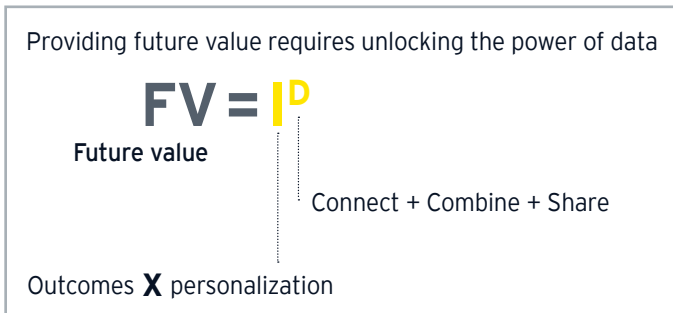
Group Head of Global Health and Corporate Responsibility, Novartis

A persistent trust gap



Trust in the pharmaceutical sector increased from 59% of respondents in 2019 to 73% in spring 2020, according to the Edelman Trust Barometer. But the report found this higher level of trust is not likely to remain without sustained commitment not just to human health but also to the greater good.

Data is the differentiator



“

Future value will come from personalized products and services that connect, combine and share a variety of data to improve health.

EY Life Sciences 4.0

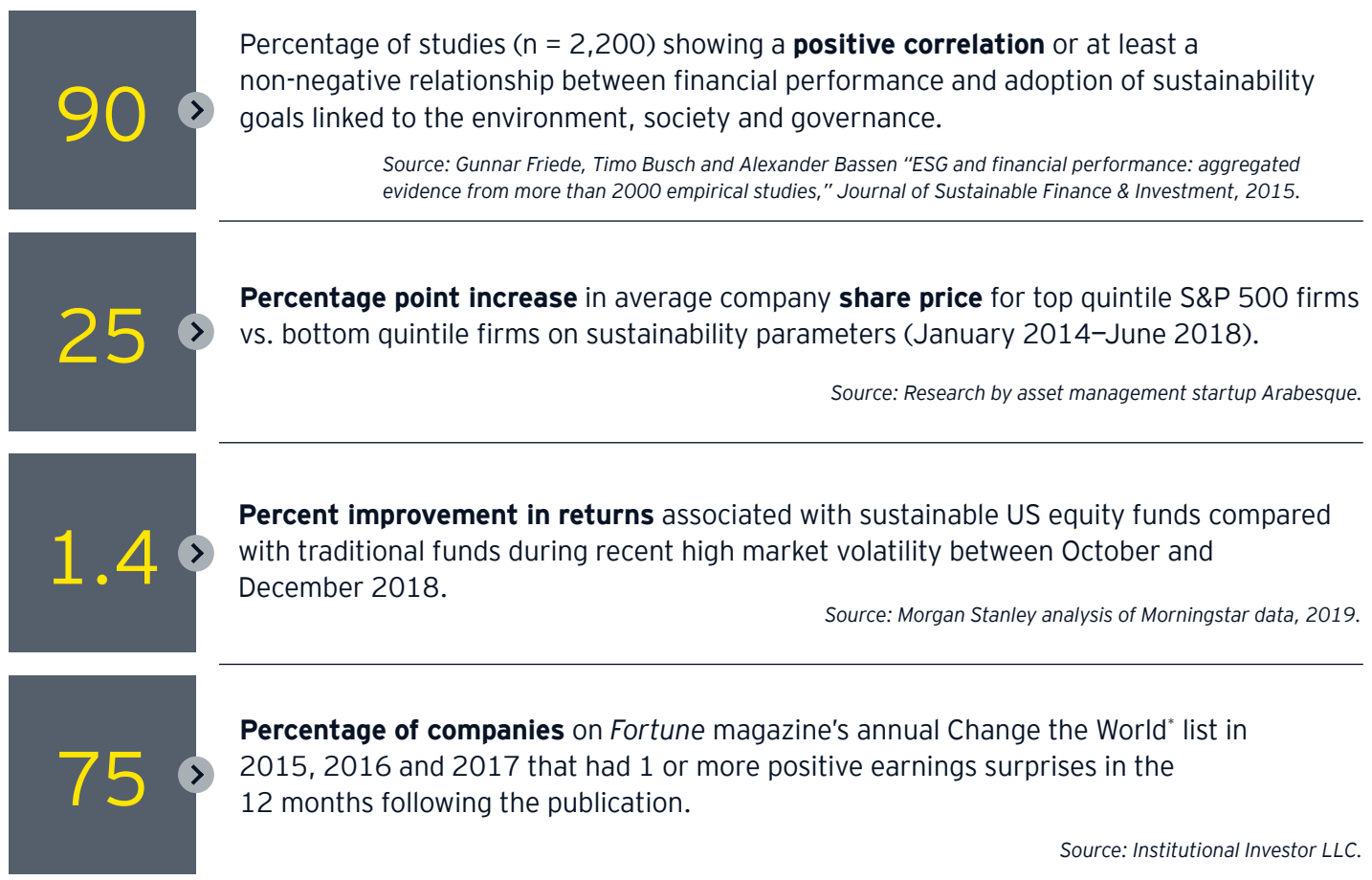
Sustainability can be a source of value

Many of these intangible assets directly link to social and environmental initiatives that are part of a company's sustainability agenda. There is an increasing body of evidence demonstrating a link between sustainability and corporate performance; however, the exact linkage still needs to be understood.

Because of this, a growing percentage of investors are choosing to finance companies that prioritize sustainability goals. More than US\$450 billion in global green and sustainability-linked loan volume was announced in 2019, up 78% from 2018, setting a new record.^{2,3}

Indeed, research suggests that sustainability is a sign of resilience and is associated with a better risk-adjusted performance across a range of metrics. (See Figure 2 for association between sustainability and better financial performance.)

Figure 2. Key indicators demonstrating the association between sustainability and financial performance



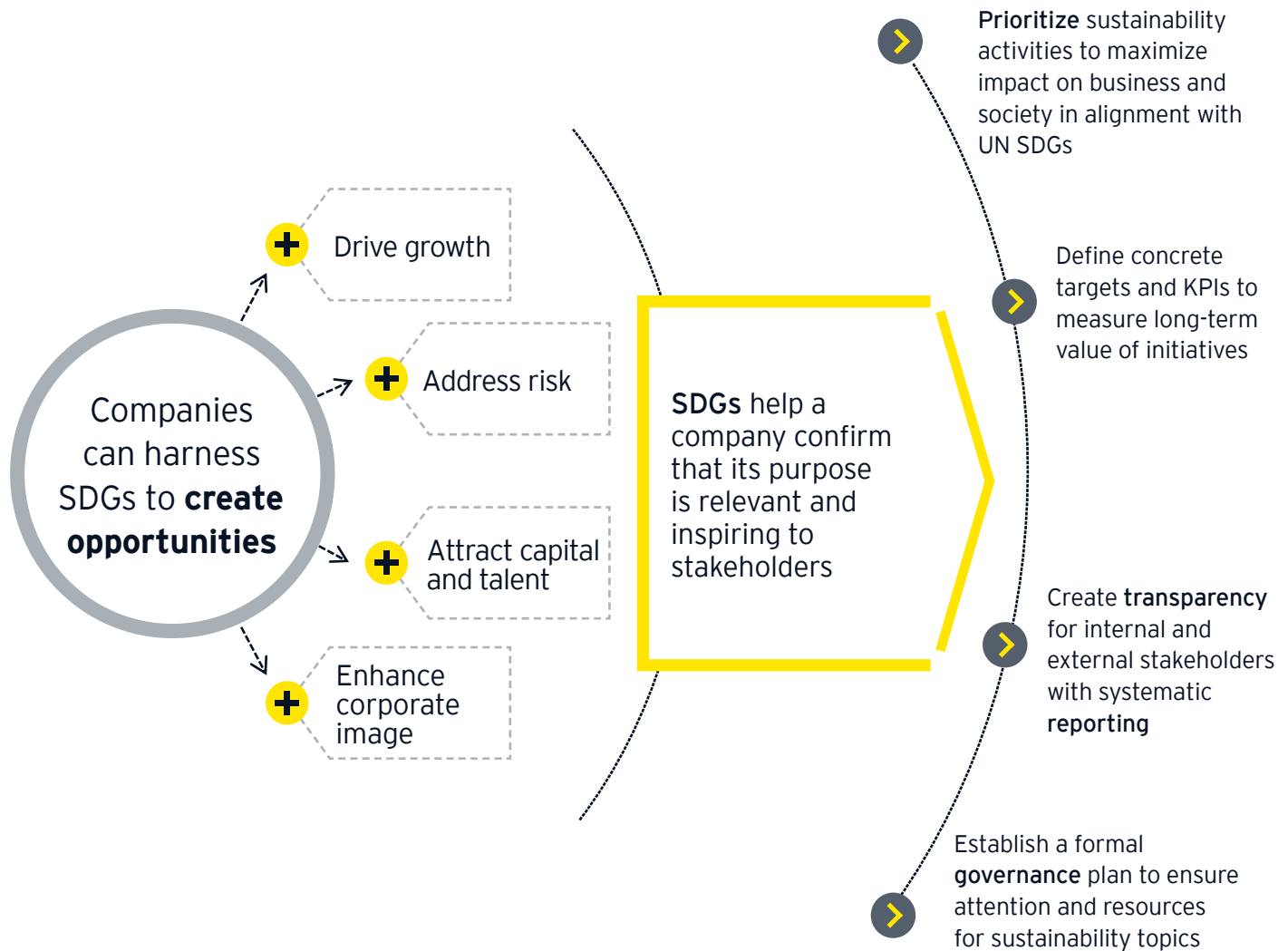
* Fortune publishes the Change the World List to celebrate companies and leaders that embrace corporate purpose and recognize how it can add value to business and society.

Benefits of integrating sustainable development goals with the business plan

The United Nations (UN) Sustainable Development Goals (SDGs) provide a blueprint for companies and governments to achieve a better and more sustainable future for all by 2030. These SDGs aim to address global challenges, including poverty, inequality, climate change, environmental degradation, peace and justice.

There are currently 17 UN SDGs.⁴ By focusing on the most relevant SDGs, companies can prioritize the right activities and define and measure the right metrics to achieve their sustainability priorities. (See Figure 3.) Most importantly, such an approach creates transparency and provides accountability that will drive long-term value for stakeholders.

Figure 3. An approach to help companies align SDGs with business priorities



Defining and internalizing sustainability in life sciences

For the life sciences industry, one key component of sustainability is the linkage between disease impact and the role innovative medical products and services play in reducing this burden, which has economic, societal and individual costs. As such, confirming access to medicines, vaccines and consumer health products, regardless of geography, is critical. Access is becoming even more important in the current health care environment, where the COVID-19 pandemic has demonstrated how systemic racial and ethnic disparities in care result in worse outcomes.

As policymakers and payers prioritize access, these stakeholders also face challenges meeting the needs of aging societies, responding to the demands of increasingly health-conscious populations and affording high-priced, transformative or curative therapies.

For life sciences companies, the growing focus on access means there is a strong need to track and analyze efforts to support sustainable health care systems. Multiple sustainability parameters align with these needs. For instance, metrics such as the “number of patients benefited” align well with the goal of improving health

outcomes at the population level. Similarly, other sustainability metrics demonstrate how companies meet the needs of the health care ecosystem, including disability-adjusted life years (DALYs) saved or quality-adjusted life years (QALYs) improved through medicines.

One challenge life sciences companies face is deciding which of the numerous sustainability frameworks to use to measure value. Because most frameworks aren't specifically designed with life sciences companies in mind, at best these models only approximate the value biopharma companies create. This value disconnect is one of the many reasons it is difficult to draw a direct line from a company's sustainability efforts to its financial performance.

Separately, the wide variety of metrics in use is also problematic. Our analysis suggests that even within a single organization, various parts of a business may use different metrics to track sustainability efforts. That variability makes it difficult to assess the impact of sustainability programs at an enterprise level, let alone compare different companies.



Benchmarking leading biopharma companies on sustainable value creation

To have the greatest impact, life sciences companies must consistently use metrics that are not only relevant based on their products and services, but that also meet the criteria of sustainability experts. With this in mind, we started our search for sector-specific metrics by scanning the industry-agnostic categories developed by the World Economic Forum International Business Council (IBC). Designed to help IBC members align their mainstream reporting, these metrics describe value in human, consumer, societal and financial terms. Further review suggested that the foundational sector-specific metrics for biopharma companies reflect social, environmental and economic value.

In sustainable value creation, **social value** is the most important parameter given life sciences companies' goal to produce and deliver socially responsible products. Being socially responsible means scoring high on three critical dimensions:

1. **Responsible innovation:** New biopharma products continue to address unmet disease needs and cure common and neglected health conditions. For instance, the development of novel treatments for hepatitis C has made it possible for some countries to eradicate the disease. In oncology, novel immunotherapies have become standard treatments for many cancers, reducing mortality rates by 23% in the US since 1991.⁵ Similarly, the rapid growth in personalized medicines creates new opportunities to tackle rare diseases.
2. **Access and affordability:** Biopharmaceutical companies improve public health by making certain that life-saving medicines are widely available and reasonably priced. Besides simple product donations, companies adopt different strategies to enable access. Many innovator companies, for instance, choose not to enforce their patents in least-developed countries, enabling the earlier use of lower cost versions.

Companies also develop tiered pricing strategies based on a country's gross domestic product (GDP) or gross national income (GNI) per capita or the paying capacity of consumers in different socioeconomic segments. Of the 1,036 products listed in the Access to Medicines (AtM) 2018 Index that are developed by top 20 biopharmas, 43% currently employ equitable pricing strategies.⁶

3. **Trust and quality:** Preservation of a medicine's safety and efficacy is also paramount. Companies address this by maintaining quality throughout the supply chain, rigorously testing the safety and efficacy of products under development and complying with ethical promotional practices.

When assessing sustainability, **environmental value** should also be considered because of the direct health effects associated with climate change. Important parameters include:

1. **Greenhouse gas emissions:** The life sciences sector produces 55% more greenhouse gas (GHG) emissions than the automotive manufacturing sector, according to a 2019 study published in the *Journal of Cleaner Production*.⁷
Rising levels of GHGs lead to global warming, and as a result, cause catastrophic weather events. These climate anomalies reduce air quality, as well as protein and micronutrients in crops, which contribute to food insecurity and undernutrition in low- and middle-income countries.⁸ According to a research paper published in 2018, one metric tonne (MT) of GHG released into the environment adds 0.0015 DALYs because of the undernutrition, disease, heat stress and coastal flooding caused by these emissions.⁹
2. **Water usage:** The World Health Organization (WHO) predicts that half of the world's population will be living in water-stressed areas by 2025.¹⁰ A poor water supply increases the risk that affected populations suffer more disease, including infectious and chronic diarrhea.¹¹ At the same time, limited availability of purified water increases the cost of operations for biopharmaceutical plants located in water-stressed areas.
3. **Manufacturing waste:** Discharge of industrial effluents during the manufacturing process is a very serious issue that the life sciences industry must manage. Toxins from industrial waste are a major cause of immune suppression, reproductive failure and acute poisoning.¹²

Economic value is the final theme linked to sustainable value and is historically viewed from a cost perspective.

In the last two decades, however, it's now recognized that health is not just a consequence of, but also a cause of, economic well-being. Healthy workers are more productive; healthy children have higher school attendance; healthy populations save more, control fertility better and are therefore more likely to escape from depending on their youth for growing the economy. The costs of the COVID-19 pandemic have further underscored the fact that without safeguarding human health we cannot safeguard economic health either.

Life sciences companies improve the health of the global population through their medicines, and as a result, they add gross economic value to every province, state, country and region in the world. Two metrics that are already widely used by health economists – DALYs and QALYs – could be used more systematically to measure the productivity gains that result from the improved health of a citizenry.

As noted, it has been difficult to demonstrate that improved sustainability also improves life sciences companies' financial performance. That is because many companies use industry-agnostic metrics, rather than industry-specific measurements, to capture their sustainability performance.

To identify sector-specific metrics, we prioritized metrics with a clear linkage to health care where data were readily available. Using these criteria, we have identified eight environmental and social indicators that represent an outside in view of sustainability in the life sciences. The eight measures describe progress in the areas of responsible innovation, access and affordability, trust and quality, and the health impact of climate change. (See Figures 4 and 5.)

Figure 4. Detailed process for selection of biopharma specific metrics

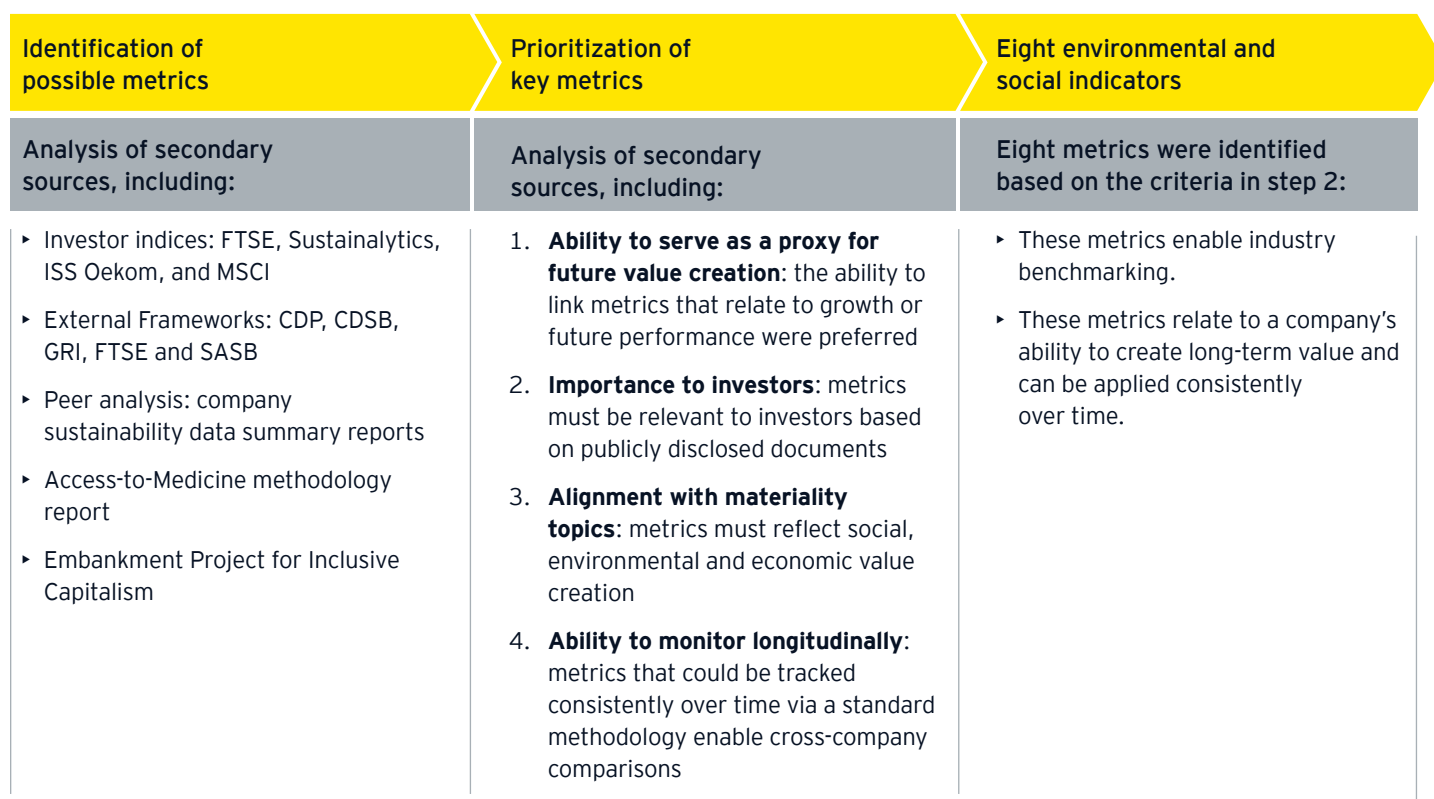


Figure 5. Eight biopharma specific metrics of sustainable value

Value category	Dimension	LS specific sample metrics	Link with sustainability	Value driver
Social value	Responsible innovation	Number of Fast-Track Designations* won in the US (2012-19)	Indicates pipeline potential of a company to address unmet medical needs	Expands addressable market and increases market share
		Number of curative therapies* on the market and in late-stage trials	Demonstrates commitment to treating not just symptoms but underlying disease cause	
		Number of rare diseases* for which the company has medicines on the US market and in late-stage pipeline	Demonstrates commitment to serious diseases with small patient base	
	Access and affordability	Score on Access to Medicines 2018 Index*	Demonstrates progress in enabling the needy have access to medicines	
Trust and quality	Trust and quality	Number (since 2010) of Official Actions Indicated (OAI)* and Voluntary Actions Indicated (VAI)* issued by the US FDA as part of quality assurance inspections	Indicates company's focus on consistency in quality across manufacturing and supply chain	Mitigates risk and reduces legal expenses
		Number of warning letters* received from US FDA for drug promotion non-compliance since 2010	Demonstrates company's patient-centric approach in drug promotions	
Environmental value	Health impact of climate change	Number of serious cases reported for company's top five drugs on US FDA Adverse Event Reporting System (FAERS)* until December 2019	Demonstrates commitment to transparency about potential side-effects of products enabling physicians and consumers to make informed decisions	Reduces cost of capital
		DALYs* resulting from GHG released (MT CO2e, Scope 1 and 2*) per US\$ billion in revenue generated in 2018	Shows the impact of a company's contribution to climate change on the health of the global population	

* Definitions and descriptions are covered in the glossary.

Development of sustainable value scores

To identify the eight metrics used in this report, EY researchers surveyed more than a dozen secondary sources, including investor indices, external sustainability frameworks, company reports and the Embankment Project for Inclusive Capitalism.

EY researchers prioritized relevant metrics based on their alignment with materiality topics that reflect social, environmental and economic value creation and the ability to monitor those metrics over time. Metrics that could be tracked consistently over time via a standard methodology were emphasized because they enable cross-company comparisons.

The eight metrics used in this analysis reflect three different dimensions of social value and a measure of environmental value. To avoid bias, each of these four dimensions was weighted equally in our model, contributing 25% to a company's overall sustainability score. Since multiple metrics were used to measure both responsible innovation and trust and quality, indicators within those dimensions were also given equal weighting. As such, the 25% weighting in those two categories was further subdivided based on the number of parameters measured.

Publicly available data were used to analyze companies' performance across the eight metrics. For each metric, companies were segmented into quintiles that were given a one to five ranking, with one being the lowest quintile and five the highest. This numerical value was then multiplied by the weighting to generate a weighted score for each metric. Summing the weighted scores resulted in a total sustainability score.

Because the same set of metrics was used across the biopharmas in this analysis, results within the cohort are comparable. In addition to providing a total sustainability score, weighted scores on individual performance metrics can be used to identify areas of leadership or opportunities for improvement.

Building a life sciences-specific model to measure sustainable value

Using these eight metrics, we constructed a model to calculate sustainable value for leading global biopharmaceutical companies (as measured by revenue). Three companies, Amgen, Biogen and Teva, were excluded from the model because access and affordability data were lacking given their absence in the AtM 2018 Index

When building a life sciences specific model, our intent was not to create yet another sustainability framework. Instead, we wanted to understand how different companies compare when it comes to their sustainability initiatives. But to make meaningful comparisons we needed verified metrics that a majority of companies currently measure and publicly disclose in a standardized way.

As part of our assessment we mapped how these eight metrics align to today's most commonly cited sustainability frameworks and investor indices. For instance, our metrics describing responsible innovation correspond to the World Economic Forum International Business Council's prosperity themes, while our measurement of the health

impact of climate change aligns to the organization's planet pillar. Four of the eight metrics we prioritize correspond to SASB metrics measuring access, drug safety or ethical marketing. (See Figure 6.)

The eight metrics in this report aren't necessarily perfect measures of sustainability. We considered several relevant metrics that ultimately were not included in our analysis because companies used different reporting practices that made cross-company comparisons challenging.

For instance, easily standardized metrics linked to environmental issues such as water usage and waste disposal could not be identified. In addition, we weren't able to account for economic value at this time, because a majority of biopharmas do not consistently report QALYs and DALYs measures.

As such, we believe this model is a starting point for a more robust discussion of how companies can measure and communicate their value to stakeholders, including financial investors.

How the eight metrics map to key themes in published sustainability frameworks

Commonly used sustainability frameworks have been developed by independent think tanks and ratings agencies including the World Economic Forum, the Sustainability Accounting Standards Board, the Global Reporting Initiative, the Climate Disclosure Standards Board and MSCI, among others.

Each organization defines value according to different environmental, social and government parameters that ultimately align to the United Nation's Sustainable Development Goals (SDGs). This table maps the metrics used in this report to the corresponding themes of standard setters or investor indices.

The naming and numerical conventions associated with metrics in different frameworks have been preserved as much as possible. For instance, the Score on Access to Medicines 2018 index used in this report measures affordability and access to medicines. Those same value drivers are captured in the WEF framework as the economic contributions to the prosperity pillar.

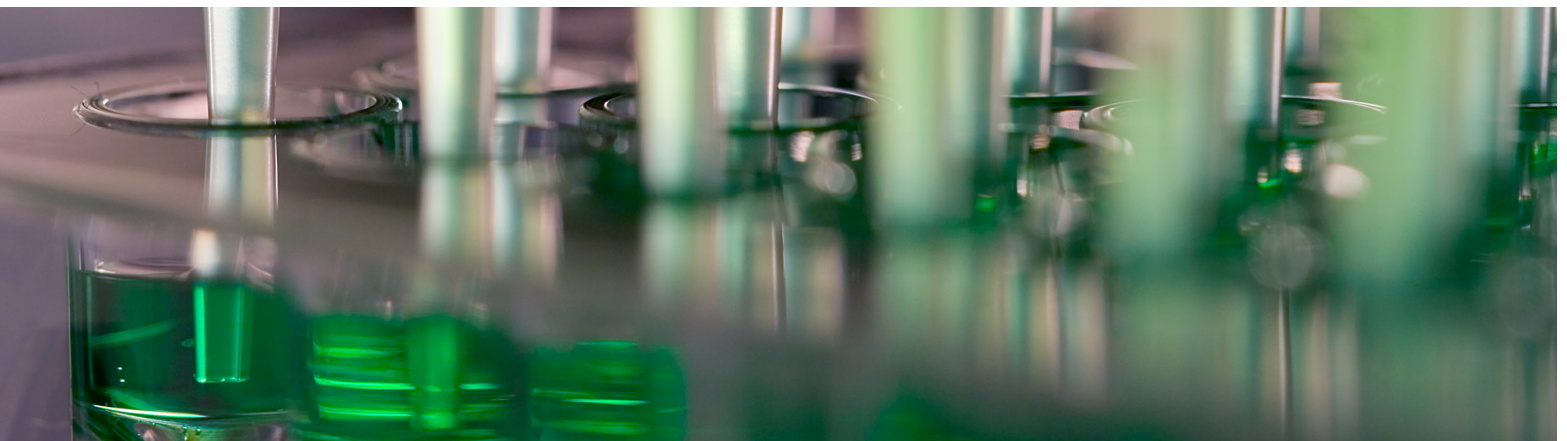


Figure 6. A comparison of the EY proposed metrics with other published frameworks

EY proposed life sciences-specific metrics	Published frameworks						Investor indices						
	UN SDGs	WEF-IBC	EPIC	SASB	GRI	CDSB	MSCI	DJSI	ISS Oekom	Sustainalytics	FTSE		
Number of Fast-Track Designations awarded in the US (2012-19)	<ul style="list-style-type: none"> SDG 3: good health and well-being SDG 9: industry, innovation and infrastructure SDG 17: Partnerships for goals 	<ul style="list-style-type: none"> Prosperity pillar: innovation of better products and services 	<ul style="list-style-type: none"> Consumer value: innovation 	—	—	—	—	<ul style="list-style-type: none"> Innovation management and outcome contribution 	<ul style="list-style-type: none"> Society and product responsibility 	<ul style="list-style-type: none"> Social pillar: Preparedness 	<ul style="list-style-type: none"> Customer responsibility 		
Number of curative therapies on the market and in late-stage trials				—	—	—	—					—	—
Number of rare diseases for which the company has medicines on the US market and in late-stage pipeline				—	—	—	—					—	—
Score on Access to Medicines 2018 Index	<ul style="list-style-type: none"> SDG 1: No poverty SDG 3: Good health and wellbeing 	<ul style="list-style-type: none"> Prosperity pillar: economic contribution 	<ul style="list-style-type: none"> Societal value: purposeful community engagement 	<ul style="list-style-type: none"> Access to medicines 	—	—	<ul style="list-style-type: none"> Social pillar: access to health care 	<ul style="list-style-type: none"> Addressing cost burden Strategy to improve access to drugs or product 	<ul style="list-style-type: none"> Social aspects along the value chain 	<ul style="list-style-type: none"> Social aspects along the value chain 	<ul style="list-style-type: none"> Customer responsibility 		
Number of OAI and VAI issued since 2010 by the US FDA as part of quality assurance inspections	<ul style="list-style-type: none"> SDG 3: Good health and wellbeing 	<ul style="list-style-type: none"> Prosperity pillar: innovation of better products and services 	<ul style="list-style-type: none"> Consumer value: product durability and reliability 	<ul style="list-style-type: none"> Drug safety (metric code HC-BP-250a.5) 	<ul style="list-style-type: none"> GRI 416: customer health and safety 	—	<ul style="list-style-type: none"> Social pillar-product liability Product safety and quality Health and demographic risk 	<ul style="list-style-type: none"> Product quality and recall management 	<ul style="list-style-type: none"> Society and product responsibility 	<ul style="list-style-type: none"> Social pillar: Preparedness Disclosure 	—		
Number of warning letters issued since 2010 by the US FDA for drug promotion noncompliance				<ul style="list-style-type: none"> Ethical marketing 	<ul style="list-style-type: none"> GRI 417: marketing and labeling 	—	<ul style="list-style-type: none"> Social pillar-product liability Health and demographic risk 						
Number of serious cases reported to the US FDA Adverse Event Reporting System (FAERS) through December 2019 for the company's top five drugs				<ul style="list-style-type: none"> Drug safety (metric code HC-BP-250a.2) 	<ul style="list-style-type: none"> GRI 416: customer health and safety 	—	<ul style="list-style-type: none"> Social pillar-product liability Product safety and quality Health and demographic risk 						
Disability adjusted life years resulting from greenhouse gas emissions released per US\$ billion in revenue generated in 2018	<ul style="list-style-type: none"> SDG 7: Affordable and clean energy SDG 12: sustainable consumption and production 	<ul style="list-style-type: none"> Planet pillar: climate change 	<ul style="list-style-type: none"> Environmental and societal value: carbon intensity 	—	<ul style="list-style-type: none"> GRI 305: emissions 	<ul style="list-style-type: none"> 2019 CDSB standards 	<ul style="list-style-type: none"> Environmental pillar: Carbon emissions and climate change vulnerability 	—	<ul style="list-style-type: none"> Environmental management 	—	—		

Source: EY, United Nations Sustainable Development Group, World Economic Forum, the Embankment Project for Inclusive Capitalism, Sustainability Accounting Standards Board, Global Reporting Initiative, Climate Disclosure Standards Boards, MSCI, Dow Jones Sustainability Index, ISS Oekom Research, Sustainalytics and FTSE Russell.

Comparing leading biopharmaceutical companies on sustainable value

Our analysis reveals that the majority of the top scoring companies outperformed competitors on the dimensions of responsible innovation, access and affordability, and health impact due to climate change. (See Figures 7 and 8.)

Johnson & Johnson, for instance, has the highest sustainable value score. The company's strong performance is primarily attributed to the following factors:

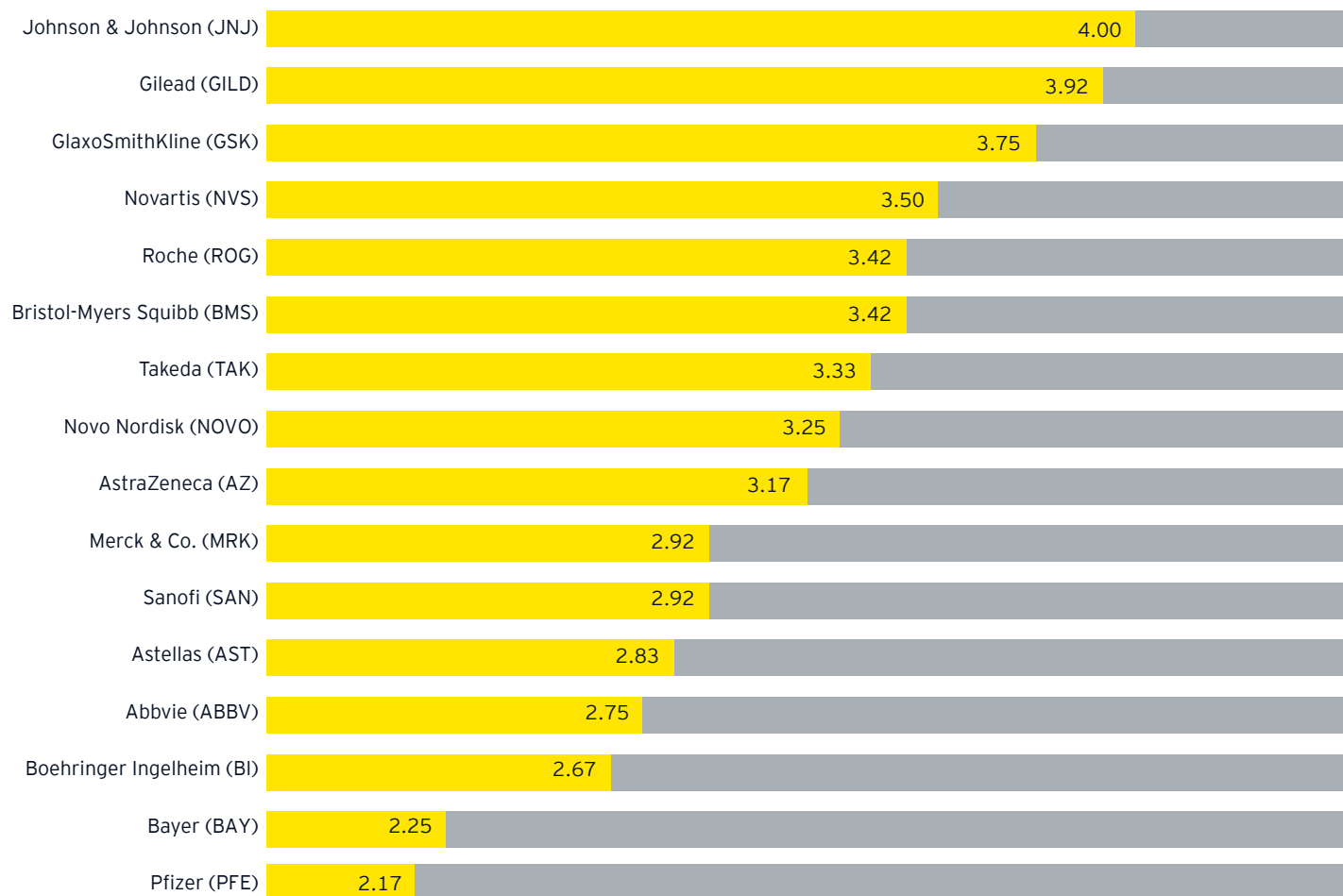
1. Strong performance on responsible innovation with high scores in two of three metrics:
 - a. Highest number of FDA fast-track designations (nine) won between 2012 and 2019
 - b. High number of curative therapies (seven) in market or in late-stage pipeline
2. High score (3.05) on the AtM 2018 Index, representing strong focus on access and affordability
3. One of the lowest health impacts due to climate change – 18.3 DALYs caused by GHGs released per US\$ billion revenue generated by the company in 2018

For the compliance metrics for trust and quality, our analysis reveals that there was not a major difference in the weighted scores for the lowest and highest performers. Nearly 60% of the companies in our analysis have a better than average range of performance on these metrics. This suggests that many leading life sciences companies are already adhering to regulatory compliance requirements tied to quality assurance, ethical promotion and safety.

In general, even the companies that achieved the highest sustainability scores have room for improvement (i.e., metrics where they scored lower). For some companies, there is a clear need to prioritize the development of curative products that meet evolving unmet medical needs. In other cases, companies need to rethink their commercial strategies to ensure products are available to the most vulnerable populations.



Figure 7. Sustainable value score (weighted average score): selected companies



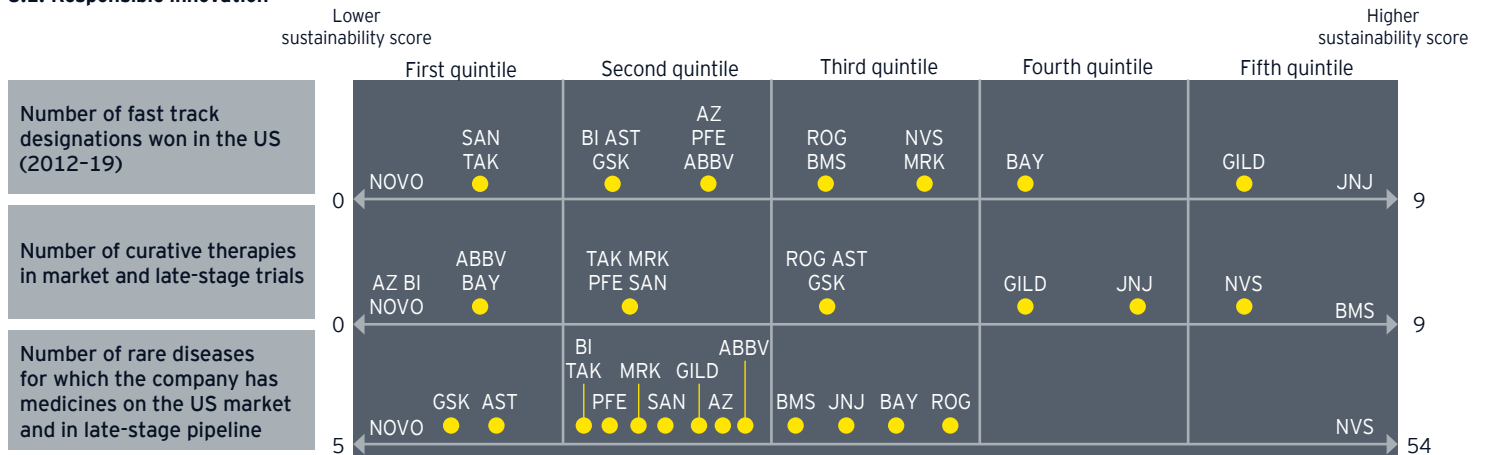
Source: EY

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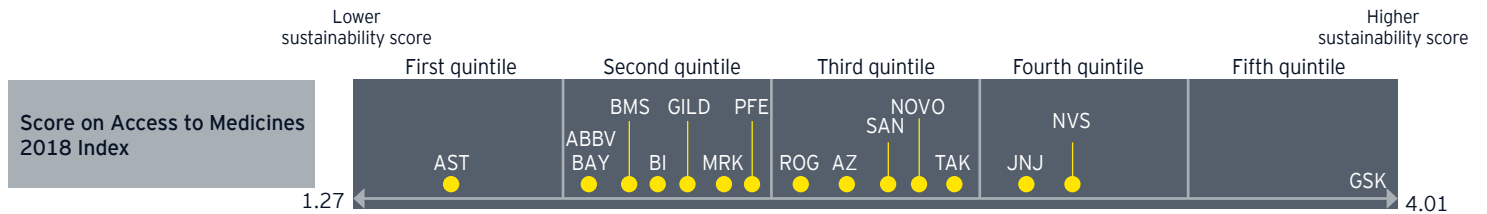
We prioritized metrics with a clear linkage to health care where data were readily available. Using these criteria, we have identified eight environmental and social indicators that represent an outside in view of sustainability in the life sciences.

Figure 8. Detailed benchmarking of biopharma companies

8.1. Responsible innovation

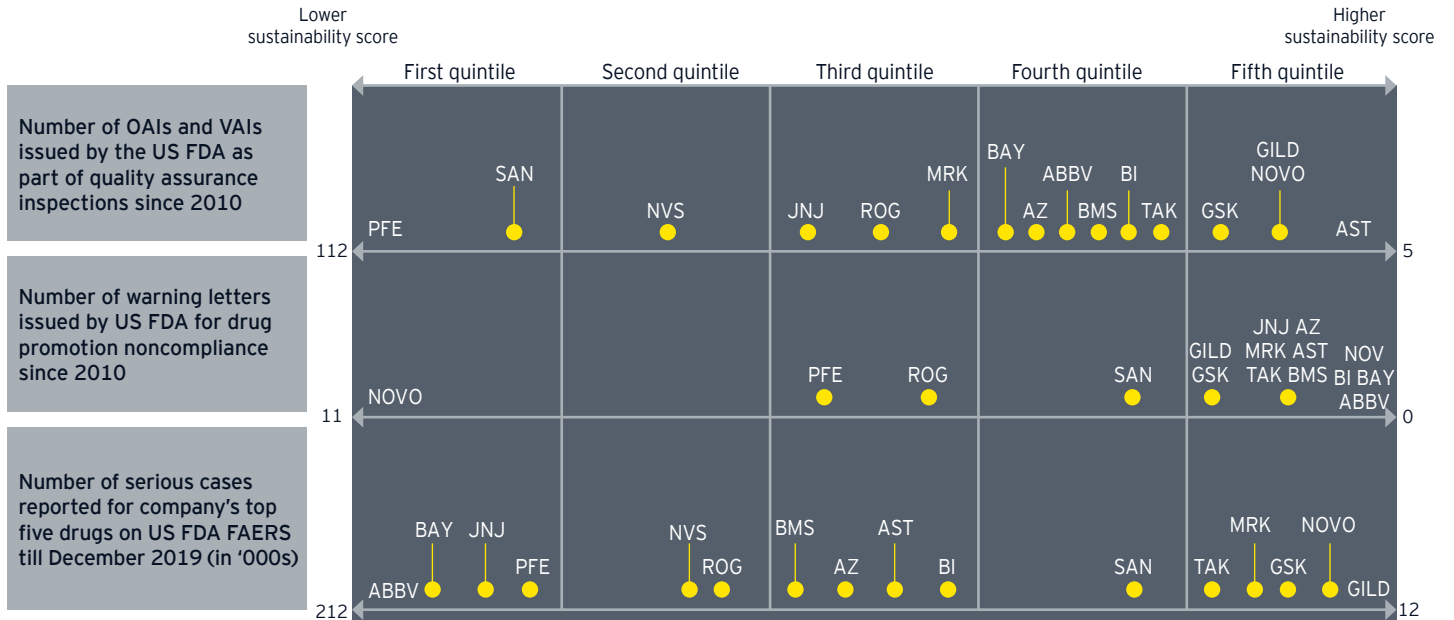


8.2. Access and affordability

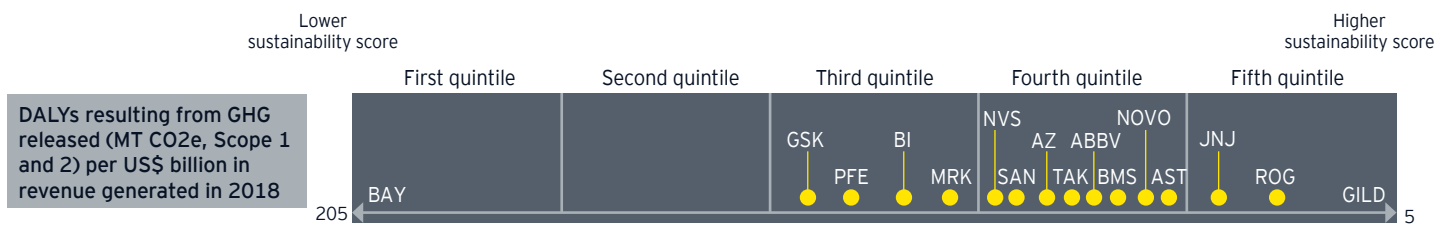


Disclaimer: Data for Bristol-Myers Squibb, AbbVie and Takeda on the metrics “number of curative therapies in market and late-stage trials” and “number of rare diseases in focus in the US through marketed products and late-stage pipeline” may also include figures from their recently acquired entities, i.e., Celgene, Allergan and Shire, respectively.

8.3. Trust and quality



8.4. Health impact of climate change



Source: EY. To assess the health impact of climate change, market-based – not location-based – measures of greenhouse gas emissions were considered. They correspond to Scope 1 and 2 GHG metrics but not Scope 3 GHG emissions as described in the glossary. The metric "DALYs caused by GHGs released per US\$ billion of revenue in 2018" has been calculated by multiplying the metric tonnes carbon-dioxide equivalent (MT CO2e) of GHG released per US\$ billion of revenue with the factor 0.0015 DALYs (DALYs caused by 1MT CO2e released).



Establishing correlation between sustainable value and financial value

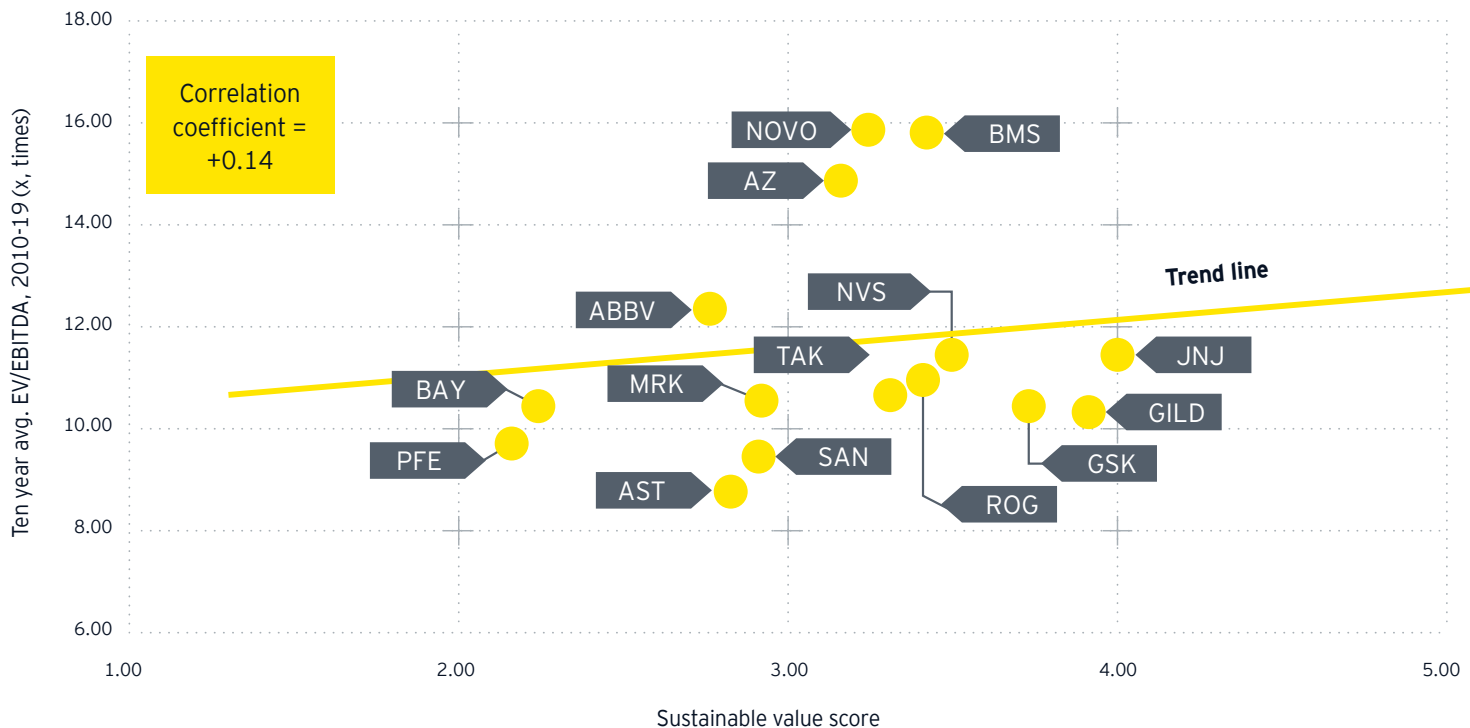
We also wanted to understand the relationship between sustainable value creation and financial performance. To test the linkage between the two parameters, we mapped the sustainable value scores of the biopharma companies to their corresponding 10-year average valuation multiples. (This valuation multiple is also known as the EV/EBITDA multiple, where EV is the enterprise value of the company and EBITDA is its earnings before interest, taxes, depreciation and amortization.) (See Figure 9.)

We chose the EV/EBITDA multiple as an indicator of financial value because it reflects potential cash flow generation and the level of risk associated with strategic business decisions. Investors and asset managers also use the metric to make investment decisions. We chose a 10-year average EV/EBITDA multiple to avoid the possibility that one-off events in a given year could disproportionately influence the results.

Our analysis reveals a weak positive correlation between sustainable value and financial value, indicating that only a few companies have a sustainable value performance that matches their financial value.

Indeed, only one of the top six performers for sustainability also ranked in the top six for its ten-year average valuation (2010-19). That suggests that one priority area of focus should be to improve how sustainability is communicated so that investors reward companies for their efforts.

Figure 9. Correlation between sustainable value score and financial performance



Note: BI does not have an EV/EBITDA value because it is not a publicly listed entity.

How leading life sciences companies are embracing sustainability

A closer examination of the companies with the best sustainability scores suggests these organizations placed greater emphasis on the following activities: innovating responsibly, integrating environmental sustainability in the design of their medicines/solutions, and confirming that stakeholders have access to these products at an affordable price. Here’s a deep dive into the innovative practices adopted by selected biopharma companies.

GSK, Johnson & Johnson, Merck KGaA, Novartis and Takeda have started to create patient access strategies when drugs are still in mid-stage clinical development, building registries, patent waivers or non-exclusive voluntary licensing into their commercial activities. These approaches illustrate ways to prioritize access and affordability into the business strategy in ways that build social value.

Measuring the health outcomes tied to medicines has been a contentious issue. Novartis is moving a step ahead of its peers by developing a new modeling tool, the Novartis Health Footprint, to capture the impact of its medicines on patient-relevant outcomes. Novartis plans to share the impact information with insurance companies, local governments and decision-makers in health care

systems,¹³ which will continue to help the company position itself with key health stakeholders.

To improve access and affordability in developing economies, other biopharma companies are adopting and scaling inclusive business models and experimenting with novel funding models. Pfizer, for instance, issued a 10-year sustainability bond worth US\$1.2b in 2020 to manage the environmental impact and support patient access to its medicines and vaccines,¹⁴ while Johnson & Johnson and Takeda recently announced grants for its World Without Disease Call-for-Proposal.¹⁵

Learning from other sectors, life sciences companies have started to embrace life cycle assessment tools and more predictive approaches to evaluate both the environmental and economic sustainability of emerging and future biochemicals. For instance, Novo Nordisk, via its Center for Biosustainability, now analyzes the technical and economic performance of its processes, products and services.¹⁶ AstraZeneca’s “eco-pharmacovigilance” system, meanwhile, helps minimize environmental impact through real-time environmental risk assessments.¹⁷

Figure 10. Examples of leading sustainability practices

Value category	What are the leading practices?
Social value	<ul style="list-style-type: none"> ▶ Investment in science-led innovation (curative therapies, rare diseases, personalized medicines) ▶ Use of metrics that accelerate emphasis on innovation and economic impact as measured by DALYs ▶ Preparation for patient access when products are in early development ▶ Creation of dedicated incubation centers to foster innovation culture ▶ Expansion of value-based contracts tied to better health outcomes ▶ Use of next-generation technology (e.g., blockchain, AI) to limit counterfeiting ▶ Creation of multi-stakeholder collaborations to create inclusive business models
Environmental value	<ul style="list-style-type: none"> ▶ Disclosure of monetized value (in US\$) of emissions and the impact on society ▶ Adoption of life cycle assessment tools to understand environmental impact and drive good product stewardship ▶ Implementation of carbon neutrality strategy using energy attribute credits and verified emissions reductions
Economic value	<ul style="list-style-type: none"> ▶ Care plans/access initiatives that represent the full patient journey and are designed to improve health outcomes ▶ Report the increase in population-QALYs due to use of medicine in a given region or geographic area

The search for meaningful sector-specific metrics

Good metrics that quantify impact and performance can secure senior management support and help investors and other stakeholder groups understand how sustainability initiatives support the business strategy while maximizing social impact.

Though we restricted our analysis to eight metrics based on data availability and the ability to standardize, life sciences companies can use additional metrics to demonstrate their commitment to sustainability. Our analysis suggests that as companies advance their sustainability practices, they might want to consider incorporating other metrics that are of material interest to investors. (See Figure 11.)

Companies have already started to measure and report input and output metrics, including the number of patients benefited, doses administered, and the number of new molecular entities launched. However, they could also prioritize impact measures linked to the product pricing or health outcomes achieved.

The time is ripe for biopharma companies to adopt metrics that showcase the sustainable value of a company. For instance, companies can report health outcome metrics such as QALY or DALY through their medicines to articulate economic value creation.

Companies should also consider Novartis' disclosure strategy. Novartis is currently the only company that quantifies the QALYs gained in the population due to its medicines and articulates the measurement in terms of economic value.

When assessing performance on environmental value creation, life sciences companies need to measure their direct and indirect carbon footprint per unit of revenue, profit or number of employees. Similarly, they need to measure their water usage and waste footprint per unit of revenue, profit or number of employees. These are easy-to-understand metrics that can be compared across companies.

Figure 11. Additional sector-specific metrics for consideration

Social value:

- ▶ Number of products with equitable pricing policies, including percentage of products using health economic evaluations
- ▶ Percentage of total revenues from products where evaluations demonstrate a significant cost-benefit relative to standard medical therapies
- ▶ Average year-on-year percent change in list price and significant individual list price changes
- ▶ Number of innovative products gaining marketing authorization endorsed by well-known health technology assessment organizations
- ▶ Number of non-exclusive voluntary licenses/products, including those with pre-manufacturing quality checks
- ▶ Number of settlements of Abbreviated New Drug Application litigation involving provisions to delay bringing an authorized generic product to market
- ▶ Number of regulatory actions related to manufacturing practices or counterfeit products, including recalls (e.g., number of recalls and number of units recalled)
- ▶ Expenses, fines or lawsuits related to withholding clinical data in the last financial year
- ▶ Number of clinical trial inspections resulting in a voluntary or official action
- ▶ Number of non-exclusive voluntary licenses with quality checks

Environmental value:

- ▶ Revenue generated per unit of energy consumed
- ▶ Revenue generated per unit of water consumed
- ▶ Revenue per unit of waste generated

Beyond sustainability metrics to building a culture of sustainability

The role of business in addressing sustainability challenges has never been more important. Businesses that create lasting future value will be those that identify how to harness disruptive

innovations to address real human needs – placing sustainability at the heart of business strategy. (See Figure 12.)

Figure 12. Embedding sustainability in the business today and tomorrow





Glossary

Gross domestic product: It is the total monetary or market value of all the finished goods and services produced within a country's borders in a specific time period.

Gross national income: It is a nation's gross domestic product plus the income it receives from overseas sources.

Fast-track designation: designation for expedited review of investigational drugs, which treat a serious or life-threatening condition and fill an unmet medical need

Curative therapy: a time-limited treatment that removes the symptoms of a disease through permanent (or semi-permanent) correction of the underlying condition; examples include gene and cell therapies.

Rare disease: a condition that affects a small proportion of the population in a country, e.g. fewer than 200,000 people in the US

Scope 1 emissions: direct emissions occurring from sources that are owned or controlled by the company, e.g., emissions from combustion in owned or controlled boilers

Scope 2 emissions: emissions from the generation of purchased electricity consumed by a company

Scope 3 emissions: all indirect emissions (not included in scope 1 and scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions" after Scope 2 emissions and before Official action indicated.

Official action indicated (OAI) means regulatory and/or administrative actions will be recommended.

Voluntary action indicated (VAI) means objectionable conditions or practices were found but the agency is not prepared to take or recommend any administrative or regulatory action.

Disability-Adjusted Life Year: One DALY can be thought of as one lost year of "healthy" life, according to the WHO.

Quality-Adjusted Life Year: A year in perfect health is considered equal to one QALY.



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Contacts



Pamela Spence

EY Global Health Sciences and Wellness Industry Leader
pspence2@uk.ey.com
+44 207 951 3523



Matthew Nelson

EY Global Climate Change and Sustainability Services (CCaSS) Leader
matthew.nelson@au.ey.com
+61 3 9288 8121



Tim Gordon

EY Global Health Sciences and Wellness Assurance FAAS Leader
tim.gordon@ey.com
+1 212 773 0938



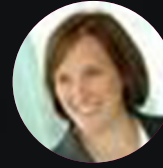
Rebecca Farmer

EY Global PMO for Long-Term Value
rfarmer@uk.ey.com
+44 1189 281119



Barend van Bergen

Partner, Assurance, FAAS, CCaSS Reporting
bvanbergen@uk.ey.com
+44 207 951 1009



Melissa Myatt

Partner, Assurance, Forensics, Investigations & Compliance
mmyatt@uk.ey.com
+41 58 286 8240



Chandan Dargan

Global FAAS HS&W
chandan.dargan@ey.com
+1 609 664 6456



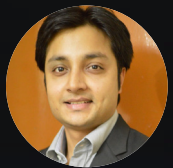
Roderick Groenewoud

Manager, Assurance, FAAS, CCaSS
roderick.groenewoud@uk.ey.com
+44 20 7980 0117



Ellen Licking

EY Global Health Sciences and Wellness Lead Analyst
ellen.licking@ey.com
+1 408 283 5022



Anirban Saha

EY Global Health Sciences and Wellness Analyst
anirban.saha@gds.ey.com



Ginni Wadwa

EY Global Health Sciences and Wellness Analyst
ginni.wadwa@gds.ey.com

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