

# UNIQUE PERSPECTIVES

We look at our work each day with a fresh perspective and enthusiasm for delivering the best to our clients, associates, and communities.



# INNOVATING FOR BETTER SOLUTIONS

Delivering financial services in new ways helps us serve our clients better.

To foster a creative environment and help transform our approach to global technology, we have opened the Client Experience and Delivery Transformation Lab and the New York Technology Development Center.

Jordan Vinarub, who heads up the New York Technology Development Center, explains why these pioneering programs set T. Rowe Price apart.

## **Q: How is T. Rowe Price using technology as a differentiator for the firm?**

**A:** We are building new capabilities in cloud, microservices, big data, and machine learning in order to scale our investment process. We are providing more visibility, insights, and intelligent augmentation for our investment professionals.

## **Q: How do technological advances help support investment decisions?**

**A:** Data science and machine learning enable the use of automation and predictive analytics over large datasets to generate insights. Our investors get the benefit of additional inputs and data to their existing process to help them make the most informed decisions for our clients.

## **Q: What are the priorities in the technology space for T. Rowe Price?**

**A:** Our Integrated Strategic Plan is driving priorities for the technology team around building new technical capabilities (cloud, microservices, big data, machine learning), enabling our business partners to work in new ways, and ultimately providing new systems to help the firm run efficiently.

## **Q: What part of your job are you the most proud of?**

**A:** I'm most proud of being part of a global community of world-class technology professionals who are driven to make an impact both for our clients and the communities in which we live. I see this when we host CSR events like Youth Mentor Day and Hour of Code for the girls from Saint Barnabas High School in the Bronx. I also experience this when we help our business partners gain insights from the work we've done. It's a great feeling to see motivated people building a positive culture of learning and delivery.

Everything we do at the lab is focused on enhancing our clients' experiences. As we build capabilities by combining advancements in design, technology, and entrepreneurship, we take a holistic view to assess the impact of current and planned efforts on how clients engage with us.

– Rajesh Eshwar | Head of Client Experience & Delivery Transformation at T. Rowe Price

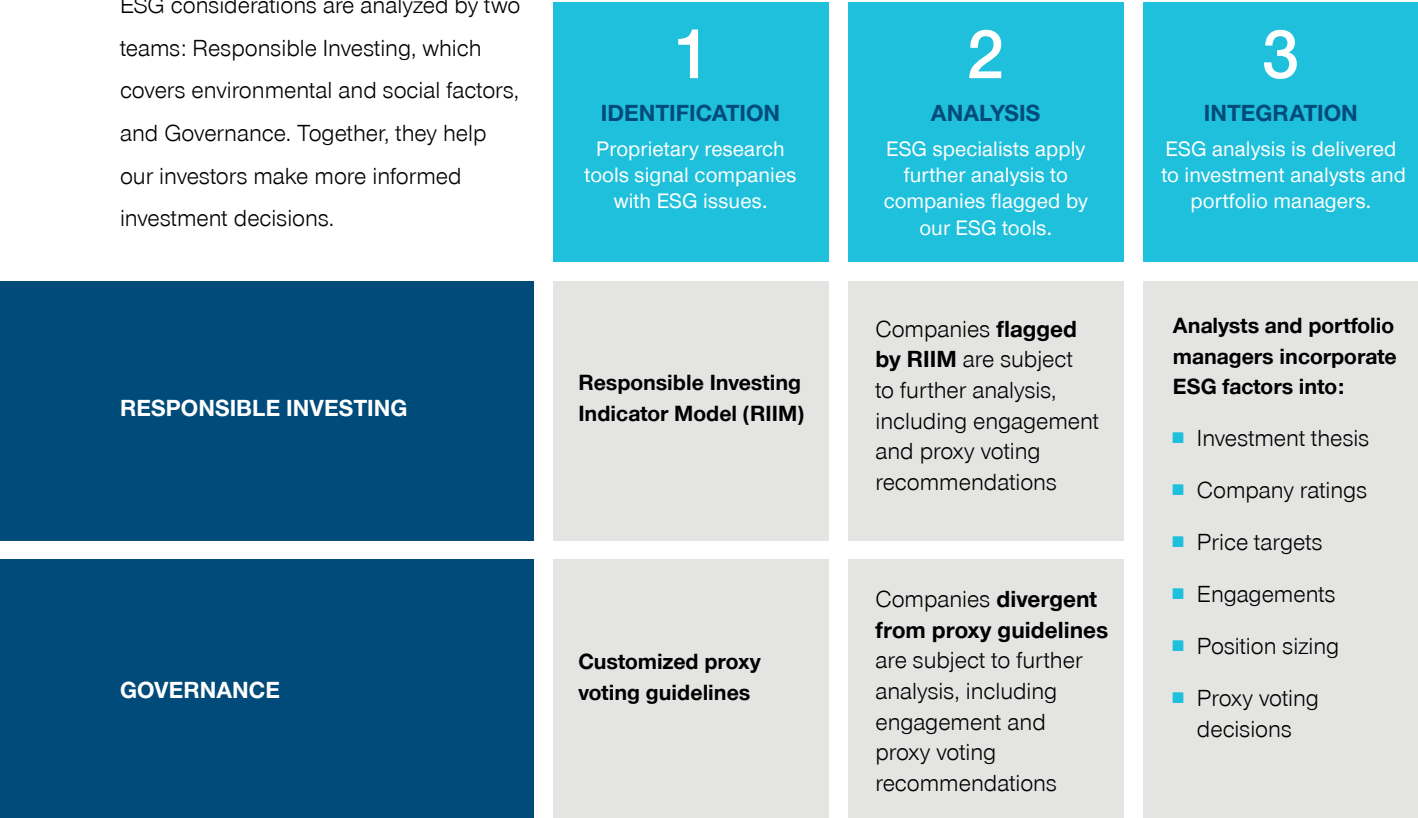




# SUSTAINABLE INVESTING

Environmental, social, and governance (ESG) factors are key considerations in our investment approach—we dig deep to understand the long-term sustainability of the companies in which we invest. Our in-house ESG teams help our investors identify, analyze, and integrate the ESG factors most likely to have a material impact on the long-term performance of an investment.

ESG considerations are analyzed by two teams: Responsible Investing, which covers environmental and social factors, and Governance. Together, they help our investors make more informed investment decisions.



Looking ahead, advocacy is the primary focus of our external governance function. In key markets around the world, we are concerned about a weakening of important shareholder rights and investor protections. To this end, we are collaborating with other investors to persuade stock exchanges and regulators that reasonable disclosure requirements and strong investor protection are essential ingredients for open, liquid, and resilient capital markets.



– Donna Anderson | Head of Corporate Governance

# THE RESPONSIBLE INVESTING INDICATOR MODEL (RIIM)

## EMBEDDING ESG CONSIDERATIONS IN OUR INVESTMENT DECISIONS.




We developed a proprietary model that systematically and proactively screens the responsible investing (RI) profile of an investment.

The Responsible Investing Indicator Model flags any elevated RI risk associated with an investment and identifies investments with positive RI characteristics, as well as manages RI factor exposures at the portfolio level.

The RIIM framework uses multiple datasets, covering approximately 12,000 corporate entities, making it scalable across our equity and fixed income credit franchises.

It can also be populated with our own fundamental analysis.

In the illustration of the RIIM model, we outline an overall risk profile of an investment and flag both elevated responsible investing risks (orange/red) and positive responsible investing characteristics (green).

<b>ENVIRONMENT</b> 	<b>OPERATIONS</b>	Supply chain (environment)
		Raw materials
		Energy and emissions
		Land use
		Water use
		Waste
		General operations
	<b>END PRODUCT</b>	Product sustainability
		Products and services environmental incidents
<b>SOCIAL</b> 	<b>HUMAN CAPITAL</b>	Supply chain (social)
		Employee safety and treatment
		Evidence of meritocracy
	<b>SOCIETY</b>	Society and community relations
	<b>END PRODUCT</b>	Product sustainability
		Product impact on human health and society
		Product quality and customer incidents
<b>ETHICS</b> 	Business ethics	
	Bribery and corruption	
	Lobbying and public policy	
	Accounting and taxation	
	Board and management conduct	
	ESG accountability	
<b>DATA INCIDENTS</b>	Data privacy incidents	

-  Not Material
-  No/Few Flags
-  Medium Flags
-  High Flags

 RI Risk Indicator

 Social

 Environment

 Ethics

# ESG INVESTING THEME

## The Water-Energy-Food Nexus as a signal for environmental reforms and business impact.

Water, energy, and food are three vital components of sustainable development. The interaction of these factors is commonly referred to as the Water-Energy-Food Nexus (WEF-Nexus). The lynchpin of the WEF-Nexus is water—as a finite resource, water scarcity has a direct impact on food supply. If a local WEF-Nexus spirals out of balance, lack of water shifts from being a global sustainability concept to a more local and immediate problem.

Today, nearly a quarter of the world's population lives in water-scarce regions. As the impact of climate change intensifies, more regions grapple with water scarcity and associated WEF-Nexus pressures. Key indicators of looming environmental reforms include:

- More frequent droughts and rising food prices
- Consistent overdrafts on river systems and aquifers
- Agricultural inefficiency—low yields and/or tilt to nonfood crops
- Impact of pollution on public health and quality of life
- Low unemployment—politicians can address ecological issues when there is less economic pressure

As the pull on this finite resource pushes more and more regions into water scarcity, we anticipate greater intervention from governments as they struggle to manage their water, energy, and food resources. In turn, this is likely to have a downstream effect for the energy, utility, and transportation sectors as well as other sectors that are indirectly exposed to the WEF-Nexus.

When we observe one WEF-Nexus component fall out of balance, we can analyze how it will affect the other WEF-Nexus components and the companies that operate within them. China offers an example of this. An overreliance on coal blended with relatively lax environmental standards has thrown China's WEF-Nexus out of balance and resulted in health hazards, water shortages, and threats to food supplies. In response, the Chinese government targeted 10 industries that overextended China's natural resource balance—with the goal of reducing waste and improving efficiencies.

Though it is still early on for an expected multi-decade economic restructuring, our team continually evaluates how companies are faring with wide-ranging industry reforms, as we believe insights into ESG factors will play an important role alongside financial analysis.

**Among the three components in the WEF-Nexus, water represents a valuable lead indicator of change—mismanagement of this vital resource typically proves to be a catalyst for swift regulatory intervention that can influence company behavior and, ultimately, performance.**

– Maria Elena Drew | Director of Research—Responsible Investing



# ESG INVESTING THEME

Understanding the Water-Energy-Food Nexus.<sup>1</sup>

## WATER

**70%**

of global water withdrawal is for agriculture

**20%**

of the world's aquifers are overexploited

**15%**

of global water withdrawal is for energy production

**55%**

projected global water demand growth by 2055

## FOOD

**20%**

Water demand for agriculture is forecast to grow by 20% by 2050 (without efficiency improvements)

**60%**

Population growth, rising incomes, and urbanization will require a 60% increase in food production by 2050 (without efficiency improvements)

**30%**

of global energy is for food production and its supply chain

## ENERGY

**90%**

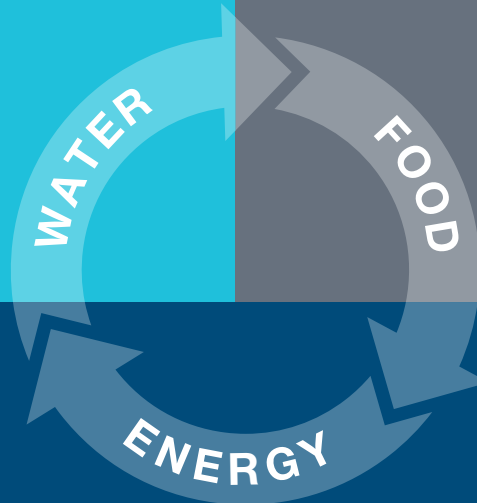
of global power generation comes from water-intensive sources

**1.2B**

Between 2000 and 2016, 1.2 billion people gained access to electricity (1.1 billion remain without access as of 2016)



Biofuels have driven the largest demand boost for agricultural products in decades



<sup>1</sup> Sources: Water and Energy (UN Water 2014), Food and Agriculture Organization of the United Nations, UNESCO World Energy Outlook (IEA 2017).



# ESG INVESTING THEME

## Sustainability pressures set to reshape plastics industry.

Global demand for plastics has increased twentyfold over the past 50 years, and the International Energy Agency predicts that demand will grow by an additional 45% by 2040, with nearly two-thirds of that growth coming from Asia.

The obsession with plastic is easy to understand—cheap, lightweight, and durable, the material is beneficial to society in a multitude of ways, including:

- Reducing food waste—by extending the freshness period
- Lowering vehicle emissions—by making cars lighter
- Increasing energy efficiency—through improved building insulation

Accordingly, we believe that the sustainability debate should center on how, not if, we use plastic and, most importantly, how we dispose of it.

Vast consumption of plastic is a major sustainability problem that the world must solve. Most plastics have a very short life span of less than one year, yet they can take up to an estimated 450 years to break down, creating a major environmental impact if not disposed of properly.

Globally, most plastics (40%–45%) end up in a landfill, while a significant portion (25%–30%) is land leakage or litter.

Only a small portion is incinerated (12%–14%) or recycled (10%–15%).<sup>1</sup> While comparatively less plastic may end up in the ocean, it has been suggested that by 2050 there could be more plastic in the ocean than fish.

Given the magnitude of the disposal problem, we believe the plastics industry will be fundamentally reshaped in four key areas:

1. Reducing usage
2. Increasing recycling
3. Increasing incineration (waste to energy)
4. Replacing plastic with alternatives and/or new biodegradable products

Many companies targeted as problem actors will likely be solutions providers, as packaging products are adopted to solve their end-of-life problems. We believe the key drivers of success among packaging companies will be product innovation and the ability to develop a circular business model.

**There is clearly a place for plastic in the global economy, and in several cases, there are no viable alternatives. However, as investors, we seek to identify areas where there is a sustainable alternative to single-use plastics—beverage packaging is one such area.**

– Dan Hirsch | U.S. Equity Analyst



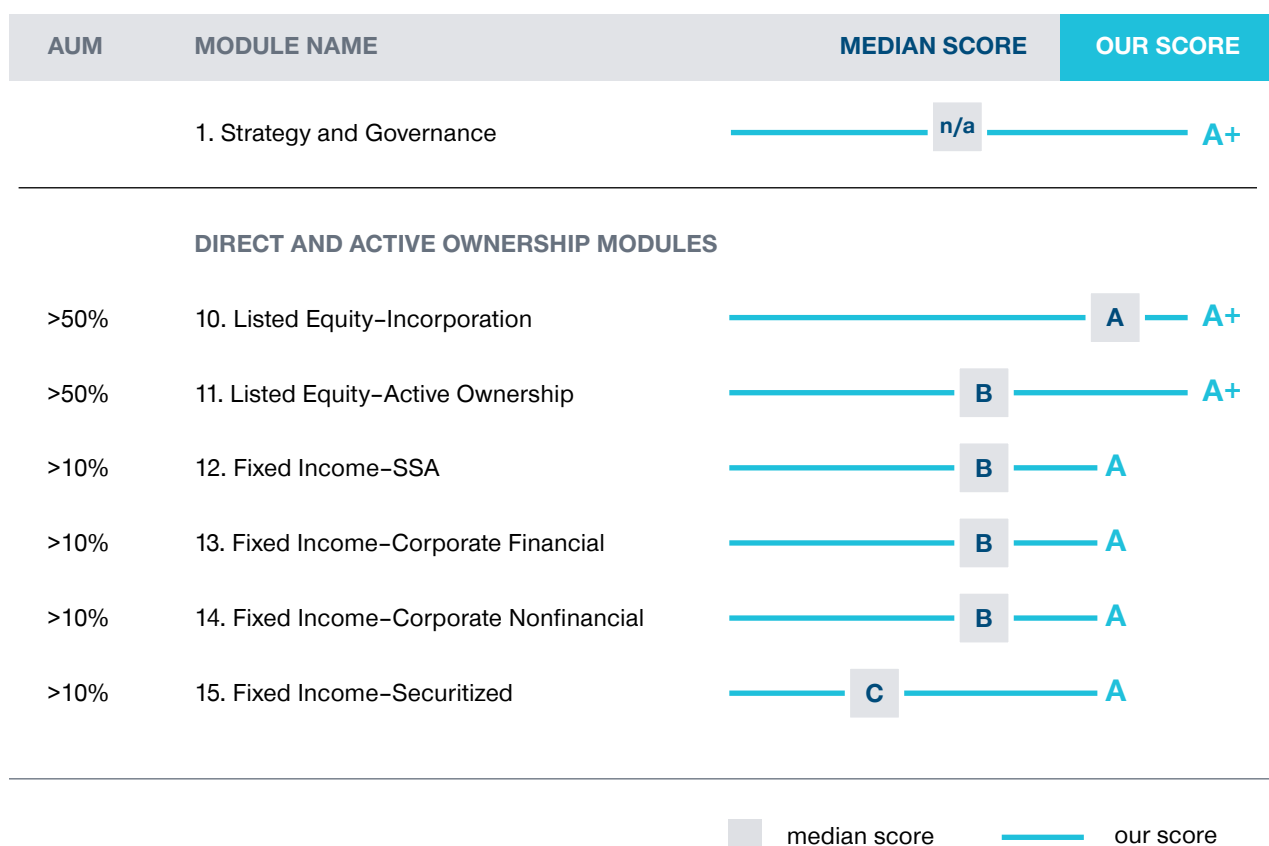
<sup>1</sup> Source: The New Plastics Economy, Ellen MacArthur Foundation (2018).

# PRINCIPLES FOR RESPONSIBLE INVESTMENT SCORECARD

T. Rowe Price became a signatory of the United Nations Principles for Responsible Investment (UN PRI) in August 2010. We support the PRI framework as an effective means of encouraging dialogue among investors and better disclosure from companies globally about important responsible investing issues.

Under the UN PRI's transparency requirements, all signatories complete an annual self-assessment. T. Rowe Price's most recent Transparency Report is available via the UN PRI data portal at [dataportal.unpri.org](https://dataportal.unpri.org).

The UN PRI Summary Scorecard below provides an overview of our aggregate score for each module assessed and the median score. These bands range from A= (top band) to E (lowest band). The UN PRI assessment scoring methodology is available at [unpri.org](https://unpri.org).





# INSPIRING CONFIDENCE BY GOING BEYOND THE NUMBERS



The T. Rowe Price strategic investing approach has guided our firm since 1937, and it continues to inspire confidence—by helping clients reach their long-term investment goals.

We go above and beyond to uncover the undiscovered. T. Rowe Price partnered with National Geographic's custom studio to show the similarities between our investors and National Geographic's explorers. Each digs deep to discover new potential in their respective fields, venturing into uncharted territories to acquire the kind of insight that can only come from hands-on experience.

## WHAT MAKES THE T. ROWE PRICE STRATEGIC INVESTING APPROACH SO DISTINCTIVE?

- We go beyond the numbers. More than 400 of our investment professionals are out in the field meeting directly with companies. That gives them firsthand independent analysis and on-site evaluations to provide better opportunities and the best value for our clients.
- Our skilled portfolio managers have deep experience—averaging 22 years in the industry and 17 years with T. Rowe Price.

- Our people think independently but act collaboratively. They assess when to move with the crowd and when to move against it; when to quickly take advantage of market fluctuations and when to hold tight.
- We carefully manage risk and seek to maximize value for our clients over longer-term time horizons.

### Ziad Bakri: Investing in breakthrough therapies

"Imagine that your disease is going to kill you in less than a year, but a company develops a way to genetically engineer your own blood and your own immune cells to actually recognize the cancer and attack it. Instead of poisoning the cancer cells with toxic chemicals that wreak havoc on the immune system, you tweak the patient's blood and let the body's natural immune defense take care of the rest.

After medical school in the UK, I worked as an emergency room doctor. What drew me to capital allocation in health sciences was the potential to help many people for years to come through investments that help fund medical innovation.

My team and I often choose to invest at the very early stages of human trials, and sometimes when it's just a concept. It's exciting to see innovations shift from concept to reality.

It's a priority of mine to go out into the field so I can see firsthand if this is something real. Making the right investment decision is important not only for our investors, but for mankind in general because today's treatment, which took years to develop, can have long-term future benefits for generations to come.

Investing lets me use everything I've learned as a doctor to help make a positive impact on the world. So that's why I go beyond the numbers."

Ziad Bakri is portfolio manager of the T. Rowe Price Health Sciences Equity Strategy.

