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Where do you see opportunities for powerful, effective investing today?

Mr. Wild: Despite entering an era of unparalleled resource pressure, resource efficiency is undoubtedly becoming an increasingly attractive investment theme. I believe that human ingenuity and innovation will enable the global economy to maximize our global resource productivity and that companies that pioneer innovative ways to use resources more efficiently—and facilitate the substitution of supply-constrained resources with intelligent alternatives—will gain long-term competitive advantage. The challenge is knowing who these game changing companies are and to invest in the resource efficiency solutions that deliver the best return, for investors and society as a whole.

Resource depletion requires large-scale changes in how businesses and markets operate. But a wide range of successful and creative solutions already exist.

- **Process innovation:** One of the benefits of a competitive marketplace is that businesses cannot afford to stand still. Though our overall consumption of resources continues to grow, we are becoming much more efficient in how we use them thanks to the application of process innovations such as laser cutting technologies and

industrial automation used in manufacturing. Efficiency, substitution, and process innovation have led to the fact that despite increasing demand over the last 80 years, resource prices have actually decreased in real terms.

- **Resource Efficiency (i.e. micro irrigation):** Modern micro-irrigation systems could cut water consumption by as much as 30 to 70 percent. The positive side effects of this technology include the prevention of soil salinization and the decreased use of pesticides. While these new irrigation technologies are economically viable, the speed at which they actually establish themselves ultimately depends to a large extent on the available financing. One of the decisive factors is still the price that farmers have to pay for the water and the extent to which the authorities are prepared to clamp down on illegal water extraction. One interesting point worth noting in this context is that in 2010, the amount invested globally in irrigation systems amounted to about USD 10 billion, which is a surprisingly low figure given the importance of the agricultural sector for water consumption.

- **Substituting for efficiency:** Over the past decades aviation has been at the forefront of using lightweight materials. Improved manufacturing processes and new composites have helped drive down the cost of lightweight materials such as carbon fibers and titanium and aluminum alloys. These are ubiquitous in aviation today. Thanks to continuous improvements and regulation, the substantially larger automotive industry is also expected to increase the adoption of lightweight materials such as high strength steel, aluminum, and carbon fibers significantly.

  Currently, steel is the single most important material in cars, and the automotive industry accounts for 6 % of global steel usage. However, demand for steel has been declining due to the use of high strength steel, which effectively reduces the amount of steel required to achieve similar strength. Penetration rates for lightweight materials in the automotive industry are expected to approach 67 % over the next decades, mainly at the expense of standard steel. In relative terms, automotive manufacturing uses around 1,000 times the amount of resources of aviation. These shifts should have significant ramifications for the traditional basic resources industry, which could lose 40 % of volume according to IHS. McKinsey puts the lightweight materials market at EUR 300 billion2 by 2030, growing at 8 % annually.

  As a result, substituting traditional materials such as steel and aluminum with advanced materials such as carbon fibers can significantly improve the performance and reduce costs of certain applications. In what was initially a very small market, the cost of carbon fibers has declined from USD 350 per kg in the 1970's to approximately USD 20 per kg today, as carbon fibers have steadily penetrated new

applications including aerospace, construction, sports equipment, blades for wind turbines, industrial machinery, and more recently, the automotive sector.

- **Recycle/ life cycle/ value chain management:** We also now better understand the life cycle potential of many materials – how a resource can be managed more efficiently, from extraction, transport, transformation and consumption, to the disposal of its waste, if any!

  Companies developing resource efficiency solutions that increase productivity or lower input costs will benefit from reduced risks associated with price fluctuations, environmental liabilities and regulations, and an enhanced reputation, boosting their competitiveness. Investors who identify these game changers can benefit from superior risk adjusted returns. And that is what we are focused on doing at RobecoSAM. Through our thematic public equity and private equity strategies we translate resource-related challenges into specialized investment portfolios containing future-oriented companies that are already providing innovative solutions to resource scarcity in the area of water, energy, agribusiness, materials, and healthy living.

What sector has had the most significant impact on the renewable energy landscape thus far? Why?

Mr. Wild: In my opinion, wind energy has had the most significant impact on the renewable energy landscape thus far for two simple reasons:

The first is that it was the first renewable energy source to become truly mainstream (excluding biomass, since that has already been around for thousands of years). Wind power began its journey toward the mainstream during the 90s in the Netherlands and Denmark with the emergence of a handful of small independent players. During this initial phase, the industry experienced relatively slow growth, which allowed developers to establish efficient supply chains and put in place robust quality controls. These measures resulted in significant widespread political support for this "new" technology beyond the borders of the Netherlands and Denmark.

This in turn paved the way for wind power's second phase, a period during which it grew from being a fringe industry to being a fully-fledged business with significant earnings and a solid workforce of its own. The 2008 financial crisis drew the sector even further toward becoming a mainstream industry as utilization rates declined drastically, and competition became a real issue forcing industry leaders to reconsider their positions. During this period, many wind energy companies fell into crisis mode bringing significant changes in management, which saw leaders from other sectors join these companies bringing new perspectives and areas of expertise with them.

It was during this latter phase that my second reason for nominating wind energy was formed: the industry became (and has remained) competitively priced versus conventionally generated electricity. Although other renewable energy sources have also made significant progress, most still remain far more expensive than wind. Now said to be in its third phase, the wind energy sector is very similar to its industrial peers in terms of having a sound economic basis and established industry best practices but with a higher innovation rate. Certainly, if it remains on track, the industry will continue to have a significant impact on the renewable energy landscape.

Debates about environmental issues and solutions are common among the public and governments. What role do you think investors could play in establishing active working relationships with all stakeholders to effectively address environmental challenges?

Mr. Wild: Investors are interested in furthering a better understanding of risks and returns of investment strategies. With that in mind, one of the main roles investors should play in establishing active working relationships with all stakeholders to effectively address environmental challenges is that of the educator.

By facilitating stakeholder dialogues and knowledge sharing, investors could further a better understanding of environmental issues and environmentally linked investment strategies. A natural byproduct of this is that stakeholders are made aware of the critical link that exists between environmental factors and business relevance, or in other words financial materiality.

Furthermore, investors are also in a position where they can point out instances where external environmental costs have not yet been fully internalized and are therefore driving financial asset allocation in the wrong direction. Raising awareness for such situations would create public pressure and political momentum that eventually change the rules of the game, for example: climate policy and CO2 costs.

Finally, I see an opportunity for investors to work with environmental project initiators at an early stage (or even at university level). This would help ensure a greater number of projects that aim to provide solutions to environmental challenges are financially viable and brought to fruition.

BIOGRAPHY

Daniel Wild is the Head of Sustainability Investing R&D and a Member of the Executive Committee at RobecoSAM, the investment manager exclusively focused on Sustainability Investing. Founded in 1995, RobecoSAM has 20 years' experience in promoting environmental investing to institutional asset owners and financial intermediaries. Over

the course of his career, Daniel transitioned from environmental research in academia, to working and financing infrastructure projects, to steering investors' money toward the solution providers of resource scarcity challenges.

In his position, Daniel oversees the organization, strategy, methodology, and investment process of Research and Product Development at RobecoSAM. As such, Daniel is responsible for the identification and integration of financially material environmental, social and governance (ESG) factors into the investment strategies of RobecoSAM as well as those of its parent company, Robeco. As per June 2014, Robeco managed EUR 111.5 billion in ESG-integrated assets, that is 50% of the group's EUR 223 billion in total assets under management.

Additionally, Daniel is responsible for the development of the RobecoSAM Corporate Sustainability Assessment (CSA) methodology, an internationally renowned standard for ESG analysis. Its application on 2800 large caps forms the basis of the Dow Jones Sustainability Indices (DJSI), a globally recognized sustainable index family launched by RobecoSAM and S&P Dow Jones Indices, in 1999. In 2009, Daniel introduced the water related risks criteria to the CSA which not only ensured that participating companies became aware of such arising risks, but also demonstrated best practice examples and encouraged firms to use water resources more efficiently. Based on its CSA, RobecoSAM has compiled one of the world's most comprehensive databases of financially material sustainability information, which RobecoSAM uses to provide sustainability benchmarking services for corporate companies. Daniel joined RobecoSAM in 2006 as senior financial analyst and coordinator for the RobecoSAM Sustainable Water Strategy, covered water-related industries and led RobecoSAM's industrial sector research, before heading Sustainability Investing R&D and joining the Executive Committee in 2011.

Prior to joining RobecoSAM, Daniel led infrastructure financing programs in Southeastern Europe and Asia for the Swiss State Secretariat for Economic Affairs (seco). While at seco (2004–2006), he was responsible for a project portfolio of CHF 80–100 million that covered water and wastewater, energy, hazardous waste, waste incineration, railways and smart tariff systems. From 1999 to 2004, Daniel headed the Environmental Technology Department at Ernst Basler and Partners, a Swiss engineering and consulting firm.

Daniel holds a Masters in Chemical Engineering from ETH Zurich (1987–1993) and a PhD in Environmental Engineering from the Swiss Federal Institute of Aquatic Science and Technology (EAWAG) (1993–1997). He pursued postdoctoral research studies at Stanford University between 1997 and 1999, where he focused on groundwater enrichment and the effects of pollutants in Orange County, California.

He was awarded the Pergamon Press Publication Gold Medal in 1996 by the International Water Association (IWA) for outstanding paper contribution and is the author of numerous academic articles published in peer-reviewed journals. Daniel is a Board Member of Swiss Sustainable Finance, and formerly a member of the GRI Sector Research Steering Committee and UNEP FI Workstream Water Advisory Board. Throughout his career, Daniel has regularly participated in industry conferences as a speaker or panelist, and is a sought after expert on sustainability investing.