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Introduction

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“Revolution” is an overused term, and sometimes revolutions only become obvious after the fact. That said, we are confident in saying that global business is in the midst of a revolution. It’s unfolding in many different ways, particularly in the production, management, and use of energy and natural resources. If this is not immediately clear, it is because the process is gradual. But businesses cannot ignore what is happening: this revolution will bring great challenges, as well as great opportunities, and play a major role in shaping the 21st-century global economy.

In the first edition of *McKinsey on Sustainability & Resource Productivity*, published in Summer 2012, we argued that “if the scale of the resource challenge is unprecedented, so, too, is the know-how available to address it.” In this edition, we show how many companies are deploying that knowledge and building new management capabilities. We do not address policy issues in depth, because there is a great deal that business can do without waiting for legal or regulatory action. The opportunities to improve sustainability and resource productivity will continue to build, regardless of what governments do.

It is impossible to say what the ultimate outcome will be: revolutions, by their nature, are unpredictable. But we can say that global currents are running strongly in the direction of rapid improvements in environmental stewardship and resource use. This is not a matter of “greenwashing” to appease critics and activists. It is becoming a critical part of business strategy and operations for two reasons. First, the addition of 2.5 billion people to the middle class, and higher and more volatile resource prices, means that business as usual simply will not be good enough to maintain profitability. Second, there are growth opportunities that smart companies can capture. Sustainability is increasingly just business—big business. Companies and countries are finding they cannot meet their growth and profit objectives without a commitment to resource productivity.

In this second issue of *McKinsey on Sustainability & Resource Productivity*, we seek to establish the value of sustainability and to demonstrate how these opportunities can (and are) being captured in a range of industries. As McKinsey director Matt Rogers and alumnus Stefan Heck put it in their new book, *Resource Revolution: How to Capture the Biggest Business Opportunity in a Century* (New

Harvest, April 2014), “We confront an opportunity that will reframe the world’s economy and create opportunities for trillions of dollars in profits.”

That sentence informs the content of this compendium. Taken together, the seven articles suggest ways that companies can adapt to global trends, profit from them, and improve human and environmental well-being along the way—what we mean by “sustainability.” Is that a utopian idea? Or an implausible one? Not at all.

In our conversations with global executives, these issues come up more and more often. Sustainability is becoming a core principle of how some of the world’s leading companies plan for the future and organize their operations. Moreover, the level of sophistication, managerial skill, and knowledge of sustainability is rising fast. Thanks to the integration of digital and industrial technologies and that harsh but invaluable taskmaster—experience—companies simply know more about how to produce and use resources productively. Productivity metrics are increasingly refined; so is the evaluation of risk and returns. And failure has been its own reward, forcing out weaker players and identifying the best, most productive business models.

Inside McKinsey on Sustainability & Resource Productivity

We open with a wide-ranging article, “Profits with purpose: How organizing for sustainability can benefit the bottom line,” based on interviews with dozens of executives. Sheila Bonini and Steven Swartz look at why leading companies are bringing sustainability principles into practice. The reason, one leader told us, is simple: “Leading on sustainability is driven largely by our desire to grow.” The article details how to apply performance-management principles to sustainability and shows how doing so can create value.

That idea is central to *Resource Revolution*. Heck and Rogers note that business leaders require new management skills to compete in markets characterized by tight resource constraints, increasing pollution pressures, and rising customer expectations. It’s a perfect storm of circumstance—no wonder many business leaders are feeling beleaguered and more than a little anxious. In an excerpt from the book, the authors address a subtle and often-overlooked aspect of the sustainability journey: human capital. Companies that seek to get and stay ahead need to find the right people with the right skills; conventional practices and talent may not be enough. As the authors put it, “New talent needs to be found in new places.” Competing in a world where information technology is reshaping industrial technology may require reaching into adjacent industries and emerging-market universities.

Extractive companies will face specific issues: a growing share of natural resources will need to be drilled or dug out of places with unstable business and legal structures. The risks are extraordinary, as Pablo Ordorica Lenero and Fraser Thompson explain in “Riding the resource wave: How extractive companies can succeed in the new resource era.” They estimate that to find new sources of oil, copper, and other commodities, and to replace those that are running out, at least \$11 trillion will be required. To protect those investments, the authors argue that companies need to establish a new deal with local communities by putting economic development at the heart of strategy.

Several articles consider energy-related questions. They share a common theme: the future is bright for the energy sector, including renewables.

“Brave new world: Myths and realities of clean technologies” takes on the skeptics and demonstrates

that the cleantech sector is on the verge of the big time. Cleantech is going through a difficult phase, but other emerging technologies—think of the car, the semiconductor, and even the elevator—also had teething problems. It is a natural part of the maturation process. “Cleantech is no passing, unprofitable fad,” conclude Sara Hastings-Simon, Dickon Pinner, and Martin Stuchtey. “The sources of underlying demand—a growing middle class around the world, wanting clean air and water, and resource constraints—aren’t going away, and cleantech is pivotal in dealing with both.”

In “Unconventional wisdom: Fracturing enters a new era,” Parker Meeks, Dickon Pinner, and Clint Wood look at the dynamics of a fossil fuel-based form of energy—gas and oil derived from shale resources. Almost all of this is being drilled in the United States, where shale-based production has upended the energy market faster and more profoundly than anyone might have guessed even five years ago. There are, however, environmental concerns about drilling for shale energy. This article explains four technologies that could help to address these concerns and possibly further disrupt global energy markets.

Next, we turn to solar energy, which has hit some rough patches of late, with numerous high-profile closures and bankruptcies. At the same time, however, deployments continue to grow; solar, for example, has grown by 57 percent a year since 2006, due to sharply lower module costs and innovative business models. It will not be long, say David Frankel, Kenneth Ostrowski, and Dickon Pinner, authors of “The disruptive potential of solar power,” before solar will be in striking distance, in economic terms, of traditional energy sources such as coal and gas.

Finally, the growth of bioenergy in Europe has not been as fast as expected, but that could change, according to Marco Albani, Anja Bühner-Blaschke, Nicolas Denis, and Anna Granskog in “Bioenergy in Europe: A new beginning—or the end of the road?” Bioenergy offers a promising way to make the transition from coal to renewables, and new technologies such as torrefaction and pelletization could improve efficiency markedly—and thus improve bioenergy’s competitive position.

The thread that runs through the contents of this issue is a preference for the down to earth, the empirical, and the rigorous. Sustainability could be a profound force in shaping the future of business—but only if business leaders believe it will also be a profoundly profitable approach. We believe these articles make that case.

We will follow up on these and related ideas in future issues of *McKinsey on Sustainability & Resource Productivity* and on mckinsey.com. And of course, we look forward to continuing our efforts on the ground. This business revolution is a work in progress—but a future of solid and sustainable economic growth is a goal well worth pursuing. ■

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