Hope and the New Energy Economy

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I have been thinking about my grandchildren a lot lately, and I don't even have any. But when my kids are older, I probably will, and I keep wondering what life is going to be like for them and for their children. For most of my life, I have been an environmentalist, thinking that nature itself was at the center of my concerns. But I am coming to realize how much of my concerns are really about future generations of people—not just my own family, and not just a generation or two, but generations rippling outward, over a longer period of time. I'm generally an optimistic person, so I have to envision a changing world, an adapting world, not an awful world.

I have spent my professional career creating new businesses in emerging technology sectors, trying to catalyze relationships that align economic growth with environmental stewardship. I see all around me signs that business as usual is changing. The signs fill me with hope. The way we produce and consume energy is the root cause

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A New Energy Ethic

There is good scientific evidence that incremental changes to the Business as Usual Curve will not reduce our CO_2 emissions sufficiently. But there are other signs that a new energy ethic is emerging that will result in the dramatically new economy my grandchildren will experience, where communities of change are local but globally networked, and the interests of the worlds of commerce, financial markets, government, education, and philanthropy are aligned with the requirements of a thriving ecosystem.

Two factors have made it difficult in the past for business as usual to address the problems of climate change. First, thinking long-term is a challenge in the world of business and finance. Commercial markets have a much shorter rhythm than natural cycles, and "longterm" investment is foreign to an increasingly accelerated cable news culture, where investors' horizons are shortened by the immediate monitoring of condensed business cycles and never-ending patterns of consumption. This has led to short-term thinking, condensing business decisions from annual or quarterly projections to overnight horizons. The commercial world will always work within short spans of time, but longer-term thinking is central to capital formation and structure, for investment in growth and sustainability over time. The longer-term perspectives that are good business practices also reflect wider horizons of "value" in the broadest sense, including what matters in the long run, and what means are worth pursuing for what ends.

The second factor is the mistaken though widespread belief that current economic viability requires sacrificing longer-term environ-

MORAL GROUND

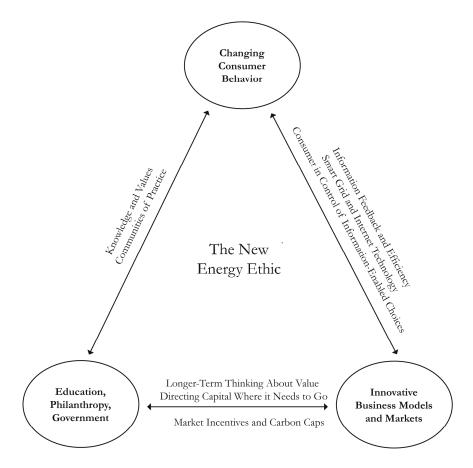
mental sustainability. I am convinced that it does not. A false dichotomy between economic growth and environmental sustainability may have separated ecosystems and their resources from our economic lives and misguided us into narrow conceptions of prosperity as limitless accumulation of material goods. But all this is changing. Businesses are realizing that their own sustainability and their own prosperity will be accomplished by aligning their interests with longer-term consideration of environmental sustainability, and of mitigating climate change in particular.

Despite these bars to change, we are living through a major transition right now. While transitions can wreak havoc, we are realigning the interests and institutions whose historical mismatch has led to our environmental predicament. It is possible for me to hope because I can envision a world in which economic activity involving individuals and institutions will dramatically change in a short period of time. We can create a very different economy, based on bold changes in how we think and live as individuals, how communities are shaped, and how innovative business and capital markets will take root, creating new jobs, activity, and prosperity.

What does this change require? First, consumers who are empowered to make good choices based on information about their energy use. Second, new ways to finance companies that assist in the transition to a low-carbon economy. And finally, mission-related investments wherein investors can grow their capital while funding energyefficient projects. These can be achieved by the cooperative efforts of the educational, business, philanthropic, and governmental sectors of society. The relation of these goals and institutions might be understood this way:

Education and the New Economy

Energy awareness at all levels of public education can bring us together to act in our communities, whether they be local, national, virtual, or global. Many of us are too unaware of the science and economics of energy to make informed decisions as citizens and consumers. The connections between energy use and global climate change are rarely taught to us in school, and as a result we leave our decisions



about public policy to others. Values are formed and decisions are made without the knowledge that even a middle school student could digest, even though knowledge about the effects of our energy use can be life-changing. We have begun to address questions in school about where our food comes from, but we have barely begun to address our national inability to understand where our energy comes from, or the consequences of our individual habits of consumption.

This, too, is beginning to change. I see it every day, as I direct a philanthropic foundation that supports environmental education initiatives. Because we are empowered to make choices when we have information at our disposal, and because new choices are becoming available to us, energy education must become a national priority if we are to accelerate the promising changes in the energy economy that are taking place. Policy choices will be adopted with a new urgency when an informed citizenry feels a call to action based on what they know. Our thinking and behavior as consumers will change and will be supported by new economic arrangements. Educational institutions will play a central role in easing an abrupt transition to longer-term thinking about nature, resources, energy, and environmental degradation. It will change our behavior as individuals and in the marketplace. But not all the education will take place in schools.

I happen to be on an airplane as I write this paragraph, on my way home from a conference on "smart grid" technology and the new energy economy. The overarching theme of this showcase is that we are beginning to act differently as consumers; as we have new information at our fingertips, we are empowered to make energy use decisions that will usher in a new paradigm of how we produce, transmit, and use energy.

Behavior changes start with information. When we have smart meters in our homes, we can measure and monitor every activity involving energy consumption. Starting with the measurement, we begin to create the ability and incentive for reducing wasted kilowatts and cost. It is in our power to dramatically change how we think about using energy, bringing a much longer-term perspective into our conception of prosperity. Understanding how energy is produced, transmitted, and used can have a huge impact on our personal and global demands for energy. We will never again look at the light switch or thermostat the same way.

Local and global distinctions will change as everyone becomes both a producer and a user, and new networks will emerge in an attempt to keep energy use close to the source of production, preventing losses in efficiency through transmission over long distances. As distributed generation and efficiency become the hallmarks of how we produce and use energy, a new model of networks and grids will emerge, one that recoups a sense of community among people who trade, share, compete, and cooperate. We will have at our fingertips instantaneous information about the energy we consume, and the power to use more or less at any moment.

Innovative business models and markets will develop as the new

energy economy creates a real opportunity for all different types of capital to be deployed and invested. Traditional capital providers such as venture capital, private equity, and financial institutions have the opportunity to invest in growth-oriented companies providing solutions. New and unique financing gaps also create an opportunity for mission-related investing, which enables families, foundations, endowments, and pension funds to align their longer-term capital investments with specific mission results and outcomes. These sectors of investors should provide an important bridge to spur investment and innovation.

There are many, many examples of businesses that provide glimpses of what a realignment of interests might look like, where private capital is already generating market-rate returns in new investments in a cleaner energy economy. The investment firm I helped to build has as its mission the financing of companies that will assist in the transition to a low-carbon economy. An entire financial industry is emerging that will shift capital in this direction in a bigger way and is bringing such endeavors to a scale that is helping to bend the Business as Usual Curve into the new energy economy.

It's true that individual investors, both conservative and risktaking, often see mission-related investment as a philanthropic frill. But responsible investing need not be less profitable; and it could become even more profitable if there were, for example, bond markets directed specifically at energy initiatives. Even as things now stand, we are on the brink of significantly widening such opportunities.

There is a natural role for leadership here by those investors whose perspective is longer-term and focused on responsibility, yet who are also savvy about protecting their resources over longer periods of time, even for future generations. Philanthropy, educational institutions and other endowments, and pension funds can take leadership by directing capital to the right places with mission-related investments that give more than an economic return. They can be growing their own capital while funding energy efficiency projects in lowincome communities, or renewable energy projects in rural communities, or even microloan finance programs for household energy efficiency. Mission-related capital can be the bridge to accelerate the transition to a low-carbon economy. What has been missing is the opportunity to more robustly deploy more capital in investments that will further a mission. When the new financial industry provides mission-related investors with the investment vehicles to use their capital to promote their mission without sacrificing returns, the influx of capital will unleash a spirit of entrepreneurial initiatives, from green-collar jobs to new capital markets.

Government and Philanthropy: Redirecting Capital for Innovation

Government and philanthropy can help bring about bigger changes in the business of how energy is provided, how it is used by communities, and how we think about markets and resources—indeed, how we think about our wants and needs and the very concept of prosperity.

Currently, proposed federal and state legislation is already advancing polices that will reflect the costs of carbon in its price, motivating innovation. A tighter cap on emissions will matter more in stimulating market-based solutions than whether the legislative mechanism turns out to be a system of cap and trade, tax incentives and dividends, or a combination. This will play an important role in our coming to appreciate the deeper connections between global climate change and the economic arrangements of our daily lives and institutions.

Foundations and nonprofit endowments are now attending carefully to whether their philanthropic donations, their "investments" in the work of others, are getting the mission return they expect. Over time, they have become more demanding, asking for accountability from the charities and endeavors they support. On the other side of the house, in protecting their assets over the long run, foundations and endowments have become very sophisticated investors, deploying their capital to maximize returns.

Foundations and nonprofits will, for example, lend money to energy efficiency projects, or invest in start-ups and existing companies that are promising alternatives to past practices, and get a financial return that is equal to other investments with the same risk. We should be able to invest in the new energy economy as we have in low-income housing, or even highways and water treatment plants. This exists now in the equity markets but has yet to be developed in the debt markets. If we really want to accelerate the transition to a low-carbon economy and a new energy economy, we need to do more on this front, and do it quickly. But every day at the office, working with government officials and NGOs, I see this growing, and it provides yet another reason for hope. I believe families, foundations, endowments, and pension funds will be the leaders in this area. They exist for the future, and that is something the rest of us need to incorporate more into our daily lives, our values, and the way we conduct business.

Reasons for Hope

I predict that when we recognize the environmental damage and the long-term depletion of our resources that are caused by our inefficient and dangerous carbon emissions, those costs will become reflected in the price we pay for energy. With new policies governing our markets, consumers will be empowered to make better choices. The new economy will redirect its capital to job- and wealth-creating entrepreneurs, commercial enterprises, and investment opportunities. Having worked in just these commercial and capital markets for many years, I believe components of the economy are not merely compatible with a paradigm shift, but are indeed necessary for it, and that such a shift is happening right now.

Business and commerce will continue, and their focus will remain largely on short-term horizons. As the rules by which they play are changed by policies that align their interests with energy efficiency and environmental stewardship, new capital formation and structures are redirecting investments to a clean energy economy. As businesses and consumers are empowered with the knowledge to make different choices, new opportunities are becoming affordable to both.

The world in which I envision my children and grandchildren living will not be easy. Technology will not be able to remove the greenhouse gases we have left in the atmosphere, and they will feel its effects in a dramatic way. We are beginning a new era that will not come to full fruition while we are alive. But it is beginning, and we have reason to hope that the world my children leave to their children will be on a different path than the one we inherited. We have no choice but to reconsider what prosperity means to us and to the way we do business, and to embark on a new future immediately. Hope should not come too easily if it is to be meaningful, and we will have to work together as we never have before. But there is good reason for hope, and without it we have nothing.

I would like to thank the many people who have influenced my thinking and helped to organize these thoughts. In particular, Joan Briggs, who brilliantly manages our Foundation and has enough soul for the world; my childhood friend Scott Brophy, now a grown-up discussion partner and professor of philosophy at Hobart and William Smith Colleges; Mark Cirilli, my partner at MissionPoint Capital Partners, a financial leader in the low-carbon economy who has blazed the path with innovative solutions; and my wife, Betsy Fink, who is willing to take on big environmental issues by successfully catalyzing local education and awareness solutions.