

## Not Too Late to Act

### Betsy Taylor

Scientific reports on how quickly climate change is proceeding have divided climate experts on the issue of how far the delicate global ecological balance has tipped. While virtually all experts agree that the situation is precarious, a growing number of influential leaders are quietly whispering that we are already too late to avoid cataclysmic change. Don't believe them.

When you think things seem impossible, consider migrating birds. By some miraculous combination of genetic coding and sheer determination, warblers, waterfowl, hummingbirds, and hawks travel thousands of miles each year, despite increasingly scarce habitat and food, to mate and nest. Some birds weigh less than an ounce yet travel at high altitudes from hillsides in Canada to mountains in the Dominican Republic. *Homo sapiens* can be equally amazing. We consciously sacrifice ourselves to protect others. We do extraordinary things to ensure that life flourishes. The drive for a safe future should never be underestimated.

Earth is resilient, and humans have a remarkable capacity to overcome tough odds in the quest for survival, freedom, and justice. We have our stories—Nelson Mandela, Vaclav Havel, Wangari Maathai, Mahatma Gandhi, Mother Teresa, the Berlin

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Wall, and the journey to the moon among the most inspiring. Now a worldwide movement inspired by the prospect of climate change is refusing to accept the traditional pattern of incremental change. Bold actors in a variety of fields and professions are rapidly emerging on every continent and in every sector of human society.

Author and academic Michael Pollan, for example, envisions a radical restructuring of the global food system that rapidly eliminates the need for fossil-fuel fertilizers and minimizes global transport of most foods. Stephen Heinz of Rockefeller Brothers Fund, Jules Kortenhorst of the European Climate Foundation, and Uday Harsh Khemka of the Nand & Jeet Khemka Foundation together are harnessing the power of philanthropy on a global scale to support energy innovations in China, India, Europe, and the United States. Local officials like Mayor Marcelo Ebrard of Mexico City, former school teacher and now California legislator Fran Pavley, and Mayor Michael Bloomberg of New York City are changing transportation, land use, and energy policies to reduce carbon emissions.<sup>1</sup>

The case for bold action is indisputable. The roadmap into the future is becoming increasingly clear.

Imagine it is 2025 and you are speaking with a young person, describing the role you played in helping your school, community, or country turn away from fossil fuel consumption and catastrophic climate change

and toward a more just, secure, sustainable path. Rather than a story of mass migrations, rising sea levels, and collapsing ecosystems, it is a story of heroism, unexpected breakthroughs, and climate solutions. Instead of feeling hopeless about a global economic machine built on coal and oil, you are feeling excited about the new ways we generate power, grow food, and live together. Let's look ahead and imagine that together with millions of other concerned citizens we defied the doomsday prophets and created the foundation for transformational change.

By 2025 global carbon emissions are rapidly decreasing. The world has embarked on a green economic recovery program that stimulates new jobs, businesses, and sustainable growth. Millions of new jobs have been created on every continent to hasten the transition to a zero-carbon economy. In the United States alone, 2 million new jobs were created by 2010. Today roofers, electricians, civil engineers, assembly-line workers, lawyers, loan officers, and urban planners are building zero-carbon schools, health clinics, and homes. They manufacture and market wind turbines, solar panels, and hybrid vehicles. Many plant and harvest community gardens and small farms, while others design and construct mass transit systems, a smart grid, and new solar-powered irrigation systems. Work is valued, and green jobs in New Orleans as well as in Haiti, Zimbabwe, and Liberia lift people out of poverty.<sup>2</sup>

The world has experienced a revolution in energy efficiency. We stop wasting energy and realize that conserving energy means saving money. The extra money we initially spend on efficient cars, appliances, and buildings is quickly paid back in reduced energy and gas bills. By 2012 incandescent light bulbs were banned everywhere, and our homes, offices, and buildings have LED lights that have dis-

placed at least 700 coal-fired plants. We have exciting and climate-friendly new technologies to use, such as solar-powered electric bicycles that go up to 20 miles per hour and cars that get the equivalent of 200 miles per gallon of gasoline—but that use no gas at all. Zero-carbon mass transit systems operate in nearly every major metropolitan area, funded by dramatic reductions in global military spending.<sup>3</sup>

Offices in New York, Beijing, and Bombay have task lighting, occupancy sensors, high-efficiency windows, and white or pastel roofs that deflect rather than absorb heat. Old-fashioned energy conservation is popular. Millions of people in industrial countries dry their clothes in the sun and turn off unnecessary lights and electronics. Women-owned enterprises in India, Honduras, and Ethiopia produce naturally dyed clotheslines, and inner-city youth in Detroit employed by the Conservation Jobs Corps ensure that homes are properly insulated.

Nations have saved billions of dollars and hundreds of gigawatts of electricity by establishing aggressive codes and standards for buildings, vehicles, appliances, and power plants. These standards unleash market-driven innovations in lighting, heating and cooling, building materials, insulation, vehicles, industrial processes, power generation, and appliances. Looking back, it is clear that 2009 and 2010 were pivotal years—a time when forward-thinking nations recharged the global economy with a program to retrofit half of the world's buildings with energy-efficient technologies and restart auto assembly lines to produce affordable plug-in hybrid vehicles.<sup>4</sup>

Electricity from renewable sources has displaced coal and traditional fossil fuel power plants. Renewable sources of energy such as wind, solar, geothermal, and biomass have displaced conventional power plants in the

United States and in many other parts of the world. In northern Africa, parabolic solar troughs span the equivalent of nearly 45 football fields in the Sahara. Along with smaller-scale community-owned photovoltaic and hot water systems, solar power from this region alone annually supplies the equivalent of half of the Middle East's annual oil production. Community-owned solar installations in developing nations provide power for water pumping and drip irrigation, health clinics, schools, homes, streetlights, and wireless Internet.<sup>5</sup>

Wind power is a source of rural economic

Solar-powered rickshaws in Milan, Calcutta, and Jakarta offer mobile coffee bars. In the United States, all coal-fired power plants have been shut down, replaced by renewable energy and the short-term use of natural gas. Former coal workers in Wyoming and Huainan now build small-scale, state-of-the-art underground storage facilities for zero-carbon food preservation.<sup>6</sup>

The world is greener as we look around in 2025. By the end of 2009, more than 7 billion new trees had been planted. The success of this initial campaign led to vast tree planting around the world. Early successes with reforestation and tree planting in tropical zones were pivotal in demonstrating a global spirit and commitment to action. With leadership from Costa Rica, Ethiopia, Kenya, and Papua New Guinea, and financing from the industrial world, each of the billions of trees on average absorb 6 tons of carbon dioxide a year.<sup>7</sup>

Developing nations are on the path to greater prosperity, and industrial countries are on the path to sufficiency without excess. Population is declining because men and women in the developing world have access to family planning and to food and shelter. We joined together in 2009 and 2010 and said NO to business as usual and YES to

a fundamental change in direction. We are preoccupied with creating convergence between those who do not have nearly enough and those who have more than their share. We do this joyfully, for we recognize that climate change can no longer be denied and that social justice and global cooperation at all levels are prerequisites for a safe future. Our economies are more local than global and as a result, small businesses and farms thrive.



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*Part of our solar-powered future*

development in China, the United States, Spain, Tunisia, Egypt, and elsewhere. China exceeded its goals and had more than 150,000 megawatts of wind power by 2020. Communities and buildings look different: Rooftop solar panels and flat-profile residential windmills feed electricity back into the grid. Pedestrians generate electricity just by walking on energy-generating sidewalks, while health clubs produce electricity through treadmills and aerobics classes.

We have begun to see that life can be safer, slower, and less driven by anxiety. More of us have a sense of sufficiency and security. Global capitalism driven by ever-rising consumption has been fundamentally altered by a new system of rules that unleash innovation while protecting freedom and all life on the planet. We have transcended powerful special interests and centuries-old debates about economic systems to build a dynamic and promising world. Young people feel hopeful.

We will not reach this world of 2025 until we rise above the narrow confines of our

individual concerns to embrace the concerns of all humanity. We must also act with a sense of overwhelming urgency. The incremental baby steps of the past will not be enough. Millions of students, business leaders, engineers, community activists, and local elected officials are taking bold action and we must join with them. So don't believe those who whisper that we are acting too late. The future will be determined by those who defy the odds to imagine a very different tomorrow and then get serious about the kind of transformational change needed to get there.<sup>8</sup>

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