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ECO-FRIENDLY TECHNOLOGY

GOOGLE & G.E.

how two giants of business plan on shaping our future

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HOW HIPPIES ARE MAKING A COMEBACK

think different

STUDENTS EXPLORE GREEN SOLUTIONS

september 08

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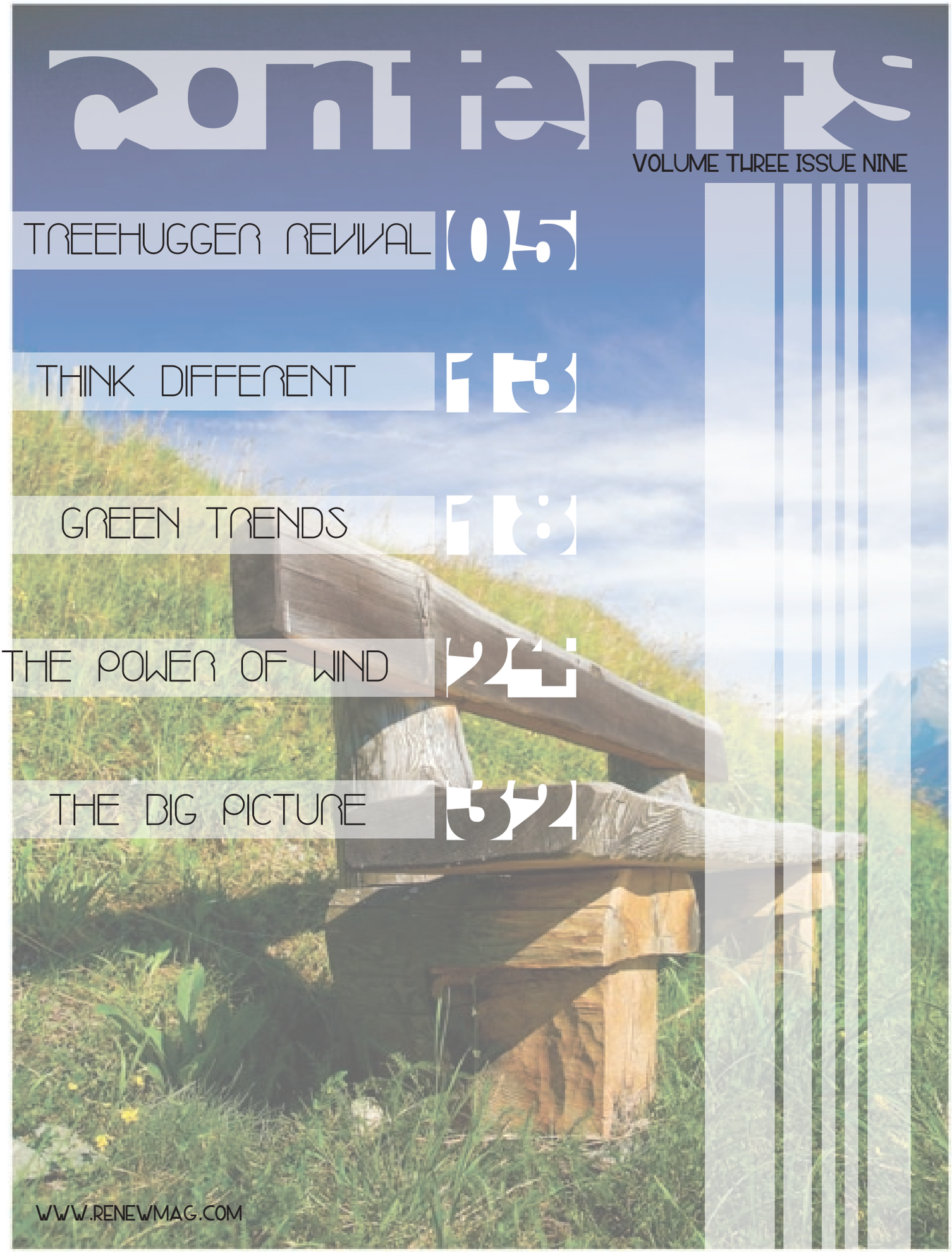

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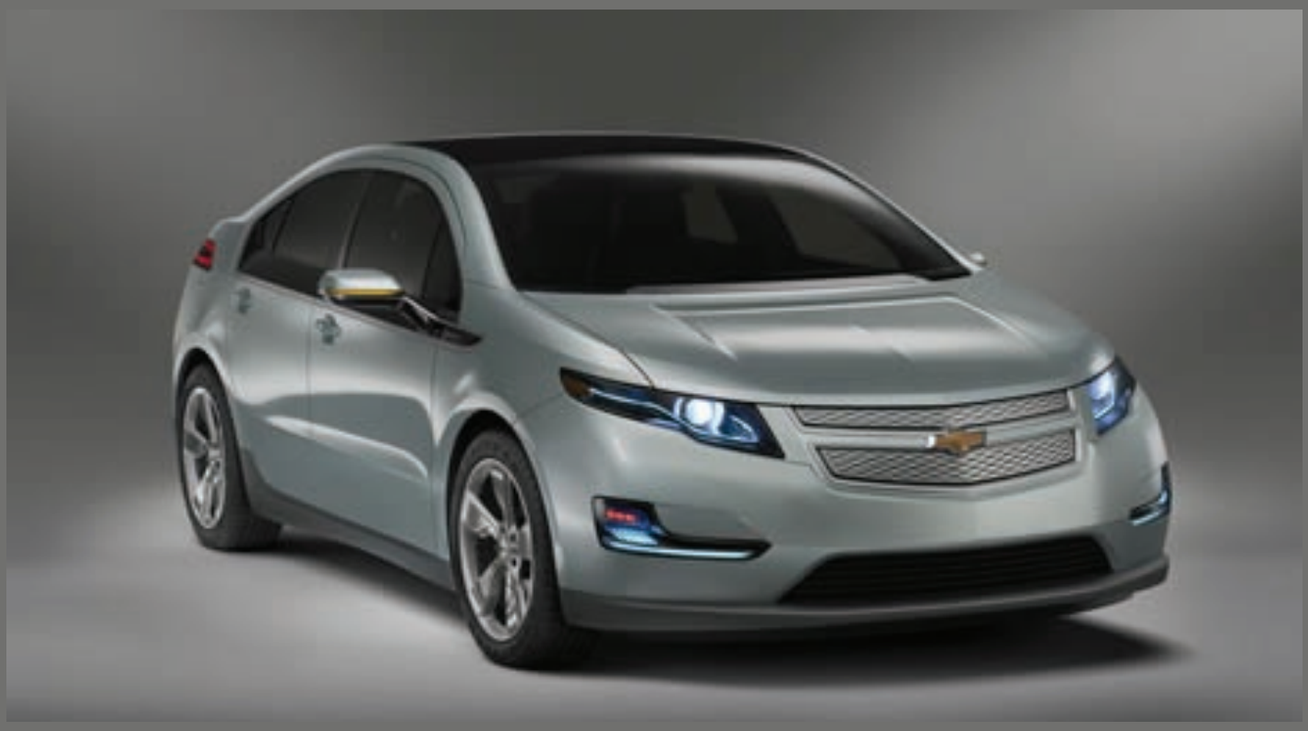

introducing the 2011 chevy volt

The extended-range electric vehicle that is redefining the automotive world is no longer just a rumor. In fact, its propulsion system is so revolutionary, it's unlike any other vehicle or electric car that's ever been introduced. And we're making this remarkable vision a reality, so that one day you'll have the freedom to drive gas-free.

Chevy Volt is designed to move more than 75 percent of America's daily commuters without a single drop of gas.(1) That means for someone who drives less than 40 miles a day, Chevy Volt will use zero gasoline and produce zero emissions.(2)

Unlike traditional electric cars, Chevy Volt has a revolutionary propulsion system that takes you beyond the power of the battery. It will use a lithium-ion battery with a variety of range-extending onboard power sources, including gas and, in some vehicles, E85 ethanol(3) to recharge the battery while you drive beyond the 40-mile battery range. And when it comes to being plugged in, Chevy Volt will be designed to use a common household plug.

CHEVY

AN AMERICAN REVOLUTION

GOOGLE & G.E.

how two giants of business plan on shaping our future

General Electric and Google on Wednesday announced a collaboration to lobby for renewable energy policies and to jointly develop clean technologies. During the Google Zeitgeist conference in Mountain View, Calif., Google CEO Eric Schmidt interviewed GE CEO Jeffrey Immelt onstage about the maturity of renewable energy technologies and current policies.

Schmidt said that the two companies will push for government programs to modernize the electrical grid, which would enable broader use of renewable energy. "GE and Google will be advocating in Washington for the new and smarter grid," Schmidt said. Their policy partnership will call for beefed-up transmission capacity so renewable sources, such as wind, solar, and geothermal, can be further deployed. Wind power is far ahead of other renewable energy sources in being reliable and cost-competitive with fossil fuel power plants, Immelt said. GE'S wind business, one of the largest in the world, will bring in more than $7 billion this year. However, wind farms are often placed away from the centers of high electricity use. To greatly expand wind energy, which now makes up less than 1 percent of U.S. power generation, more transmission lines are needed. "If we really want to drive renewables to where it could be, we are going to need more transmission capacity, and the government is going to have to (intercede) to make that happen," Immelt said.

Right now, renewables other than hydroelectric power represent only a few percent of the overall electricity generation in the U.S. Immelt said that getting 20 percent from renewable sources by 2020 would be possible to achieve. "Actually, this isn't hard. The technology exists. It doesn't have to be invented. It needs to be applied. It needs to be priced for carbon and things like that. This can happen," Immelt said.

Technical collaboration On the technology side, the two companies intend to develop smart-grid technologies, plug-in hybrid vehicles, and enhanced geothermal systems, where underground heat is converted into electricity. Smart-grid technology lets utilities more efficiently manage electricity on the grid. And through smart meters and in-home displays, it lets consumers better understand and control home energy use. GE and Google will work on utility software to make the grid more efficient, and on software for home smart-grid equipment, Immelt said. Similarly, the two firms will develop software to help utilities better control plug-in hybrid cars, which can be used to deliver power onto the grid during peak times.

A flexible power grid is important because some researchers have concluded that an onrush of plug-in vehicles could strain the grid and lead to construction of more power plants. In the area of geothermal, GE and Google will create visualization software and power conversion technology.

"A total failure of political leadership"

Google recently invested in geothermal startups, while GE does not have a large business in this area now. Public-private line In discussing policy and technology, Immelt and Schmidt said that the clean-energy field has been underserved. Immelt noted that the energy business typically

spends about 1 percent of revenues in research and development, compared to 7 percent in health care. Congress is currently debating measures to open up more oil and gas drilling off the coast of the U.S. this week. But existing tax credits for investments in renewable energy projects are set to expire at the end of this year, which energy executives say is slowing the industry and pushing renewable energy companies to other countries. Both Schmidt and Immelt said that the government needs to play a more active role in setting an energy policy that promotes diverse energy sources and environmental protection. GE executives have lobbied regularly in Washington for the extension of the renewable energy tax credit. The company is invested in several different energy businesses, including natural gas, so-called clean coal, and nuclear. But Immelt said that the renewable energy business needs a 10-year tax credit, which would serve as a catalyst for the industry and could then be phased out. "I'm a lifelong Republican. I'm a believer in free markets," he said. "I think we worship false idols over time. There is no such thing--in all the businesses we do--that government doesn't play a role as a catalyst." Schmidt last week said there was "a total failure of political leadership in addressing climate change, and on Wednesday said that government spending should target socially responsible programs. Google's green gene Although it's not directly related to its core search business, Google and its top executives have been active in the renewable energy business. Last year, its Google.org philanthropic arm launched a program called REC renewable energy less than coal, to make clean energy more cost-competitive. So far, Google.org has invested altogether tens of millions of dollars in wind, solar, and enhanced geothermal startup companies. Last year, it filed a patent for a floating data center that would be powered primarily by wave energy. GE, which touts its Ecomagination green-technology initiative, is heavily invested in energy, water, and energy financing.

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GOOGLE & G.E. (continued)

how two giants of business plan on shaping our future

Google and General Electric said on Wednesday that The two executives gave few details of their planned collaboration. In an interview after their presentation, Dan Reicher, director of climate change and energy initiatives at Google.org, an operating unit of Google, said the effort was in its planning stages and did not have a set budget.

"All this talk about renewable energy will not be realized if we do not build substantial additional transmission capacity," Mr. Reicher said.

Without additional capacity, Mr. Reicher said, it would not be possible, for example, to get power from a solar plant in the Mojave Desert to Los Angeles, or from a wind farm in the Dakotas to Chicago. Mr. Reicher said that environmental standards, overlapping state and federal regulations and other policy issues were among the biggest impediments to building additional transmission capacity.

Google and G.E. are also discussing how to combine their respective software and hardware expertise to enable technologies like plug-in hybrids on a large scale and to accelerate the development of geothermal energy.

For Google, the partnership with G.E. is part of larger set of energy initiatives, including direct investments in green technology to help develop renewable energy that is cheaper to produce than coal-generated power. For its part, G.E. has made a large bet on green energy technologies, an initiative the company calls Ecomagination.

"we all receive an electricity bill once a month that encourages little except prompt payment. what if, instead, we had access to real-time information about home energy use? what if our flat screen tvs, electronic equipment, lights and appliances were programmed to automatically adjust to save money and cut energy use? what if we could push a button and switch the source of our homes' electricity from fossil fuels to renewable energy? what if the car sitting in our garage ran on electricity the equivalent of $1 per gallon gasoline and was programmed to charge at night when electricity is cheapest"

Green Journal

RENEW"S MONTHLY TIDBIT:

College Students Find Semester in the Wild an Eye-Opening Experience

If you've been wondering where you can spend a semester of college sleeping among the trees and finding a way to discover how much you don't need to buy to be happy, then St. Lawrence College in NY has just what you've been looking for, complete with bleach to treat the water from Lake Massawepie.

Of course, the neighbors include a pair of bald eagles and a couple of beaver, and the yurt village in which they live for the semester serves as their entire campus. With professors making the hour drive from the main campus to hold class in a yurt that comes equipped with a wood burning stove, though students have been known to not even turn it on even in the face of temps that can reach into the teens.

And you'll be cooking all of your own food purchased from a nearby local farm, which means there won't be any late night runs for Taco Bell or visits from the pizza delivery guy either.

But some of the coursework you'll be focusing on includes a total immersion in the natural world, a crash course on survival in the wild, and discussion of the connection, or lack thereof between consumerism and the general level of happiness a person achieves in life.

Who knows, perhaps this unique Adirondack semester in the wild is just right for you?

Fake Lawns Are Getting More Eco-Friendly

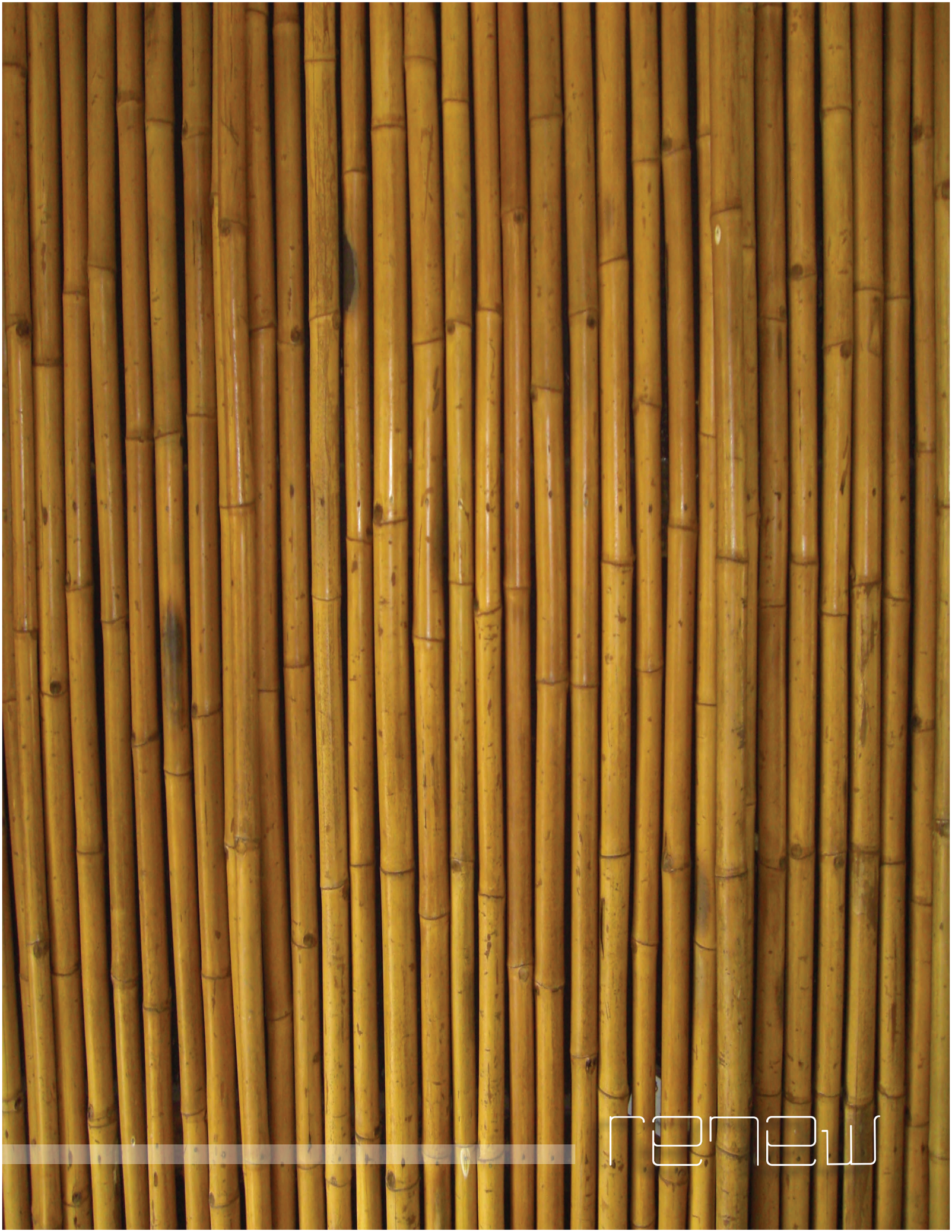
Lawns are a waste of water and space for the most part. And when living in drought stricken places like California, lawns seem even more wasteful. However, they're attractive, a soft surface to play on, and keep dust down.

To try and provide the good parts of a lawn without the bad, ForeverLawn has created a very realistic fake grass. Not just one, but twelve versions that are specific to various user needs.

At first glance at ForeverLawn's booth at West Coast Green, I have to admit I rolled my eyes. Visions of Astroturf, neon green hard surfaces, wasted petroleum and carbon emissions flashed before me. But I had to ask about it and I'm glad I did.

ForeverLawn is actually very realistic looking, and feels very soft. It has an antimicrobial webbing on the back to keep germs at bay. Okay, all this is great, but what makes all this plastic eco-friendly?

Turns out that the grass blades are made from recycled plastics used for water bottles and the like, the padding between the blades and webbing is soy-based, and the webbing itself if 100% post-industrial recycled plastics. In total, about 75% of the product is comprised of recycled materials, and at the end of its very long life, it is 100% recyclable.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