



The Catalyst Project Igniting Texas' New Energy Economy



**THE
CATALYST
PROJECT**

THE CATALYST PROJECT is a coalition of business, advocacy and policy groups dedicated to one simple mission: Putting Texas' role in the new energy economy at the top of the state legislature's priority list.

This paper is a distillation of interviews with more than 20 experts from across Texas and the U.S., representing investors, regulators, entrepreneurs, academicians, policy analysts, advocates and elected officials. Interviews covered a broad range of issues, but each interview began with the same basic question: What can the state of Texas do to seize the new energy economic opportunity before us?

We hope this document will serve as a discussion guide as Texas prepares for what could turn out to be the most consequential legislative session in recent history.

This paper was written by Colin Rowan, a partner at I&O Communications, an Austin-based public affairs firm. Funding for this effort comes from I&O Communications, Environmental Defense Fund and the Energy Foundation.

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Interviewees

Dr. B.J. Stanbery *CEO, HelioVolt*

Pat Wood *Principal, Wood3 Resources*

Steve Taylor *Director, North America Corporate Affairs, Applied Materials*

Pike Powers *Of Counsel, Fulbright & Jaworski, LLP*

Dr. Michael Webber *Associate Director, Center for International Energy and
Environmental Policy, University of Texas at Austin*

Mark Rose *CEO, Bluebonnet Electric Cooperative*

John Berger *CEO, Standard Renewable Energy*

Joel Surface *Entrepreneur in Residence, Kleiner Perkins Caulfield & Byers*

Christopher Hughes *Attorney, Brown McCarroll, LLP*

Karl Rábago *Director of Government and Regulatory Affairs, AES Wind Generation*

Michael Rollins *President, Greater Austin Chamber of Commerce*

Patricia Glaza *Executive Director, Clean Technology and Sustainable Industries
Organization (CTSI)*

Greg Wortham *Mayor, Sweetwater, Texas*

Paul Sadler *Executive Director, Wind Coalition*

Lee Walker *Entrepreneur*

Krishna Srinivasan *Partner, Austin Ventures*

Isaac Barchas *Director, Austin Technology Incubator, University of Texas at Austin*

Jackie Roberts *Director of Sustainable Technologies, Environmental Defense Fund*

Jim Marston *Regional Director (Texas) and Director of State Climate Initiatives,
Environmental Defense Fund*

Robert King *President, Good Company Associates*

Ari Swiller *Founder, Renewable Resources Group (RRG)*

We want the pacesetters and the jobs that follow them. We haven't missed out on an American economic boom in 100 years, and we don't want to start now.



Texas and the New Energy Economy

In 1983, Microelectronics & Computer Technology Corp. (MCC) put Austin on the global technology map.

A year earlier, 12 technology companies financed and formed the first consortium for high-tech research and development, primarily to mount a defense against the Japanese, whose companies were quickly establishing their country as the epicenter of super-computing. More than 50 cities were considered for MCC's headquarters, and in 1983, Austin was announced as the winner.

Pike Powers, an Austin attorney who was part of the MCC project and continues to be a driving force behind Austin's economic development efforts, told a local paper in 2004 that the announcement did more than proclaim the creation of MCC—it launched Austin onto the front pages of the New York Times and the Wall Street Journal. “It put us on everyone's due-diligence list,” Powers says.

Indeed. Austin is one of the nation's most recognized high-tech hubs, and the companies that formed here or moved here did so, at least in part, because MCC was here first to catalyze the tech boom in

Central Texas.

An outside threat can be a real motivator. By most accounts, concern about international competition was the driving force behind MCC's creation. It's also a great case study about how cooperative competition can accelerate an entire industry. But more than that, MCC is a clear example of the lasting economic effect that can be realized when a region becomes recognized as a thought leader within an emerging industry.

Over the last 100 years, Texas has done quite well by leading (or aggressively following) the technology advancements that have driven the American economy. Clearly, we've done well in oil and gas. We led in the transistor market. We led the space race. We led with semiconductors, telecommunication and the Internet. In fact, you'd be hard pressed to find a technology innovation from the 20th century that didn't play a central role in Texas' population and economic boom.

So what is America's next emerging technology? Where will its pioneers, innovators and entrepreneurs call home? Where will the jobs go?

“It's going to be who can out-green whom for everything—construction, carbon emissions, whatever.... So, if the message is that clear, and the economics and the dynamics are that clear, you get ahead of it and stay ahead of it and work hard not to get toppled off the horse.”

— Pike Powers

“The world has changed. Republican and Democratic leaders across the country are pouncing on this opportunity. It’s not a partisan issue anymore—Texas just hasn’t gotten the memo.”

— Jim Marston

The world has already answered the first question: energy. We need more of it, and the technology of the past—for many reasons—won’t be what powers our future.

So, what about the other questions—the pioneers, innovators, entrepreneurs and jobs? They are why we created the Catalyst Project, and why we’ve developed this document.

We want the pacesetters and the jobs that follow them here in Texas. We haven’t missed out on an American economic boom in 100 years, and we don’t want to start now.

Billions of dollars are being invested in “new,” “green” or “clean” energy companies across the country. While some Texas businesses are benefitting, most investment is currently going to companies in states that have national reputations as leaders in this industry and are aggressively creating tomorrow’s energy markets. A massive economic opportunity awaits Texas, but we have not yet embraced the global acceptance of the new energy economy. Texas is not competing nor advocating for these businesses like California is, like New Mexico is, like New Jersey is. But we should be.

“The world has changed,” says Jim Marston of the Environmental Defense Fund. “Republican and Democratic leaders across the country are pouncing on this opportunity. It’s not a partisan issue anymore—Texas just hasn’t gotten the memo.”

Thousands of future jobs, billions in future profits, and the economic relevance of our state are all at stake.

More than 20 years after MCC, Powers is among Texas’ most active promoters

of the new energy economy. “The bottom line is, we’re never going back to the way it used to be,” he says. “It’s going to be who can out-green whom for everything – construction, carbon emissions, whatever, you name it. It’s going that way. So, if the message is that clear, and the economics and the dynamics are that clear, you get ahead of it and stay ahead of it and work hard not to get toppled off the horse. It’s about leadership, it’s about vision, it’s about execution—and it’s imminently doable with the right attitude.”

But that attitude hasn’t taken hold yet. Lee Walker, the first president of Dell Computer and one of Texas’ most successful serial entrepreneurs of the last 25 years, remembers the impact that MCC had on Texas’ global stature.

“MCC was so interesting because it was a collaboration between businesses, government and civic leadership,” Walker said. “The CEO of MCC, Bob Inman, was an icon to many of us. When we heard that he was going to head MCC, it was explosive news. I remember how excited I was personally. There were tons of substance to that effort, and the buzz was several multiples of the substance. What we are missing today is the kind of focus and commitment we had in that effort, the coordination and the leadership.”

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Sweetwater: Opportunities and Challenges

For the past few years, Sweetwater Mayor Greg Wortham has been drinking from a fire hose. It all began when former Enron executives began the Sweetwater Wind Project. “This little project started with 25 turbines,” Wortham says. “Now, it’s the second-largest wind project in the world. And they kept coming, just one after the other.”

This vast, rural pocket of Texas is buzzing—or spinning—to the tune of a half-billion dollars a year in salaries and royalties generated by the booming wind power industry. “We’ve doubled our motel space,” says Wortham. “We have new restaurants, and all the businesses already here are thriving. We have 20 or 30 companies with ‘wind’ in their name. We have more than 1,100 wind jobs in Nolan County alone.”

Nolan County has about 15,000 residents. The population is growing, and the wind industry is giving natives good reason to stay and, in many cases, to come back.

“Until about four years ago, the only option for students was to graduate and leave,” Wortham says. “Now, they can

stay here and work immediately, or go off to college and bring their knowledge and skills back to open a business. Accomplished people who have been executives in Dallas, New York or Austin want to move back home.”

Sweetwater is the antithesis of the national economic slump. “It’s creating a workforce shortage,” says Wortham. “We could use another 500 families here today. We would like to have 300 new houses. Who would have thought that would happen here?”

What has happened in Sweetwater is a prime example of local leaders seizing an economic opportunity created, in large part, by the state’s mandated Renewable Portfolio Standard—the percentage of the state’s total energy output that must come from clean, renewable sources. Advocacy groups promoted the RPS heavily during the legislative deregulation of Texas’ electricity market in 1999, and wind energy has been the most prolific beneficiary. Texas now produces more wind power than any other state and reached its 2015 target years ahead of schedule.

But Sweetwater is also an example of

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“Where are all the Texas developers? Wind has been a tremendous success story for Texas, but to suggest that we did it all exactly right is naïve, at best. And to suggest that we can’t learn from it as we go forward is ridiculous.”

— Paul Sadler

how the state stopped short of seizing the full economic opportunity created by its mandate. Despite our proud perch atop the list of wind-generating states, Texas’ recruitment of the supply chain industries that provide lasting economic performance has been underwhelming. Our state may still be installing wind equipment faster than the rest of the country, but the vast majority of that equipment is being designed, manufactured and assembled in another state or country and imported to Texas.

Former state representative and current executive director of the Wind Coalition, Paul Sadler, lists the absence of wind manufacturers in the state among Texas’ greatest missed opportunities of the wind boom. “Where are all the Texas wind equipment manufacturers?” Sadler asks. “Wind has been a tremendous success story for Texas, but to suggest that we did it all exactly right is naïve, at best. And to suggest that we can’t learn from it as we go forward is ridiculous.”

The Texas wind boom began locally—before deregulation and before legislators set any target—when Governor Mark White, Land Commissioner Gary Mauro and Lower Colorado River Authority (LCRA) General Manager Mark Rose (now CEO of Bluebonnet Electric Cooperative) announced the Delaware Mountain wind project. “Within months of the announcement,” Rose says, “Central and Southwest announced they were going to have a significant wind project, Texas Utilities announced a project, and the rest, as they say, is history.”

Sweetwater has certainly benefitted from lawmakers’ renewable energy mandate, but local leaders still consider it a

local effort.

“We boomed through local initiative,” Wortham says. “We could count that 25 percent of all GE turbines in the world and about a third of all Mitsubishi turbines in the world are here, so we can go to other companies and say ‘You have to be here.’ But we weren’t getting support from our state leadership.”

What does Wortham mean by “support?” That’s exactly the question the Texas Catalyst Project posed to Wortham and more than 20 experts around the state and across the nation. We interviewed elected officials, venture capitalists, academicians, representatives from wind and solar companies and trade associations, electricity providers and economic development experts. And we began with one basic question: What can the state of Texas do to seize the new energy economic opportunity before us?

This document is the integration of those interviews. We searched for striking similarities of opinion and drastic disagreements. What we found was strong agreement on some fundamental principles our state can implement in an extremely short timeframe.

“I think the various new energy technologies all have advocates out there,” says HelioVolt CEO Dr. B.J. Stanbery. “There is an opportunity to pull those pieces together into a policy package which could then gather enough support to actually be turned into policy action in the next meeting of the legislature. That has not been done.”

Wortham adds, “Every state leader needs to collectively launch into this—not sit back and watch it happen, or ignore it or oppose it.”

Growth states like California, New Mexico, Colorado, Iowa and Minnesota are pursuing new energy investment far more aggressively than Texas.



The Ready Will Win

Change is coming. The world economy assumes a shift to a new energy economy is inevitable. Over the next few decades, hundreds of millions of Chinese and Indians will enter the first-world economy, and their emergence will be fueled by something. The rise and fall of oil is setting new records monthly. Countries around the globe—and many U.S. states—are adjusting their economies to fit within the confines of inevitable carbon regulation. Whether we attribute the end of the world’s love affair with oil to geopolitical conflict or to the acceptance of climate change, few people would suggest that “energy” means the same thing today as it used to.

Just ten years ago, the renewable energy industry was the domain of progressive policymakers and environmental activists. Clean fuels and new technology requiring less energy—be it electricity or oil—were seen as a way to ease local air pollution or mitigate protests by environmental groups. What a difference a decade makes.

Surely, this shift will shake up the balance of power. Globally, China and other

developing countries will play a greater role in the global energy market. Fossil fuel-dependent industries—such as auto manufacturers and electricity generators—will adapt or perish as the cost of energy (and its pollution) rises. Regional economies will have to adjust to maintain their relevance in the new economy. For the change-averse, the future presents palpable anxiety.

But for optimists and entrepreneurs, this change presents an opportunity for the greatest creation of wealth and economic activity the world has ever experienced.

To be sure, we will be dependent upon fossil fuels for decades to come. But businesses, industries, utilities and nations will all need new energy resources to power their growth. They will need new technology, new innovation and, most importantly, new workers. If America’s been looking for the “killer app” that will drive us into the next century, the global energy challenge offers something few other industries can: need. Power isn’t a convenience; it’s a necessity. Calling the “new energy economy” an emerging opportunity is the

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— Jackie Roberts

understatement of the century.

The technology, invention and workforce to fuel the new energy economy will come from somewhere, and the competition for leadership status is already underway. Denmark, having turned to wind power out of necessity decades ago, is now the world's leading exporter of wind tech-



“We need to get smart about the opportunities that are here, because this has the opportunity to provide us with well-paying jobs—from manufacturing all the way out to installation and service—and do so for a long, long time.”

—Steve Taylor

nology. Germany is a global case study of solar energy. Though few would disagree the U.S. is behind the curve, there are bright spots across our country: billions of dollars are pouring into new energy companies in California, Colorado, Massachusetts, New York and others; regional economies are competing for clean energy manufacturing and R&D companies; states are opening their checkbooks to lure companies to their turf; and local communities are banding together to create incentive packages. The world is “going low-carbon.”

“This is going to be a race,” says Jackie Roberts, director of sustainable technologies for Environmental Defense Fund in Washington. “Whoever is first in line and starts setting up clusters of suppliers, training programs and the other businesses that attract manufacturers are going to be the ones who own this new market.”

And Texas, the unquestionable U.S. energy capital of the last century? So far, we’ve been a bit player in the battle for new energy companies.

“You have to applaud the overall efforts of people like Jerry Patterson, as the Land Commissioner, in the wind energy category, and Governor Perry has a deep commitment to economic development,” says Austin attorney and long-time economic development leader Pike Powers. “He (Perry) understands you have to make the right kinds of investments in order to drive a future economy of a region. But statewide, the energy piece, so far, hasn’t been fully and properly addressed.”

And the lack of a statewide approach has resulted in the lack of a national new energy reputation.

In September, a group called The Center for American Progress issued a report called *Green Recovery: A New Program to Create Good Jobs and Start Building a Low-Carbon Economy*, which proposes a program to invest \$100 billion to create green-collar jobs in more than 30 states. Though the proposal is hypothetical, it’s a useful barometer of the “national perception” of where the new energy economy boom will occur. And it’s a powerful statement about Texas’ renewable energy reputation: not only is Texas not one of the 34 states where this hypothetical \$100 billion would be invested, Texas isn’t mentioned even once in the report. Our state is completely absent from the national discussion.

In reality, money is being invested,





and despite having a laundry list of attributes that make us a prime location for new energy development, Texas is getting whupped by states that have much less to offer, but that are trying harder. Growth states like California, New Mexico, Colorado, Iowa and Minnesota are pursuing new energy investment far more aggressively than Texas. Seeking ways to retain their economic relevance, states like Pennsylvania, Michigan and Ohio recognize that green manufacturing represents an opportunity to “repurpose” their capital investments and retrain their workforce. Whether it stems from need or desire, other states are ramping up for what will

be the biggest economic competition in modern U.S. history.

At our current pace, when the carbon gun goes off and the race to the new energy economy really begins, other states will be rounding the curve before Texas gets out of the blocks.

Some disagree. Kleiner Perkins’ Joel Serface believes the race is already underway. “That race started more than a decade ago in California,” Serface says. “It has started in New Mexico. It started 30 years ago in earnest, and restarted three or four years ago in Colorado. Oregon is kicking the pants off of Texas in bringing in more wind turbine and solar companies.”

“Texas is usually smart about this,” said Steve Taylor, director of North America corporate affairs at Applied Materials. “We need to get smart about the opportunities that are here, because this has the opportunity to provide us with well-paying jobs—from manufacturing all the way out to installation and service—and do so for a long, long time.”

Despite having a laundry list of attributes that make us a prime location for new energy development, Texas is getting whupped by states that have much less to offer but that are trying harder.



People in California look at Texas and wonder when it will wake up and realize how easily it could win this race.



Texas' Inherent Competitive Advantages

Back in the 1980s, when Texas was competing for MCC, then-Governor Mark White told Pike Powers, “I don’t want to finish second, and I don’t want to win by an inch.” He wanted to blow the competition out of the water, and experts we interviewed believe the margin of victory in the fight for new energy companies should be just as dramatic. More than any other state, Texas possesses natural, legislative and business advantages that make it a logical new energy leader. The list of attributes that make Texas an attractive candidate for new energy companies reads like a location scout’s checklist.

“People think of Texas as a very logical place to set up a lot of alternate energy companies because of the tremendous energy talent here,” says Krishna Srinivasan, a partner at Austin Ventures. “We have old energy expertise. We have lots of good technology people from relevant industries like semiconductors, material and systems management. We have infrastructure and finance expertise. So there are several impressive ingredients here already.”

The list is so strong, in fact, that several interviewees expressed frustration that

Texas isn’t already promoting it nationally and globally.

Natural Resources

Texas’ natural resources are easy to inventory. We have ample land for manufacturing facilities, as well as the vast remote areas necessary for large-scale wind and solar deployment. Our sun resource is among the best in the country, and our wind resource compares favorably with other states. We possess among the greatest geothermal resources in the continental U.S. Any one of these would be an advantage in attracting investment; Texas has all of them.

Project Development

The new energy economy will require “real companies” to make things and put them in the ground. Unlike the Internet boom, this can’t be done in a garage.

“What Texas can do like no one else is put steel in the ground for large-scale projects over a long timeframe, make them profitable and make them work,” said Michael Webber, professor of mechanical engineering at The University of Texas at Austin. “This is not the Internet revolution. This is not a couple of entrepreneurs

“This is not what happened in the late ’90s in California. It isn’t going to be funded by venture capital, it’s going to be funded by project finance and infrastructure. We are talking about multi-billion dollar infrastructure projects and large capital assets.... No one knows how to do that better than Texas.”

— Dr. Michael Webber

inventing some cool technology that gets adopted at an 80 percent annual growth rate without building a factory. This is not what happened in the late '90s in California. It isn't going to be funded by venture capital; it's going to be funded by project finance and infrastructure. We are talking about multi-billion dollar infrastructure projects and large capital assets. When it comes down to it, no one knows how to do that better than Texas."



Texas has a 150-year history of massive infrastructure projects. We know how to do this, do it quickly and do it well.

Business-friendly Environment

Legislators brag about Texas' business-friendly environment, and with great reason. They have a history of either proactively helping Texas businesses or getting out of their way. Environmental regulation that, in the past, has permitted the speedy approval and construction of dirtier energy sources has enabled a lightning-fast construction process for the booming wind industry.

"Texas has a huge advantage because you guys are willing to drill holes and do whatever it takes to get stuff done," said Ari Swiller, a partner at Los Angeles-based Renewable Resources Group.

Whether it will be a carbon sequestration infrastructure, a thousand new wind-mills, a utility-scale solar installation or

new transmission lines, America's new energy industry will have to move dirt, pour concrete and build stuff. Texas has always been "build-friendly," and not having to navigate miles of red tape has significant appeal.

"The state is very good at getting out of the way," said Christopher Hughes, an attorney who represents energy clients for Brown McCarroll. "Texas is an excellent business market. It is an entrepreneur's dream here. But in a fledgling industry like renewable energy, Texas needs to be a little more aggressive to make sure we are a 'first starter.' Getting out of the way won't get us ahead."

Energy History

California's technology history and reputation as a pioneer in environmental initiatives have helped catapult it to the top of new energy investment lists. But Iowa? Minnesota? New Mexico? Vermont and other smaller states have developed reputations for being "renewable leaders"—ahead of Texas. Vermont ahead of Texas on energy? Energy is our life-blood.

Underscoring our future potential is a century of energy R&D, manufacturing and delivery. Texas' universities are among the nation's best in petroleum engineering. You can't walk down the street in Houston without bumping into someone whose family worked in the oil business. We've drilled wells, installed pumps, laid pipes and delivered energy to the nation for a century. Coincidentally, many of the energy needs of the future will depend upon mastery gained in the past. Carbon sequestration will require expert understanding of geology and oil well operation. West Texas wind will require transmission lines. Tomorrow's electricity delivery

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—Steve Taylor

system will require a rethinking of utilities’ business models and the reinvention of our energy information technology systems.

“No one questions Texas’ position as the U.S. energy capital of the 20th century,” says Swiller. “And if Texas were to leverage that history into an advantage in the new energy economy, the competition would quiver. People like me in California look at Texas and wonder when it will wake up and realize how easily it could win this race.”

Transportation Network

Texas has one of the country’s most robust and accessible transportation networks. Whether via our ports, railways or highways, it’s easy to get products in and out of Texas.

On any given day, wind turbines and pedestals arrive in Texas ports, are loaded onto 18-wheelers and shipped to West Texas. In the future, they will be joined by shipments of solar panels, geothermal pumps and state-of-the-art carbon-capture equipment—all imported into the Texas market.

But trucks, trains and ships run both ways. So rather than unloading them here and refilling them with our money, we could take advantage of our transportation infrastructure to export that technology to the rest of the country and world. Our proximity to the wind belt and sun belt and proximity to either coast, as well

as our shipping channels to other nations, are invaluable advantages in a tech-driven energy industry.

“We have good railroad infrastructure,” says Pat Wood, a former commissioner of the Public Utility Commission of Texas and an architect of the state’s electric-de-regulation effort. “We’ve got good highway infrastructure to move all this equipment around, and we have good ports to bring in the material we need to sell to the rest of the world. Honest to God, the infrastructure here is just superb, and our location on the globe is great.”

Universities and Colleges

Texas universities have supplied generations of engineers who powered our success in the oil and gas industries and who have begun to emerge as national leaders



in renewable R&D efforts. Our universities helped launch the semiconductor and Internet revolutions and can play an equally important role in defining Texas’ future place in the new energy economy.

Not only will our universities be an advantage in the new energy competition,

but they'll also be a necessity. Texas simply can't compete globally without integration of our flagship universities.

The intellectual piece of the education infrastructure is in place, but our higher-ed community lacks a visible role it could—or wants to—play in fueling our future economy.

In his “State of the University Address” on September 17, 2008, University of Texas President William Powers outlined the University’s legislative agenda. It included, in order, the following priorities:

- (1) improving the University’s competitiveness regarding salary and research support packages to attract and retain faculty;
- (2) improving support packages to attract graduate students;
- (3) getting more space; and
- (4) easing admission requirements.

All of these are important issues for UT and all of these will help UT compete for talent. But none deals with defining the university’s role within the changing global energy market. In fact, energy wasn’t even mentioned in Power’s address.

“We need to commission the university presidents to explain what they are going to do to make this happen,” says Karl Rábago, a former commissioner of the Public Utilities Commission of Texas, now with AES Wind Generation. “I would do this Washington style; I would ask the president of every major university to sit on a panel and ask them the question, ‘Is a clean energy revolution coming?’ If they say, ‘Yes,’ then ask, ‘What should we do about it?’”

Texas’ network of community colleges is also a potential asset. Texas has more degree-granting institutions than all but

three other states, and most of them are not mega-schools like UT and A&M. We have more than 70 community colleges that industry experts say will be critical training facilities for the influx of green-collar jobs that will service the new energy economy. Integrating them into a visible and aggressive regional workforce strategy—as other states are doing—would help develop a home-grown talent pool and send strong messages about Texas’ commitment to new energy workforce development.

Independent Grid

Just as new energy companies are attracted to regions with workforce and natural resource advantages, they need an energy infrastructure that will let them (or their customers) deploy new sources of energy. Having its own electrical grid is a huge advantage for Texas.

“One of the reasons we are in a unique position is because we are the only state with its own grid,” HelioVolt’s Stanbery says. “For that very reason, I think Texas has a unique capability to create an environment that will lead to the rapid growth of clean-tech industry, and particularly the clean electrical power industry in the state. Above all other competitive advan-

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—Ari Swiller



tages, having our own grid is the most powerful.”

The rest of the country has to navigate significant federal regulatory hurdles be-



fore modifying their electric grid—but not here in Texas.

That means Texas can swiftly implement changes to the grid that new technologies will need to succeed. We can test tomorrow's technology in real-world environments without federal approval. Expansion of wind will require new transmission lines. Solar will require improvements to the grid that permit distributed generation. Many of the improvements needed to deploy the "grid of the future" can be wholly implemented by Texas decision-makers.

"Our grid is our most unique advantage," says Wood. "That's certainly something I have been pushing. It's a very big advantage."

Opportunity Awaits

According to Brown McCarroll attorney Hughes, Texas' built-in advantages "make for an extremely dangerous proposition for other states." This sentiment echoed through every interview.

"The message I am trying to deliver here is, we are really the only state that could create this kind of environment and that will draw the businesses here to create the systems that take advantage of that ability," says Stanbery.

"All it really takes is some focus on the potential," says Applied Materials' Steve Taylor. "Solar, for example, holds the po-

tential not only to alleviate the peak energy issues that pop up in Texas during the summer, but also to create thousands of manufacturing jobs, as well as thousands of installation and maintenance jobs. It really is a remarkable opportunity, and it's the kind of thing a lot of other states can't compete on."

"We created a nice ecosystem here for the oil and gas industry," Standard Renewable Energy CEO John Berger says. "We need to think through how that happened and replicate it in some way for the renewable energy industry."

In brief, the two essential principles echoed time and again during our interviews were articulated succinctly by HeliVolt's Stanbery. "I divide the universe of what public policy can achieve in the state of Texas to create a clean-tech industry into two parts," Stanbery says. "The first is the market piece; the second is the economic development piece."



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—Dr. B.J. Stanbery

The wind boom that spread across Texas serves as proof that legislated goals and targets send a strong signal to the market.



The Mother of All Markets

We might not have the most people of any state, but we definitely use the most energy. Texans use, per capita, up to twice as much energy as our neighbors in other states. But even if we reduce our per-capita consumption, growth projections suggest Texas is going to need more energy options—a lot more—far into the future. We are the mother of all domestic energy markets.

This reality might make some environmentalists and energy planners cringe (for different reasons), but it is music to the ears of entrepreneurs and corporations intending to power the next century.

“We have 26 million Texans,” says Robert King, president of Good Company Associates. “We have a demand for 30 percent more electricity than California. We are very energy-intensive, we have a lot of energy-intensive industries. We have hot territory and cold territory. So anybody with a good energy idea has a huge potential market right here.”

Of all the topics talked over with interviewees, none enjoyed as much unanimity as did the importance of a large, ready and eager consumer market and our state’s ability to spur it.

“State government can send very clear market signals to industry,” says UT professor Dr. Michael Webber. “Because what sets Texas industry apart is consistent adherence to fundamental, sound business principles, which means they respond to market signals. If government sends a clear market signal that it is serious and intent on getting Texas on a transition toward a cleaner energy path, that market signal will be very effective.”

“The technology is out there,” Stanbery says. “We are not waiting for someone to invent something. We are just waiting for it all to be pulled together and for people—those political leaders who really want to provide leadership and for the advocacy organizations that really want to see a solution—to say, ‘Look, it’s right here.’ If we create that market, the market will respond.”

In fact, it is more than a little ironic that Texas’ lack of aggressiveness in energy efficiency and clean tech makes it one of the most fertile markets for these products. “This may sound counter-intuitive,” says EDF’s Jim Marston. “But because we have not done much to date, there is a lot of low-hanging fruit out there.”

“If government sends a clear market signal that it is serious and intent on getting Texas on a transition toward a cleaner energy path, that market signal will be very effective.”

—Dr. Michael Webber

“Because we have not done much to date, there is a lot of low-hanging fruit out there.”

—Jim Marston

“Targets make these businesses necessary, and that’s what brings investors in. They can have faith that the market will be there, that it’s not as big a risk.”

—Jackie Roberts

AES’ Karl Rábago disagrees, though somewhat humorously. “We’re not talking about low-hanging fruit anymore,” he says. “It’s already fallen. It’s sloshing about around our feet.”

Applied Materials’ Steve Taylor is a vocal, active promoter of his company’s efforts to evolve into the solar market and to keep its capital resources in Texas. The focus, says Taylor, should be demonstrating to investors and companies that our state is committed to this emerging industry. “I think there needs to be incentives to encourage people to put the jobs here and build the plants here, and make sure Texas remains the center of the energy universe,” he says. “It is now, but as energy evolves into a more renewable-based future, we want to keep Texas at the forefront. Having an available market here is key to that.”

What Texas has done with wind demonstrates the scope of renewable energy’s potential for our state.

“We look really small on some map that shows just our renewable percentage,” says Sweetwater Mayor Greg Wortham. “But in terms of megawatts, we’re blowing away the rest of the country. We’ve got 6,000 megawatts now and will have 10,000 by the end of the year. The entire U.S. has 18,000.”

With wind, Texas entrepreneurs and local leaders moved before state leadership, hoping state action would follow. When the LCRA announced the Delaware Mountain wind project, Mark Rose recalls, “There was no plan, there was no guidance, there was no incentive. There was just public power saying, ‘We’re going to do it because we think it’s the right thing.’ But once legislators passed Senate Bill 7 and the renewable mandate became a part of deregulation, it exploded. That is

the kind of legislative treatment that puts us in the position to lead.”

By all accounts, Texas became the leading wind producer in the U.S. in under 10 years because of a government mandate for renewable energy called the Renewable Portfolio Standard (RPS). During the 1999 electric-deregulation process, the Texas Legislature mandated that 2,000 new megawatts of Texas’ total electricity generation had to come from renewable sources. Because it was the fastest and most affordable to deploy, wind won. The target was increased in 2005, and the state has surpassed the target set for 2015.

Simply put, Texas wouldn’t be the champion of wind power without the RPS mandate. And the wind boom that spread across Texas—the one Mayor Wortham harnessed in Sweetwater—serves as proof that legislated goals and targets send a strong signal to the market.

EDF’s Jackie Roberts considers mandates among the strongest market signals. “Targets make these businesses necessary, and that’s what brings investors in. They can have faith that the market will be there, that it’s not as big a risk.”

Her EDF colleague Jim Marston, who helped shape Texas’ RPS requirement, believes the RPS should serve as a model for further efforts to establish renewable markets within our state.

“The RPS created a floor for renewable energy in Texas,” Marston says. “First of all, it got us cleaner energy. But even more importantly, the market it created drove down the costs of new technologies and made us a leader in wind energy. Now, we are not only generating a lot of wind energy for our state, but we are building some of the transmission needed to export it outside Texas.”

The Texas Enterprise Fund and the Emerging Technology Fund could be major catalysts for new energy economic investment in Texas.



Realizing Texas' New Energy Potential

Unlike the late '90s when Texas was a first-mover on wind, many other states are now advancing local and regional efforts to develop the next generation of renewable energy. The new energy industry in California has grown substantially in the few years since lawmakers introduced and passed Assembly Bill 32—an economy-wide cap on carbon emissions and the most aggressive legislative market signal by far. In the months following the bill's introduction in Summer 2004, the number of “new energy” companies receiving venture funding began a steady and dramatic climb upward—as did the total amount of venture funding invested. These companies saw another dramatic spike once the bill passed. Now, as leaders in California are ironing out an implementation plan for AB32, companies are jockeying for market leadership (please see California chart on next page). As former LCRA leader Mark Rose put it when referring to the Texas' RPS target, “The minute the state mandates a target, the market pops up to meet it.”

Local and state leaders across the country are already pushing for a new energy

boom, and many are aggressively establishing their states or regions as epicenters of new energy by proving to industry there is a ready market nearby.

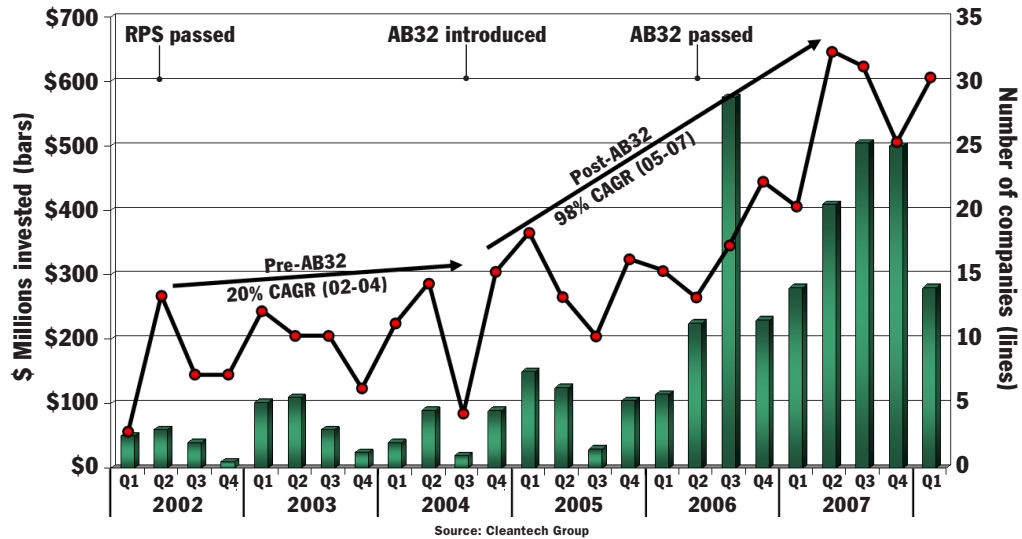
“If you listen to Governor Crist (Florida) or Governor Schwarzenegger, or other Republican and Democratic governors,” EDF's Jim Marston says, “they don't talk about this primarily as solving an environmental problem, although they care about that. What they talk about primarily is getting their state ahead of the game, about creating markets to get the venture capitalists, the investment bankers, the entrepreneurs investing in jobs and plants in their state, about being the leaders in making the new technologies the rest of the world is going to buy. Those who are first and best are going to win, and those who are laggards are going to have a hard time catching up.”

According to Applied Materials' Steve Taylor, that market leadership battle is being fought now in the solar industry. “Texas should want to be the state where the first large-scale solar panel manufacturing plant is built,” says Taylor. “That will happen in the next year or so. There will be a

“The minute the state mandates a target, the market pops up to meet it.”

—Mark Rose

California: The impact of Assembly Bill 32



“Texas should want to be the state where the first large-scale solar panel manufacturing plant is built...and it’s going to be hard to do if solar companies don’t think there are motivated customers close by.”

—Steve Taylor

mad race for second, but it’s the first location that has the potential to be the Silicon Valley of solar. Texas should want to be the first state where someone is willing to plop down a half-billion-dollar manufacturing facility, and it’s going to be hard to do if solar companies don’t think there are motivated customers close by.”

Recent Texas history suggests that success begets success in emerging industries. Austin boomed as a tech center not because scores of tech companies moved to Central Texas overnight, but because some early success stories demonstrated that the region had the talent pool and market to support legitimate market leaders.

“Austin became a great town in software after Tivoli,” says Austin Ventures’ Krishna Srinivasan. “Austin became a great semiconductor town after Crystal Semiconductors spawned a whole bunch of other companies. You need that initial mother lode of an interesting company that can spur other interesting companies that spawn from the smart people who ultimately gravitate around that interesting company.”

Most interviewees agreed an RPS alone won’t help Texas seize this opportunity’s

full potential. Indeed, even with an aggressive RPS, the full force of the wind boom hasn’t really hit Texas—and it might never. Our state might lead the nation in wind generation, with select towns and counties experiencing local success. But we did not attract the R&D initiatives that invent the technology, the manufacturing companies that make the equipment, or the vendors that service the industry once the turbines are spinning and the installation jobs move on. Though interviewees touted wind as Texas’ greatest renewable success story, it was also cited as our most recent economic development failure; we spurred a market, but we did not capture the industry and supply chain that will serve it.

At the center of that failure is our state’s lack of vision for the new energy market and its refusal to act as the industry’s economic cheerleader. In its defense, not everyone believed in 1999 that wind would become such a growth industry. But with 10 years of perspective and broad consensus today that renewable energy will be among America’s greatest growth industries, now is the time for Texas to reverse its momentum. State leaders—even those

who have not pushed for a new RPS—say they support new energy companies in Texas, and they have a chance to match their stated support with specific actions.

“I think parts of the state have a great buzz as very attractive (for clean energy) and new technology in energy,” says Michael Rollins, president of the Greater Austin Chamber of Commerce. “But when there is a lot of onsite visiting, it’s realized that’s not necessarily the climate state-wide.”

Some leaders have shown great prowess in wooing economic development projects to Texas. Governor Rick Perry is broadly applauded—by political allies and opponents alike—as a fierce competitor who doesn’t like losing economic development battles to other states. He’s good at the hard sell and seems to enjoy it.

But most interviewees agree that Texas’ recruitment strategy is piecemeal. We go after big deals as they present themselves, but we don’t have an overall strategy guiding the effort or an authoritative point person leading the way.

“I am not sure if the governor or his staff really understands how competitive places like New Mexico and Oregon and others are right now,” Pike Powers says. “He’s very good when he gets a real *‘mano y mano,’* New York, California, Oregon competition on the plate in front of him where it’s ‘this one’s up for grabs.’ But we need to be more broadly competitive, or we are not going to be in the hunt long-term.”

Governor Perry has led in an area that could be a boon to new energy recruitment—he created the Emerging Technology Fund (ETF) and the Texas Enterprise Fund (TEF). With hundreds of millions of dollars between them, both funds could be used more strategically to bring signifi-

cant new energy investments to Texas.

To date, the ETF has been far more aggressive in recruiting and retaining what can be described as new energy businesses, including more than \$15 million for Xtreme Power (power load leveling), Lynntech (hydrogen fuel cells), FutureGen (clean coal) and others. Of \$90 million in awards, this represents just over



15% of the total. Of course, more can be done, but this is a respectable beginning.

The Texas Enterprise Fund is a different story. Over five years and \$365 million in awards, only one grant has gone to a new energy company: Austin-based start-up HelioVolt. Over the rest of its five-year history, TEF has given energy grants, but none to anything resembling renewable energy or energy-efficiency companies.

Only \$8.55 million of the \$365 million total has gone to energy efforts. That’s slightly more than 2 percent; less than 0.3 percent has gone to new energy.

Naturally, a \$365 million investment in renewable energy wouldn’t mean that Texas won’t have to compete to lure industry here. On the contrary, it will help ensure that Texas can compete more successfully.

Two final economic development topics permeated these interviews. The first is the lack of a point-person at the state charged with articulating Texas’ new energy strategy, identifying strategic investment opportunities or even serving as the

“We don’t have to reinvent the wheel here; we just have to be even with everybody else, because we have so many other natural advantages.”

—Pat Wood

governor's go-to person on such matters. Texas must ensure that if a CEO of a solar company were to inquire about relocation opportunities in Texas, he would know whom to call and be confident when the call is answered, he will get strategic, articulate answers.

EDF's Marston recalls an encounter with former Texas Secretary of State Phil Wilson, who is well known for his promotion of renewable energy. Upon hearing that Wilson was leaving his position with the state, Marston asked him who he should call to get the state's position on new energy. "He paused," says Marston, "looked down for a second, and then told me he'd get back to me. Even he couldn't come up with a name. That told me an awful lot."

Finally, Texas doesn't seem to have developed a standard "New Energy Incentive Package." Rather, the state depends upon its "business-friendly" reputation and competes for companies as opportunities arise. Interviewees almost unanimously caution against a "recruitment package" strategy that places high expectations on wooing companies with tax breaks and giveaways. Rather, they argue that an attractive and aggressive incentive package is an enticement, a door-opener, a tie-breaker. Relocating to Texas must make long-term economic sense to the company, and executives want to know the state is firmly behind the industry's long-term success.

Even so, the lack of a marketable "New Energy Incentive Package" is a glaring competitive disadvantage. "Rightly or wrongly, it tells the world that Texas is not really serious about this yet," Kleiner Perkins' Joel Surface says. "We don't even

have a pitch packet. Companies see we don't have a comprehensive energy plan and they move on to other states that appear to really want them."

Fortunately, incentive packages aren't rocket science. One interviewee suggested a copy-and-paste approach. "Iowa has what I consider 'a finely tuned' economic development package," Pat Wood says. "This friend of mine who runs a wind blade company was wined, dined, courted and romanced by the governor and staff of Iowa to locate a wind blade manufacturing facility up there. Iowa gave a boatload of tax incentives and grants to this company, and their big expansion is going to be in Iowa because the government there really went out of its way to say, 'We want this business and these jobs to be here in Iowa, and we are willing to put our money up for it because, in the long-term, that's going to be good for our state.' I think that whatever they are doing in Iowa, we should do. I really think they are the best in the country right now. We don't have to reinvent the wheel here; we just have to be even with everybody else, because we have so many other natural advantages."

The flaw underlying Texas' poor position in new energy competition is an apparent lack of focus and effort.

"It simply appears to the outside world that we don't want this industry or we don't feel we should have to hustle to win it," says Surface. "Whatever the state is doing—and it may be far more than I know of—it pales in comparison to other states and is simply not known. If there's a brilliant strategic recruitment plan in Texas, someone needs to dust it off, repackage it and market the hell out of it."

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—Joel Surface

Few people inside the state can articulate a list of clean energy activities or a cohesive statewide economic development plan.



Branding Texas for the New Energy Market

Much of the discussions that informed this document focused on specific, tangible things Texas could do to elevate its status in the burgeoning new energy economy. Surprisingly, experts also agreed that, substance aside, Texas is also losing the branding battle to other states. As one respondent put it, “It doesn’t matter what Texas is doing to compete in this area if no one knows about it. And if I don’t know about it, the odds are that some CEO in Florida or California or China doesn’t know about it.”

Texas has a branding battle ahead.

Texans may be known as wildcatters, willing to undertake great risks for potentially great rewards. We may be known for our proud energy heritage and our success with wind power. But when it comes to states known for visionary leadership in developing the economy of the future, our state is nowhere near the front of the pack.

“The Texas brand on clean energy is atrocious,” says Isaac Barchas, director of The Austin Technology Incubator at UT-Austin. “I think, by the way, that may be

somewhat unfair. But there is an Austin brand and there is a rest-of-Texas brand, and it is tough to get people to take you seriously when you say you are doing clean energy in Texas. It feels like a contradiction to them.”

Several interviewees easily recited meaningful clean energy efforts afoot in Texas. Yet they all conceded that few people inside the state can articulate a list of activities or a cohesive statewide economic development plan.

“It’s not that Texas is not relevant (in renewable energy),” said says Patricia Glaza, executive director of the Clean Technology and Sustainable Industries Organization. “But people don’t talk about it as relevant. There isn’t anything going on that makes companies say ‘Wow! I want to be part of this.’”

Some interviewees also believe there is an inherent contradiction between state leaders’ public support of renewable energy and their political positions regarding national carbon regulation.

“I think most people agree federal carbon regulation will be the single great-

“It’s not that Texas is not relevant (in renewable energy), but people don’t talk about it as relevant. There isn’t anything going on that makes companies say ‘Wow. I want to be part of this.’”

— Patricia Glaza

“It doesn’t matter what Texas is doing to compete if no one knows about it. And if I don’t know about it, the odds are that some CEO in Florida or California or China doesn’t know about it.”

—Anonymous



est spark to this market,” Marston says. “And the industry is looking across the country for governors and state legislators who want to be prepared for that eventuality. But when they look to Texas, they see leaders who aggressively oppose any carbon action and warn of an economic apocalypse if Washington passes carbon legislation.”

Indeed, Texas’ opposition to possible federal carbon legislation is startlingly

alarmist. According to the Governor’s Competitiveness Council 2008 Texas State Energy Plan, “Texas’ energy future, perhaps even Texas’ ability to compete globally, is threatened by carbon legislation, even though carbon has never been recognized by Texas or the federal government as a pollutant.” In the Council’s report to the Governor, it noted that global warming legislation would hit the Texas economy so hard that Texas should spend tax dollars to “inform Texas citizens about the impact of carbon regulation.”

For investors and entrepreneurs reading the report to gauge Texas’ commitment to the future energy economy, it is hard to imagine a more blatant red flag. Apart from the report’s defensive and political tone, it raises questions about whether Texas understands just how much money there is to be made as the world shifts to a lower-carbon economy. As one interviewee said, “If I had \$5 billion to invest in a state’s renewable energy plan and I read





that comment, I'd pass up Texas in a New York minute. No investor wants to feel that the state government is constantly telling voters that your product is ripping them off."

"It sometimes seems to me as though Texas is going out of its way to sound like the Darth Vader of carbon regulation," Barchas says. "That doesn't help when recruiting investors here. We don't have to embrace Al Gore, but just speaking a language that resonates with the economic opportunity presented by the clean energy revolution would go a long way."

Interviewees regard this negative rhetoric as not only shortsighted and potentially harmful to Texas' economic development efforts, but also unnecessary. We're spending effort on something we don't have much control over, and if we're successful, then it will further the state's branding challenge within the new energy industry. In any event, anti-global warming rhetoric hinders the state's ability to recruit the best clean tech companies to

Texas.

"Forces well outside of Texas—irresistible forces that Texas can only marginally influence, such as the impending adoption of carbon cap and trade—will create a call to action throughout the state," Stanbery says. "If we stick our heads in the sand, we won't attract that kind of industry. If we ignore carbon legislation, we'll watch the industry develop someplace else. I am very well aware there are a lot of interests in the fossil fuel industry in Texas that don't want to see cap and trade and will lobby at the national level against it. But I believe they are tilting at windmills in so doing. It's going to happen, and it's better for the state to hedge its bets. Politically, there is no hypocrisy there. It is called prudence."

Texas' new-energy-branding challenges come with some good news and bad news.

On the bright side, branding and marketing is relatively simple and, compared with other possible state initiatives, cheap. Many interviewees suggested what would

"We need better words, but we also need action. California has gotten a lot of mileage out of Governor Schwarzenegger using the right kinds of words and speaking the right kinds of phrases. But they have also backed it up with a lot of initiatives that are quite meaty and substantive. So any change in rhetoric needs to follow a meaningful change in policy."

—Isaac Barchas

amount to little more than a marketing campaign for the state: an attempt to articulate Texas' support for the new energy economy, bundle all the incentives and supportive policies into an attractive enticement package, and mount a targeted "Open for Business" campaign nationwide. From "Don't Mess with Texas" to "Texas: It's Like a Whole Other Country," our state has demonstrated a knack for successful branding campaigns.

But a branding campaign must be real. It must fit within the state's priorities and policies, and it must be true. So, unless Texas shifts its policies and enthusiasm about seizing new energy opportunities,

promoting its position would do more harm than good.

"We need better words, but we also need action," Barchas says. "California has gotten a lot of mileage out of Governor Schwarzenegger using the right kinds of words and speaking the right kinds of phrases. But they have also backed it up with a lot of initiatives that are quite meaty and substantive. So any change in rhetoric needs to follow a meaningful change in policy."

"Talking the game is a good start," says CTSI's Patricia Glaza. "But if you act against what you are saying, people will call you out pretty quickly."

In the upcoming legislative session, Texas has the opportunity to demonstrate to the rest of the country and world that we're serious about renewable energy.



Last Chance to Lead

No stranger to the ins and outs of the Texas legislature, Austin attorney and economic development leader Pike Powers sums up the renewable energy industry's expectations for the 2009 session: "The more movement, the faster we act, the more competitive we are going to be. But am I going to lose sleep if we don't get the whole banana in the next legislative session? Probably not. I guess I have been around too long. If you can't get in the front door, sometimes you go in the back door. There are other ways to skin the cat."

Surely, the host of experts we interviewed would agree the Texas economic engine won't grind to a halt if groundbreaking legislation isn't passed in 2009. Yet there is a palpable sense of urgency to their message.

The economy might not stop, but its potential may be severely undermined. The new energy economy is moving fast, and not just when it comes to the competition for companies. With rising energy costs and advancing technology, some believe the next few years will present the first time renewable energy overtakes fossil

fuels as a better economic choice. Getting into the game after that fact will cost Texas dearly.

"The pace of change, the pace of improvements in the technology, the pace of demand is speeding up," says Applied Material's Steve Taylor. "Technology improvements are going to speed up, and the price is going to come down. So we can't necessarily wait until the 2011 session. We need to at least make a statement now and get on the radar with people that we're serious about this. We can't wait."

"If we want to get solar manufacturing here, we need to act now," says CTSI's Patricia Glaza. "We have to create the market for it. The companies that are building are doing so in their market areas."

EDF's Jim Marston, who monitors new energy legislation and investments in other states, thinks Texas still has a chance to seize the economic wave. "If we act in 2009, we still have a chance to be a significant player," Marston says. "If we act in 2011, we can try to get some of the scraps, but we will have done irreparable harm to our future economy. Things are happening fast enough that we are going to be

"Technology improvements are going to speed up, and the price is going to come down. So we can't necessarily wait until the 2011 session. We need to at least make a statement now and get on the radar with people that we're serious about this. We can't wait."

— Steve Taylor



“Let me put it this way—the longer we wait, the harder and more expensive it gets to compete. This idea that Texas is going to wait and play catch-up when it has more certainty about renewable energy is not a good strategy.”

—John Berger

very far behind.”

“I don’t know when the cut-off point is, but it’s coming up, that’s for certain,” says Standard Renewable Energy’s John Berger. “There’s a clear market consolidation going on, and if you don’t have a major company in one of those parts of the value chain located in your state, it is going to be pretty difficult to catch up. Let me put it this way—the longer we wait, the harder and more expensive it gets to compete. This idea that Texas is going to wait and play catch-up when it has more certainty about renewable energy is not a good strategy.”

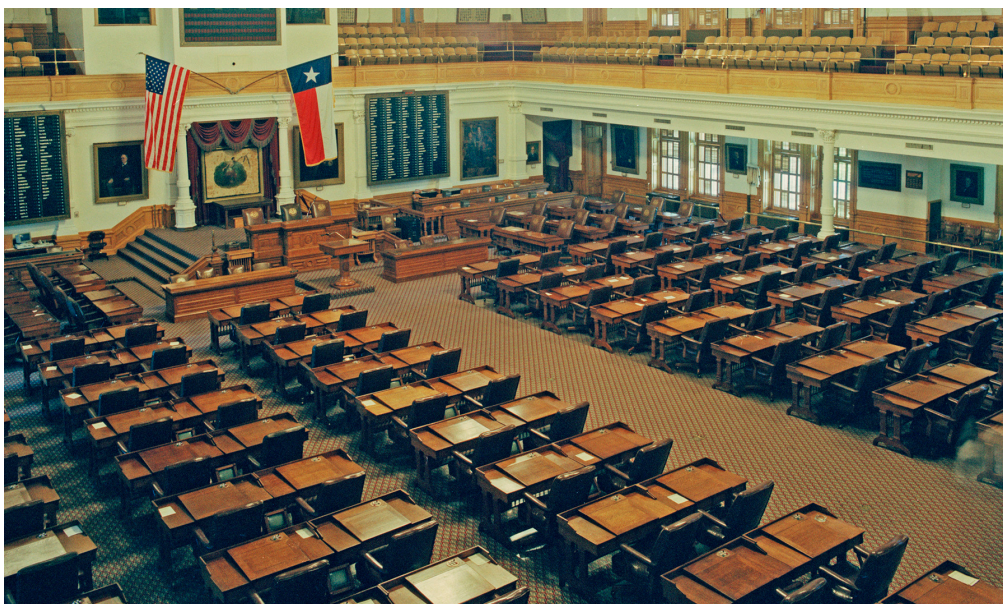
With the upcoming legislative session, Texas has the opportunity to formulate a meaningful commitment to this emerging market. This commitment can—and our interviewees say it should—consist of a combination of rhetoric and policy that will demonstrate to the rest of the country and world that we’re serious about renew-

able energy. Waiting until the 2011 session will put Texas in a defensive, reactive position.

“Texas needs to figure this out in 2009,” says Karl Rábago. “We need to announce that Texas wants these jobs and we’re going to get them, one way or another. We’re going to get these industries one way or another. We are going to make it happen, because it’s coming and we want our share! Next session will probably be too late, because 2010 is when everyone expects the legislation to pass in Washington. If we wait until 2011, it’s going to be ‘How do we adjust to it?’ rather than ‘How do we take advantage?’ If Texas hasn’t crafted our own strategy, we will be takers, not makers ... price-takers, regulation-takers, and rules-takers. And being a taker is not a good thing.”

“If you really want to play catch-up with some of the other states’ approaches to this, Texas needs to step it up in 2009,” says Kleiner Perkins’ Joel Serface. “Otherwise, it might be ‘game over’ pretty fast, at least when it comes to Texas becoming a manufacturing leader. We have been talking about the economic opportunities, but we are also talking about the potential economic failure of Texas if it doesn’t prepare appropriately. Texas has a huge problem on the horizon if it doesn’t address this issue.”

Next year, 2009, may not be the last time Texas gets a chance to address the pending new energy economy. But it may be the last chance it has to shape it, rather than adapt to it. As a local U.S. congressman said recently, we can either drive the new energy economy or we can get run over by it.



Recommended New Energy Action for the 2009 Legislative Session

Advocacy groups and renewable energy representatives are already promoting specific legislative recommendations at the Texas Capitol. The Texas Catalyst Project isn't a lobbying entity, and we are not promoting the preference of one new energy technology over another. So when we asked for recommendations from interviewees regarding steps the state can take this session, we asked them to keep their suggestions broad.

We also asked them to think big. Based upon their responses, we offer the following strategic recommendations to help Texas seize the economic opportunity presented by the new energy economy. Like the previous sections of this document, the suggestions fall into three broad categories: the market; economic development; and state reputation.

Market Recommendations

- Spur the creation of renewable energy markets by modernizing the state's Renewable Portfolio Standard to promote non-wind generation, and update the state's wind policy to promote the next generation of wind investment.
- Incent and reward residential and commercial energy customers who choose renewable electricity options, including aggressive rebates or tax credits for solar installation or other distributed generation.
- Promote Texas companies by tying customer rebates and incentives to products designed, manufactured or marketed by Texas companies.

(continued)

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Economic Development Recommendations

- Conduct a comprehensive analysis of how Texas' new energy economic development incentives compare to those of other key states.
- Consolidate existing and new incentives into a comprehensive and simple New Energy Incentive Package, and actively promote and market it by establishing a visible, coordinated state office to serve as a single point of entry for new energy economic development inquiries.
- Commit specific and significant portions of the Emerging Technology Fund and Texas Enterprise Fund to companies and efforts in new energy industries.
- Create a state-sanctioned venue through which university and community college officials, workforce development officials, regional and local chambers of commerce, and state leaders can develop a Green Jobs education and training strategy.

State Reputation Recommendations

- Change the political rhetoric surrounding the new energy economy. The world has recognized this is no longer a partisan issue, but an economic opportunity. As long as Texas leaders position the future — and the new energy economy — as bad for Texas' economy, businesses will go to other states where they're welcome. This will require current leadership to demonstrate more enthusiasm for the future economy.
- Convene a blue-ribbon commission on the new energy economy — consisting of traditional energy companies, renewable energy companies, universities, entrepreneurs, utilities and economic development entities — to design a long-term new energy economic development strategy for the state. This strategy should build upon the general suggestions of the Governor's Competitiveness Council's Report and State Energy Plan, and provide specific, executable strategies for promoting the new energy economy in Texas.
- Appoint a statewide, cabinet-level New Energy Economy Czar, responsible for identifying, articulating and executing a statewide strategy for maximizing Texas' New Energy economic development opportunity.
- Launch a Manhattan Project-style initiative to design the model "future grid" that could serve as a national proving ground for emerging energy technology and a model for networks nationwide.



For more information, please visit

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