

Q&A

NEED GETS TO KNOW INDUSTRY PROFESSIONALS

DICK WILLIAMS

Dick Williams joined Shell in 1980 upon receiving an electrical engineering degree from Penn State. He was named President of Shell Wind in 2008.



HOW DID YOU DECIDE TO WORK IN THE ENERGY FIELD?

Until 7th grade, I wanted to be a camera operator at a TV station. My dad retired from the Air Force and we moved to Pittsburgh just as I was headed into 6th grade. It was 1968 and I chose to go to an Alternative Middle School where they were trying new things in science and math. My 7th grade science teacher – Mr. Zibrida – had a HAM radio license and he started a club for amateur radio operators. Several of us said, “but we’re only in 7th grade.” He said, “So?”

We all got HAM licenses in 7th grade. We built towers and transmitters and we were talking to people all over the world. I never wavered after that – I was going to be an electrical engineer. I applied and entered Penn State University after high school. It was hard, but I loved it. I realized that we were always going to need power (electricity) and that was the path for me.

I had 13 job offers when Shell came to campus. They called and I said “no thanks.” I was going to IBM. Shell kept calling and I agreed to meet the recruiter. I didn’t get dressed up; I put on a pair of jeans and a flannel shirt and went to meet him. I didn’t want to work in Houston. I didn’t want to work for an oil company. I didn’t want to work in a plant or in pipelines.

Later that night, a man I would end up working for three times called. He heard I didn’t want to work at Shell. He knew I was a Pittsburgh Steelers fan, and he said, “well, I just want you to know the Steelers stink.” Right then, I decided I would accept the flight to Houston to meet this guy just to get out of State College, PA in the winter. So I did. And halfway through the first day I decided I was going to work for Shell. They believed in me. They respected me (even if they didn’t respect the Steelers), and I accepted.

HOW DID YOUR EXPERIENCE IN OIL AND NATURAL GAS PREPARE YOU TO BE PRESIDENT OF SHELL WIND?

I came to Shell Wind to find that this role and the development of this energy source is a real combination of my previous positions. Developing wind energy combines exploration for the energy sources, production of that energy source (finding the best turbines and the best technology to harness wind energy and generate electricity) and distribution.

WHAT MADE YOU SURE THAT WORKING IN WIND WAS A GOOD CHOICE FOR YOU?

When I accepted the position as President of Shell Wind, I am sure the team thought “he has no wind experience, he just won’t understand us.” Within a couple of weeks I realized that within

this group at Shell Wind, and throughout the wind industry, there is a great amount of passion and ingenuity. I knew this was a good choice – working with creative and passionate people. Developing and operating wind projects tapped all I learned from oil and gas exploration, from pipeline work, and from my time working on the financial side too.

HOW IS WIND DEVELOPMENT LIKE OIL AND GAS DEVELOPMENT?

Our wind maps look just like the 3D seismic mapping we use for looking for oil and natural gas below ground. But, of course, our wind maps are about the above ground resources. We’re working with some of the same equipment and functions – hydraulics, motors, pumps, our engineers work with the same engineering equations, and many of our team members working on wind analysis are former “downhole” people who worked in our oil and gas operations. Financing the projects is also similar.

The wind industry is where the oil and gas industry was 40 years ago. We’re working on expanding best practices in safety, long-term planning, maintenance, equipment reliability, and forecasting. We have taken Shell’s best practices and principles and applied them to the wind business. However, we don’t have 40 years to get to where we need to be – we have maybe 3-4 years.

WHAT BACKGROUND AND SKILL SETS DO MOST OF SHELL WIND’S PEOPLE HAVE?

Many of them have come from the business development side and have power company transmission and project experience. Wind blends so many skills. We have mechanical engineers, chemical engineers, electrical engineers, and we have those with mathematics backgrounds, financial backgrounds, and communications people too – who work to educate and communicate our work.

WHAT DO YOU SEE AS THE BIGGEST CHALLENGES FOR THE INDUSTRY IN THE COMING YEARS?

I put these in a couple of different categories. First, are the political and regulatory issues. Until there is a consistent policy, every renewable technology is going to struggle. Wind is a huge capital investment. For example, one 2 megawatt turbine is a 3-4 million dollar investment. Our last windfarm has 132 turbines. There’s a math activity for you! That’s a substantial investment and having inconsistent energy policy makes it hard to plan, model, secure financing, and to consider the long-term success of the project.



Shell's NedPower Mount Storm Wind Project, situated atop the Appalachian Mountains, in Grant County, West Virginia.

“There is room for all skills in the wind industry. We need people with skills in human resources, safety, communication, health, finance, environmental science, and biology.”

The second challenge is transmission of electricity. When we look at a map of the nation's best wind resources, we see that the wind is best where the majority of America's people do not live. Wind is over the plains, most of our population is on the coasts. Shell has become a partner in some transmission companies to simply get a seat at the table to be able to plan best for projects. The federal government will, very likely, need to spearhead the improvement of our electric grid. A good example is the Eisenhower Interstate Highway system. The Federal government took the lead, worked with the states and landowners and built the system on which our goods, services, and families move on a daily basis.

Wind is a vision issue, a passion issue, a legacy issue...what are we going to leave for our kids? A consistent energy policy is desperately needed. We must get serious as a country and get consistent policy.

HOW DO YOU APPLY YOUR ENGINEERING DEGREE FROM PENN STATE UNIVERSITY EACH DAY?

I wish I was an engineer 30 years younger today. The technology they get to play with (I mean work with) on a regular basis is fascinating. Then, they get to think about how we put these technologies together – not just the electronics, hydraulics, and mechanics of the turbine itself, but how you weave together the different energy sources like wind with solar, wind with gas, solar and storage, etc.

Think about this: There are 13,000 parts on a turbine. Today, we have onboard computers that can tell us what is working, what is not, when there is too much dust, when there are too many bugs, and constantly watching the efficiency of the turbine – making sure we're getting the return on our investment.

And we get to rethink things too, like how do we engineer our gearbox to get real time information on how they are working. Wind forecasting and measurement is beyond wind vanes and anemometers. We're now looking at radar and lasers to look at wind and predict its movement and adjust the turbine for greater efficiency.

WHAT'S ONE OF THE MOST INTERESTING THINGS YOU GET TO CONSIDER EACH DAY?

Blade design is very interesting. But no one that I know of in the industry has looked at how we will tackle the issue of old and used blades. No one has considered how we recycle blades

that have reached the end of their useful life. No one is looking at the full life cycle. How do we deal with all of that fiberglass? Does it go to the landfill, does it simply end up laying around the windfarm?

We're looking at new blade materials. Alcoa, an aluminum producer, is working to see what may be possible in aluminum and metals. Think of that idea – if a blade fails, it is smelted down and recycled. Once a blade has reached its full life, it is smelted and turned into new blades. The possibilities are endless.

WHY DO PEOPLE LIKE TO WORK AT SHELL WIND?

You know, I've asked them just that. Our field supervisor at Mt. Storm, one of our major projects located in West Virginia, said it was a couple of things that kept him here. He said it is because the company cares about him. That we respect safety as a team and we have extraordinary long term opportunities. The pay package is good, the stability is good, and having all the options within Shell is a big plus too.

Consider the Mt. Storm scenario for a minute. If shale natural gas development continues to expand in the Appalachian region, the skills our folks at Mt. Storm have, make them easily transferable to developing shale gas in the Marcellus (see the April/May 2011 edition of Career Currents for more about careers in the oil and natural gas industry).

DO YOU HAVE ANY ADVICE FOR STUDENTS CONSIDERING CAREERS IN WIND?

I had a mentor once who said: “To be successful in this business you have to: 1. Be resourceful, 2. Ask questions, and 3. Always walk into your boss's office with a solution.” I have added a 4th: Network.

There is room for all skills in the industry. We need people with skills in human resources, safety, communication, health, finance, environmental science, and biology. We even have bat people too – who study the impact of wind turbines on bats.

WHAT'S YOUR FAVORITE PART OF THE JOB?

Sharing the passion that I've gained and showing people that an energy company can and should be involved in wind. To educate, advocate, and advance the business. I left the best job in the world and now have a better one. It is about sharing the excitement of wind and constantly learning and teaching.

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DENISE BODE

Denise Bode is the Chief Executive Officer of the American Wind Energy Association. Denise holds a bachelor's degree in political science from the University of Oklahoma, a Juris Doctor degree from George Mason University, and a Master's of Law in Taxation from Georgetown University. In 2009, the Women's Council for Energy and the Environment named Denise Woman of the Year.



TELL US A LITTLE ABOUT YOUR JOB AND WHAT YOU DO.

Since 2009, I have served as the CEO of the American Wind Energy Association. In that capacity, I lead an organization that represents the American wind energy industry. My primary job is to grow demand for wind energy in the United States in order to ensure the advancement of an industry that creates jobs and economic growth. We're bringing manufacturing to the United States, laying the foundation for this industry to develop right here at home.

I also work to broaden our advocacy efforts on the state and federal levels. This means promoting wind energy's benefits to people across the country—those who already have wind turbines in their backyards, those who have never seen a wind farm, and those who make policies for and regulate the energy sector. We are constantly educating Americans on what wind can do for them.

HOW DID YOU DECIDE TO GO TO WORK IN THIS FIELD? WHAT PIQUED YOUR INTEREST IN WIND?

I've spent my career and the last 30 years working in energy policy. After practicing as a lawyer for a few years, I decided that I didn't only want to be an attorney to implement the law, but rather that I wanted to be involved in making good laws and policy decisions that could change the world.

My interest in wind was piqued when I served on the Oklahoma Corporation Commission and as President of the Southwest Power Pool's Regional State Committee. I first worked on extending the Investment Tax Credits for small wind turbines, but later toured NREL to learn about utility-scale turbines and saw how much had changed with the technology. By the early 90s, it had advanced and had become a really viable source of electricity generation. While serving on the Oklahoma Commission, we incentivized utilities to buy wind and add it to their portfolios, and I saw how people really took to wind energy.

WHAT IS A TYPICAL DAY AT WORK LIKE FOR YOU?

There really isn't a typical day at work, except for the times I come and go home. Day to day, we have a lot of meetings to discuss policy issues and coordination for events. I could be

doing business and budget planning in one meeting, then move on to a policy strategy session, then have a meeting on earned media and our latest ad campaign, and then end the day with state legislative issues. You have to be very flexible.

HOW HAS YOUR FIELD CHANGED IN THE LAST 5-10 YEARS?

The American wind energy industry is a completely different industry than it was ten years ago. Ten years ago we weren't even a blip on the screen and today wind has added 35 percent of all new electric generating capacity in the United States. Five years ago, we were importing 75 percent of all manufactured parts. Now we're making more than 50 percent of them right here in the U.S.

COULD YOU DO YOUR JOB ANYWHERE IN THE COUNTRY?

I think to manage a staff and lead an office, it's necessary to be in the office a majority of the time. The employees have to have someone in the office with them that they can go to. I think it's difficult to manage any size staff remotely, let alone 80 people. I also think it's important to be in the office with them to see what's going on and be able to intuit what people's needs are.

Since a lot of the work we do is about driving national policy, the nation's capital is the principle hub for getting things done. Washington, D.C., is where national planning happens, and so it allows us the opportunity to be a part of the debate and meet with government agency and Hill staff and elected officials while they're forming the policy.

WHAT IS THE MOST REWARDING PART OF YOUR JOB?

The most rewarding part of my job is being with the people I work with every day. I look forward to interacting with our team at AWEA daily. I learn as much from them as I have in any job. They're not only coworkers; some have also become very close friends. I get a lot out of relating with these people.

Another rewarding part of my job is being able to build a new industry that will create sustainable jobs with a clean, homegrown source of energy. It's the dream of any elected official (if they ran for the right reasons!) to contribute to creating something that will be here to stay and contribute economic value for the nation.



The growing wind energy industry has become a source for 'green' manufacturing jobs in the U.S. Five years ago, 75 percent of turbine parts were manufactured abroad, but today, more than 50 percent are produced domestically. This picture was taken by NEED teacher Clara Jo Elder, while visiting a wind farm near Idaho Falls, Idaho.

WHAT IS THE HARDEST PART OF YOUR JOB?

The hardest part of my job is making that dream happen! (See previous question.) We are working hard to educate the public and policymakers about how exciting American wind power is, and communicating how it has been a bright spot in the economy. People tend to think energy only changes in geologic time, but the wind energy industry is a fast-paced, quickly developing industry and we're still ramping up.

WHAT TRAINING AND/OR EDUCATION DID YOU NEED TO BEGIN YOUR JOB?

Going to law school and becoming an attorney really helped me learn how to write and speak effectively and analyze complex problems. Learning to do my various jobs in different policy areas has been the most specialized training as well. I've served in a Governors' Office and worked on in-depth state issues. I've worked in the U.S. Senate and on the Finance Committee and learned the ins and outs of tax policy, which are issues so important to wind. I've been a statewide elected official and thus learned how to raise money to run for an office. I've also learned how electricity works, from the time a wind farm is first sited and planned to how it's delivered to a consumer or home. I spent ten years working on the Oklahoma Corporation Commission working in the trenches, designing transmission policy and hearing rate cases.

I learned how to be an advocate when I started my own law firm. I built it from the ground up, getting a line of credit, making a small business plan, and recruiting and caring for clients. I learned what it means to worry about your employees and make payroll in the private sector. I truly gained an understanding of the skills of an entrepreneur and understanding how they work is so important to my role at AWEA, as businesses are who we represent.

WHAT CHALLENGES DO YOU FACE IN THE INDUSTRY?

The challenge is educating the public and policymakers about the benefits of wind energy.

We're trying to get to the point where it is understood that wind is one of the most important burgeoning industries in America. We're trying to get policymakers to understand what an important energy source wind is and can be. They are fighting the last war; they are looking at the industry as it was 20 years ago and not recognizing it for the global, high-tech, advanced industry it is today.

WHAT ARE SOME BENEFITS TO WORKING IN THIS INDUSTRY?

My son said to me that I was finally working in an energy industry of which he was really proud! The benefit is that people—on both sides of the aisle, young and old, across the country—love wind energy and want to see more. Polls consistently indicate that 89 percent of the population favors wind energy. I'm proud to represent this industry in any setting because it's virtuous. Rarely do you receive anything but excitement or interest in wind energy.

WHAT ADVICE WOULD YOU GIVE TO A YOUNG PERSON WHO IS INTERESTED IN WORKING IN THE ENERGY INDUSTRY?

I'd advise any young person interested in an energy field to do an internship. It's so helpful to figure out early on what type of work they'd like to do, whether it be in the policy or lobbying realm, public relations, or conference and meeting planning. We're such a fast-growing industry and there are many opportunities for the best and the brightest around the world to join the movement.

The wind energy industry is really characterized by a unique and international community of businesses. Getting to interact in the global space has been one of the most fun things for me in this job. I have found that my international counterparts are always helpful and supportive, and we share across borders. Europe especially has been wanting to see the U.S. industry take off.