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TESTIMONY OF TWC CHAIRMAN TOM PAUKEN
Senate Committee on Education

Good Morning, I am Tom Pauken, Chairman of the Texas Workforce Commission. Thank you for the invitation to discuss the important issue of aligning career and technology education with what is needed in the workforce. We continue to hear from employers that this is an issue that really needs attention.

Without a skilled workforce, we will be unable to maintain the rate of growth in job creation that we have seen over the past several years in Texas. An important requirement of employers seeking to relocate or expand their businesses is the availability of a more skilled workforce. We must be able to supply workers on the employers' timeline in order to remain competitive in attracting jobs to our state.

Unfortunately, many of today's workers entering the workforce for the first time are sorely lacking much needed workplace skills. This is not just a problem of high dropout rates. The fact is too many that students who are finishing school don't have the basic academic grounding along with the skills needed for the jobs that are available. Moreover, I am not sure that our colleges are addressing our workforce needs when, as pointed out by Tom Luce in a recent article in the Austin American-Statesman, "America now graduates more sports exercise majors than electrical engineers."

A case in point: In 2003, the legislature passed SB 275 which required the development of a statewide economic development plan based on industry clusters. One of these clusters is the Energy cluster. The Energy Cluster is one of the most diverse cluster groups in the state -- comprised of oil and gas exploration and production, power generation (whether by coal, hydro-power, natural gas, nuclear, or other power source), mining, power transmission, and the "renewable and sustainable" energy sources, such as wind, bio-fuels, solar, and geothermal. With oil and natural gas prices at historic highs, the activity in this sector has been unmatched in our history. Over 60% of the drilling rigs in use across the nation are engaged in Texas projects. Similar growth is evident in the nuclear sector, and in the renewable energy sector. With such explosive growth, some challenges exist in providing and sustaining a skilled workforce for the energy industry.

The energy cluster in Texas is envisioned to include emerging technologies such as wind, geothermal, nuclear, biomass and solar and the manufacture of related hardware and instrumentation, including large blade wind turbines. Many of the companies and research facilities involved in these technologies do not do this work exclusively; meaning that a company may have a division or subsidiary working on these technologies but the primary business activity includes other products or services. Since employer industry classification is tied to the primary revenue generating product or service of an individual company, it is possible that some companies that might intuitively be associated with the energy industry might actually be classified in another industry. Additionally, the North American Industry Classification System (NAICS) industry taxonomy does not offer unique classifications for "renewable energy" in general, not to mention solar or wind energy categories in specific. These factors make precise estimates of employment specifically tied to these technologies difficult to measure.

While defining an all inclusive grouping of workforce skills may be impractical, we use the cluster concept to help us look at the needs of particular high impact industry sectors and the similar needs for certain skills, education and proficiencies. TWC is developing a program using datasets from existing labor market information and resources to create of a set of tools to assist Texas businesses and economic development interests conduct strategic workforce planning. This helps industry control labor costs, assess talent needs, and make more informed business decisions. The information generated matches a business's mission critical skill sets to available training programs.

As defined, the Texas Energy Cluster added 85,465 jobs in the 2004-2007 period, with the 18.9 percent growth rate significantly exceeding the 8.9 percent job growth for the Texas economy as a whole. Architectural and Engineering Services (22,715), Utility System Construction (18,019) and Management and Technical Consulting Services (16,569) have added the most jobs over the three year period. These industries, along with Nonresidential Construction, dominate the Energy cluster.

While each of the industries identified play an important role, they have both overlapping and unique occupational staffing needs. For example, the skills needed to manufacture wind turbines differ from those necessary to design them and install them. The skills needed to design a nuclear power plant differ from those who pour the concrete, install the monitoring instrumentation and eventually operate the facility. The complexity of these skill interactions makes the task of identifying training needs for an entire cluster daunting.

According to a report from the Texas Energy Cluster of particular concern is the fact that the current group of technical professionals in the industry is approaching retirement age, and there is an inadequate 'pipeline' of replacement professionals. Assuming a reasonable learning curve, it may take three to five years for these 'knowledge workers' to be fully prepared to make significant contributions to the company's efforts." The energy industry, as well as other high-skill, high-wage industries, will lose as much as half of their professional talent over the next five to 10 years as baby boomers begin to reach retirement age.

The world is not the same as the 1950s when 60 percent of jobs could be filled with unskilled workers and only required on-the-job training. Today, 80 percent of high growth, high demand jobs require some education beyond high school. But only 20 percent of those jobs require a 4-year or more degree – 60 percent require 1 to 2 years of additional education or training.

While one can make the argument that Texas is doing a reasonable good job of producing the raw number of 4 year degrees, there is a huge mismatch between the areas of study and the jobs being created. And, our real deficit is in the number of 2-year technical degrees.

This is a frustrating environment for those in the workforce system because we are held accountable for ensuring suitable employment for those looking for work. Yet, the graduates being produced from our public and higher education systems often do not have the skills needed to be employed.

Employers tell us that their greatest needs can be met through a quality high school education, followed by either an associate's degree or an advanced certification program. However, in response to a recent survey, 40 percent of the employers said that high school graduates are unprepared for entry level jobs – lacking basic skills in reading, math, and science. Additionally, these employers overwhelmingly reported that new hires are the most deficient in basic writing skills.

Supporting the employers' comments, a study of Texas high school graduates taking the ACT in 2004 found that only 18 percent had the foundational skills for college and work. Of particular interest is the fact that research has shown that the skills students need to enter jobs in the current workplace are now the same skills that are needed to succeed in college.

The ACT study went on to say that another 46 percent of those high school graduates, above the 18 percent, could be made ready for college or work if they added a math course past Algebra II and completed the Biology/Chemistry/Physics sequence. Math and science are a critical component in preparing young people for many of our future jobs. Of the 10 occupations projected to see the most job growth between now and 2014, six are related to health care and two are related to computers. A good education in math and science is a necessary requirement for success in those fields.

In addition to learning the basics, students also must have good analytical skills.

Employers report that "applied skills" such as critical thinking, how to work effectively as a member of a team, and effective communication are essential for individuals to be prepared for the workforce. For some occupations these applied skills are even more important than the basic skills or specific technical skills that can be gained on the job. Therefore, it is critical that our young people know how to learn on their own and how to analyze issues, identify solutions, and develop recommendations for solving problems.

Exposure to work is another important component of ensuring that our education systems are aligned with the skills needed in the workplace. In order to fully gain an understanding of the relevancy of their coursework, there should be opportunities for students to actually work in various fields of interest to them where there are employment needs. I firmly believe that if students can see a connection between what they are learning today and the career opportunities available to them - both those requiring a college education and those that do not - that they have a greater incentive to remain in school. They also need to understand that, without certain skills, their futures are limited.

Witnessing first-hand the types of jobs that are available and the expectations of the workplace highlights for students and their parents the reality that many jobs in today's economy, that will allow them to support a family at a reasonable level of earnings, will require at least some post-secondary education or training.

Furthermore, exposure to work environments provides opportunities for students to learn what is considered an appropriate work ethic and behavior. A 2005 survey of employers in the manufacturing industry found that employees entering jobs in that industry are the most deficient in "basic employability skills" – skills such as attendance, time management, and professionalism. Our systems must hold students accountable for these behaviors. We also have a serious problem of illegal drug abuse among young people, which has a negative impact on the job place and society in general. We have to get serious again about discouraging young people from getting involved in the drug culture. It needs to be addressed.

Additionally, we have to work with parents and high school guidance counselors to educate them about the jobs being created and all of the potential career pathways – including good options requiring less than a 4-year degree. Right now, the message parents are getting is that their kids have to get a bachelor's degree from a four-year university in order to get that good-paying job. That is not representative of the employers' needs.

The resurgence of career and technical programs in the school systems is definitely a positive change. These programs now provide training in fields such as health sciences, robotics, welding, and crime forensics in addition to auto mechanics and other traditional areas of vocational education.

The rise of these programs and other college alternatives will help us to address our desperate need in this state for specialized skills in occupations such as plumbers and welders. Contrary to popular belief, these jobs require the use of very technical knowledge and expertise based on a solid grounding in math and science. Jobs in these fields pay good wages and can provide for a stable career path.

My final observation regarding the alignment of our education systems is the need to support the work being done by our community and technical colleges.

Community and technical schools play a significant role in filling the gap that exists between skills workers have and what employers need. These institutions have shown that they are positioned to be responsive to the needs of employers needing specific types of training and employees looking for opportunities to keep their skills and knowledge current.

Underlying all of my comments is the need to actively engage employers in the alignment of our education systems with the workforce. We need employers to participate in everything from the development of curriculum to actually providing opportunities for students to experience the world of work through initiatives such as mentoring programs, internships, job shadowing programs, and summer job opportunities. Through these initiatives and curriculum alignment, students and employers will both benefit.

Just as an individual must be prepared to learn new skills, our workforce and education systems must also be prepared to respond to the changing needs of the local economy.

In order to make the best use of our state resources, I believe that our education system should make a shift to one that is market-driven and that takes into account the skills needed by employers. All of us will need to get a job to support our families.

Thank you for your attention to this issue and the opportunity to address you. I'll be glad to answer any questions you may have.