3TIER's written testimony regarding the roles of the public and private sectors in renewable energy forecasting.

Presented by Dr. Pascal Storck, Vice President of 3TIER, at the hearing "Real-time forecasting for Renewable Energy Development" held on June 16, 2010 by the Energy and Environment Subcommittee of the House Science & Technology Committee.

Good Morning, Chairman Baird, ranking member Inglis and the rest of the committee. I appreciate the opportunity to be here today to testify on the issue of public and private roles and research needs in renewable energy forecasting.

Electricity generation from renewable sources such as wind and solar comes with the disadvantage that the output is variable and fluctuates as the weather does. As renewable energy generation has come to supply an increasing amount of the electricity consumed in our country, with some regions (such as Texas/ERCOT) seeing 20% or more of hourly electricity demand satisfied solely by wind, the challenges of integrating this energy into our power system have been documented, studied and debated. One common theme that has emerged is that forecasting renewable energy output hours and days in advance is key to the cost-effective integration of this variable energy source.

The central importance of renewable energy forecasting has led to the establishment and growth of a vibrant and competitive private sector to provide these forecasts. Our company, 3TIER, and our competitors routinely provide accurate forecasts of renewable energy output, hours and days in advance, to project owner/operators, system operators, utility companies, and power marketers. Our company alone provides wind energy forecasts for over 13,000 MW of installed capacity and employs 60 staff in the production and delivery of these forecasts and other services for the renewable energy industry. As the renewable energy industry has grown, so has the experience level of the private sector in providing these forecasts. Forecast accuracy has improved significantly over the past several years as we invest in our forecast systems to meet the demands of our clients. In fact, recent work overseen by our colleagues at NREL has demonstrated that the current state-of-the art provides 80% of the value of a perfect forecast. In short, the private sector renewable energy forecasting community is strong and well-positioned to meet the demands of our clients, both today and into the future.

As I mentioned earlier, renewable energy output fluctuates as the weather does. This simple fact makes accurate weather forecasts a fundamental requirement of an accurate renewable energy forecast. 3TIER, as well as our competitors, rely on government weather forecasts on both the regional and global scale as inputs to our energy forecast systems. These government issued forecasts in turn rely on global and local observational networks as well as computer models that have been developed, implemented, and refined by countless individuals spanning government operational forecasting centers, our research universities, our national labs, and the private sector as well. Herein lies the best opportunity for collaboration between the private sector,

government and academia. Improve the quality of the weather forecasts, by improving the observational inputs, the models themselves, and the systems that create the forecasts, and we will improve the quality of the renewable energy forecasts that the private sector can provide. Improvement of the accuracy of the nation's fundamental weather forecasts is an enormous challenge and one that our federal agencies are uniquely positioned to achieve. Doing so will not only improve the quality of renewable energy forecasts supplied by the private sector, but will benefit transportation, agriculture and the other sectors that are affected by the weather, ensuring that investments made are not solely for the benefit of one industry.

In these times of strong renewable energy industry growth and federal stimulus program funding, there is the opportunity—if not the obligation—for the public sector to work aggressively towards *complementing* the private sector's capabilities to provide the greatest benefits to the renewable energy industry's requirements for accurate energy forecasts. If this opportunity is not well planned and coordinated, there is the risk that federally-funded efforts could be redundant and in competition with services already provided by the private sector. Working together, we can ensure a robust and second-to-none U.S.-based weather forecasting infrastructure as well as a competitive renewable energy forecasting industry that enables the realization of the nation's full renewable energy potential.

Thank you for allowing me the opportunity to testify today and I look forward to any questions you may have.

Additional Material (see attached:Joint Statement on the Role of Government-Affiliated Renewable Energy Forecasting Activities Relative to the Private Sector, prepared by Bruce Bailey, Mark Ahlstrom and Pascal Storck on June 3, 2009)