

The Next Generation of Shale Gas Innovators

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Many stories have been written about the early innovators that helped launch the shale gas revolution such as George Mitchel who spent decades mastering the hydraulic fracturing process. Others are touted for their tireless efforts perfecting directional drilling, the second key component the industry utilizes today. Companies like Range Resources took early risks experimenting with the drilling and hydraulic fracturing processes, and many current large and small production companies are fine tuning and improving the extraction process every day. Then, there are the midstream companies rapidly developing improved techniques to separate natural gas liquids and water from the oil and natural gas, and improving methods to move the products to end markets. But, who else is contributing to the shale energy innovation revolution?

Who are the next generation of Shale Gas Innovators? On May 15th in Southpointe, PA, just west of Pittsburgh, a group of these entrepreneurs will show off their new ideas and in some cases, commercially available products or services.

The Shale Gas Innovation & Commercialization Center or SGICC (www.sgicc.org), a Ben Franklin Technology Partners supported center located in State College, Pennsylvania, is hard at work to help support a myriad of entrepreneurs across the state hoping to launch a new product or service that will have a positive impact on the process of shale energy extraction, resource utilization, and improved safety – not to mention the new environmentally sound practices being used during the process. Bill Hall, SGICC Director, spends his time focused on advancing the most promising ideas. “Until you’ve been in the trenches so to speak, it’s hard to explain how challenging it is to advance an idea all the way to commercial success.” My job is to sort through the dozens and dozens of promising ideas, and identify the ones that we can impact by shining a light on them using a small amount of seed funding and then helping them vet their concept with potential end users.”

The shale energy play offers a new playing field for many entrepreneurs. For others it is a new market opportunity for their existing product or service. Take for example KCF Technologies located in State College, PA. KCF has commercialized a low cost, low power sensor that is used for wireless monitoring of rotating equipment, also known as condition-based maintenance. Current customers include the pulp and paper industry as well as the building maintenance sector. In 2013 KCF identified the oil and gas industry as a potential significant market after competing in SGICC’s second Shale Gas Innovation Contest. Now, with the support of SGICC through a seed grant, they are in the middle of a demonstration project to prove the value of their technology to this new market segment.

SGICC has developed a simple tool that helps uncover the ideas. Two years ago they held their first Shale Gas Innovation Contest, offering \$50,000 in prize money. Now approaching the end of their third contest, the prize money has doubled to \$100,000, and the number of entries has almost doubled as well. On May 15, 2014 at their Finals Event being held near Pittsburgh, four winners will walk away with a check for \$25,000. Hall states, “It’s not the money these companies are after; it’s the exposure the contest

provides them. We've attracted 17 sponsors for this year's event. The list of sponsors includes many of the largest shale energy players along the value chain; producers, midstream companies, and major vendors involved in the production and environmental management that goes on during the process. Having these companies that also supply the contest judges engaged in vetting the technologies is key to the process."

Steve Winberg, Vice President of Research & Development at CONSOL Energy is one of the contest judges. Steve notes, "We have worked with SGICC for three years now and found their process of uncovering innovations across the Commonwealth to be of real value for the industry."

Dante Bonaquist, Senior Corporate Fellow, R&D at Praxair, another sponsor and judge commented, "Through the Shale Gas Innovation Contest, SGICC brings together a broad range of promising ideas covering production, transportation and utilization. From the technology scouting perspective, there is no better opportunity to see high caliber shale gas related innovations on display at a single event."

One of last years' winners was REV LNG, a company located in north central Pennsylvania that offers "on demand" liquid natural gas that they purchase from electric utilities that are required by law to store LNG for use during extreme weather/ peak shaving events. REV LNG delivers the LNG to customers via large refueling trailers. Customers range from trucking companies to drillers wishing to use liquid natural gas to power their equipment used on the drill sites. David Kailbourne, CEO of the company, believes the innovation contest was instrumental in launching the company's growth spurt over the last year. Kailbourne commented, "The shale gas innovation award gave Rev LNG a tremendous amount of exposure, and we were delighted to participate in the contest. We certainly have received a substantial amount of notice and publicity from being named a finalist and winner, and it provided a valuable platform to expand our business." Hall notes, "These are the kinds of success stories we like to highlight. And, we know there are many more stories just like this one that can and will be told over the coming years. My objective is to speed up the success process, fast tracking technologies that can make a difference to end-users of the technologies while producing jobs in our state."

Recently SGICC secured a grant from the Pennsylvania Department of Community and Economic Development (PA DCED) through their Discovered and Developed in PA (D2PA) program. The money will fund seed grants to help develop the most promising commercially viable products or services SGICC uncovers. Also included are some funds to provide studies on critical bottleneck areas where the shale energy industry can use new innovations, or where opportunities exist for improvements. Hall said, "We've just started to award our first few D2PA grants. These grants can help tremendously by allowing us to nudge opportunities over the hump, either through funding successful demonstrations, or assisting the awardee with solving some challenging issue they may face such as a supply chain, or marketing and sales challenge. One of the grants in process is geared toward a new concept for natural gas utilization, a bottleneck that the industry faces. I can't divulge any details at this time, but we think this concept can be a game changer, and in an area where innovation needs to occur. There's so much natural gas being produced in our state, and it would be a tremendous shame if we can't develop ways to use the resource to benefit industry right here versus piping it all to end users far away from the generation point."

In 2013 the Benedum Foundation recognized the work that SGICC was doing, and the foundation stepped in to offer grant funding to expand the Shale Gas Innovation Contest to include the state of West Virginia. The grant has recently been extended for two more years, so innovators across West Virginia can benefit from the exposure the Innovation Contest provides. "Ask any of the contest finalists the value of having

their idea vetted by the caliber of the judges we've assembled," Hall comments. "Ask them the value of the exposure the contest provides. We are thankful that the Benedum Foundation recognized this, and has supported our efforts."

There is no charge to attend the upcoming Shale Gas Innovation Contest Finals Event that will be held at the Southpointe Hilton Garden Inn from 1:00 pm to 5:00 pm on May 15, 2014. Included in the finals event will be presentations by the thirteen finalists, and also special presentations by Chevron Technology Ventures, and GE, both of which are contest sponsors and judges. To view a list of the thirteen finalists and their technologies, see a detailed agenda, and to register to attend the event go to www.sgicc.org and click on the "\$100,000 Shale Gas Innovation Contest" button.