The Research Partnership to Secure Energy for America came together last summer in Galveston to highlight 10 years of research for both onshore and offshore operations. For more than a decade, RPSEA has supported development of new technologies necessary to produce more secure, abundant and affordable domestic energy supplies. In that time, RPSEA has made great strides in developing and commercializing technologies designed for the small producer, unconventional resources, and ultra-deep water.

It seems lately that when I mention RPSEA, a lot of folks are under the impression the organization is on the way to closing its doors, with its federal Section 999 funding coming to an end last year. This could not be further from the truth.

In fact, with the addition of Tom Williams as president, the development of new industry and academic partnerships, and its ongoing technology transfer efforts, RPSEA is poised to move forward as a leading, industry-driven research and development organization. RPSEA has the unique ability to move fundamental research through the development process into useful technology. Then, utilizing its industry relationships, RPSEA helps promote acceptance and overall adoption of newly developed technologies.

Nowhere has RPSEA’s commitment to industry and its record of success been more apparent that at its event in Galveston, highlighting the last 10 years of research. Of the more than 100 talks and presentations given at this event, one in particular stood out to me as a great example of how RPSEA can move a project from an idea into a reality for industry.

Steve Melzer from Melzer Consulting presented a talk in two parts titled, “Identifying and Developing Technology for Enabling Small Producers to Pursue the Residual Oil Zone (ROZ) Fairways of the Permian Basin, San Andres.” Melzer has been in industry for more than 30 years, and is an expert in reservoir characterization and the science of commercially exploiting residual oil zones, looking specifically at carbon dioxide flood performance, sequestration, policy, and business planning. His talk highlighted work Melzer and his team conducted over several years with a simple idea in mind: How do we help operators recover oil from a residual oil zone in their area?

Melzer began with a quick look at the history of oil bearing zones beneath the oil/water contacts, or ROZ. He noted that in the 1970s, as operators began to drill for deeper horizons, they began noting oil shows below the oil/water contacts. In the 1980s, by examining cores of show areas, companies began to find oil saturations equivalent to saturations in swept zones of mature waterfloods, making them targets for enhanced oil recovery.

In the 1990s, the industry put together two CO₂ floods just below the main pay zones. As more work was conducted, initial estimates of the oil resource below almost 50 oil fields in the Permian Basin came in at approximately 31 billion barrels. Between 2008 and 2015, RPSEA-funded studies expanded the understanding of these zones and increased initial estimates from 31 billion to almost 200 billion barrels of oil just beneath main pay zones.

Melzer described different types of residual oil zones and how they were formed. He explained that a ROZ was that portion of the reservoir below the oil/water contact where residual oil resided, but the mobile phase was water. He highlighted a 2006 Department of Energy report that positioned a ROZ as an alternative to “transition zones.”

Melzer discussed two RPSEA projects and how that research was being commercialized. One interesting outcome of this work is the Residual Oil Zone Step-by-Step Guide. Melzer described the guide as an attempt to assist a company in evaluating whether a ROZ existed beneath its producing field and where it might exist outside the limits of a field. The guide is intended to help determine the properties of the fluids and rocks within the zone, and how EOR methods may help exploit this zone.

Some of the basic steps Melzer recommends are to gather a multidisciplinary team composed of reservoir, geoscience, petrophysical and geophysical folks to study the area. He encourages operators to document and re-evaluate all data. Once complete, he said to try to screen out all unlikely or poor candidates, and then begin to gather new data in the targeted area.

This event and Melzer’s work are but a couple examples of how RPSEA is advancing the oil and gas industry. The organization’s focus on making advanced technology and best practices available to all operators is clear in the results of this work. I am eager to watch as RPSEA moves into the next chapter of this ever-evolving industry.

You can read more about Melzer’s work in the “small producer” section of RPSEA’s website at www.rpsea.org.