Technology Roadmap Considers R&D Challenges For The Next Decade

The Petroleum Technology Transfer Council and the Research Partnership to Secure Energy for America have had a strong relationship for many years. RPSEA has been responsible for helping fund and develop safe and environmentally sensitive technologies that support the U.S. oil and gas industry, and PTTC has been responsible for transferring that technology to industry. Together, both organizations have been supporting the U.S. oil and gas industry for more than 20 years. Now, with the recent publication of the oil and gas technology roadmap, Keeping It Going For the Long Haul—The Easy Stuff is Gone, PTTC and RPSEA look forward to continuing to provide U.S. operators with access to the latest technology and best practices from some of the industry’s best minds.

The RPSEA plan outlines the coming decade’s challenges and research needs in the U.S. on- and offshore oil and gas industry. The authors take advantage of RPSEA’s extensive network of leading subject matter experts to look at challenges best addressed through investments in research and development, providing value in terms of energy security, jobs and the economy, while improving safety and environmental performance for the next decade.

This plan was developed through member and key stakeholder involvement. RPSEA conducted surveys, focused program advisory meetings and meetings with industry leaders. RPSEA also asked leaders to identify the grand technical challenges, then identify the target enabling technology needs, and the R&D required to develop those technologies. The plan also incorporates information from publications, presentations and reports from technical organizations, government, science and industry associations.

The plan provides a roadmap for the R&D opportunities that will allow the United States to continue to be the leading producer of oil and gas and natural gas into the future. It includes:

- Technologies that will improve safety and environmental performance;
- Onshore emerging and developing shale plays;
- Offshore satellite fields; and
- Improved recovery for onshore and offshore reservoirs.

“No one knows what the energy industry will look like in the next 10 years, but we do know in order to maintain our leadership position, the United States must compete on a global basis, take full advantage of rapidly evolving technology and address the variety of challenges we will face,” reflects RPSEA President Tom Williams.

The technology roadmap is evolutionary and builds on the foundation of RPSEA’s successful program the past 10 years of working with the industry, academia and the U.S. Department of Energy’s National Energy Technology Laboratory. The rapid transfer and application of new ideas and results will be facilitated by the continuing involvement of producers and service companies in planning and executing the research program. The emphasis on safety and environmental sensitivity reflected in this plan will require more direct involvement and communication with the regulatory agencies and the environmental community.

“The safe and environmentally sensitive delivery of secure domestic hydrocarbon resources to the citizens of the United States is not the only outcome of the research conducted under this program” Williams explains. “While the United States is currently a leader in terms of the development of oil and gas (in particular, the onshore unconventional shale resources), other nations are beginning to see these resources as an important component of a plan to move toward a lower-carbon, sustainable energy mix. While development of these resources in the United States directly yields thousands of high-paying domestic jobs, research efforts funded by RPSEA’s program are helping to keep U.S. companies and universities in the forefront of energy technology worldwide.”

Organizations such as RPSEA and PTTC are key to the continued development of research and innovation that will be necessary as the U.S. oil and gas industry moves into the next decade. Technological advances have allowed us to increase production while decreasing dependence on foreign production. Public/private partnerships have proven an effective way to move technology forward; and while industry has been quick to respond to technology development, some innovations will continue to require government investment. Ideally government and industry investments yield some of the best results.

As RPSEA and PTTC continue their work in the U.S. oil and gas industry, it is important to advocate both locally and federally to seek support for these important programs. Since its inception, RPSEA—working with NETL—successfully has managed more than 170 projects utilizing $350 million including cost share. The projects are already commercial, have improved safety, reduced environmental risk and increased energy security. The research has generated more than $150 billion in direct economic value from jobs, royalties and revenue and has yielded more than $40 billion in environmental damage mitigation. As evidence of its successful technology transfer program, more than 5,000 articles have been published documenting their results.

Copies of the report can be found at rpsea.org.

JEREMY VISCOMI is vice president of global marketing for Premier Oilfield Group in Houston and Mid-Continent regional lead for the Petroleum Technology Transfer Council. For almost 20 years, he has played an integral role in many oil and gas industry technical conferences and special events.