

DOE's Better Plants program helps a diverse group of manufacturers leverage opportunities for innovation, training, and new technology. This includes AMO R&D Consortia, which are collaborative efforts that leverage common assets to the benefit of all stakeholders in targeted technical areas of manufacturing, overcoming the significant manufacturing challenges that are impractical for any single entity to bear alone. DOE has funded five institutes as a part of Manufacturing USA, a government-wide initiative focused on coordinating public and private investment in emerging advanced manufacturing technologies. Manufacturing USA brings together industry, academia, and government partners to leverage existing resources, collaborate, and co-invest to advance manufacturing innovation and accelerate commercialization. Better Plants partners can directly benefit from these institutes by joining them as official members.



The [Rapid Advancement in Process Intensification Deployment \(RAPID\) Institute](#) is focused on process intensification (PI), including modular chemical process intensification (MCPI) approaches.

### RAPID

RAPID's is building a dynamic community of practitioners who collectively research, develop and advance technologies and workforce development for PI and modular designs. PI and MCPI can potentially dramatically reduce energy, capital and operating cost and make U.S. manufacturing and our workforce more competitive. PI combines multiple process steps into a single unit and MCPI creates a paradigm shift from "economies of scale" to standardize new modular manufacturing techniques such that economies of mass production can be achieved without significant increase in scale, thus enabling use of smaller scale, distributed resources.

The RAPID institute members are at the forefront of building this community of practitioners in PI and MCPI. By investing in a portfolio of research and development members will ultimately boost energy productivity and energy efficiency in the manufacturing of chemicals, oil and gas, pulp and paper and renewable bioproducts. The institute is set up into six focus areas and Workforce Development.

- Chemical and Commodity Processing
- Natural Gas Upgrading
- Renewable Bioproducts
- Intensified Process Fundamentals
- Modeling and Simulation
- Module Manufacturing
- Workforce Development

### **Better Plants Partner in Action: The Dow Chemical Company**

A number Better Plants partners have joined RAPID to be at the forefront of MCPI research and development. For example, The Dow Chemical Company is one of over 130 entities from industry, academia, and state and local government to agree to partner on this initiative. By reducing the energy consumption and costs of chemical reactions partners are also identifying new opportunities to improve energy performance at their own facilities and meet their own Better Plants goals. Participating members have the opportunity to take part in the roadmapping of the institute, serve on the Governing Board technical advisory board and member council, and take part in IP licensing options for completed projects.

To learn more about how to access numerous manufacturing institutes in the Manufacturing USA network:

**Email:**

[Betterplants@ee.doe.gov](mailto:Betterplants@ee.doe.gov) or

Contact your Technical Account Manager

**Visit:**

[RAPID's Website](#)

[DOE's Advanced Manufacturing Office](#)