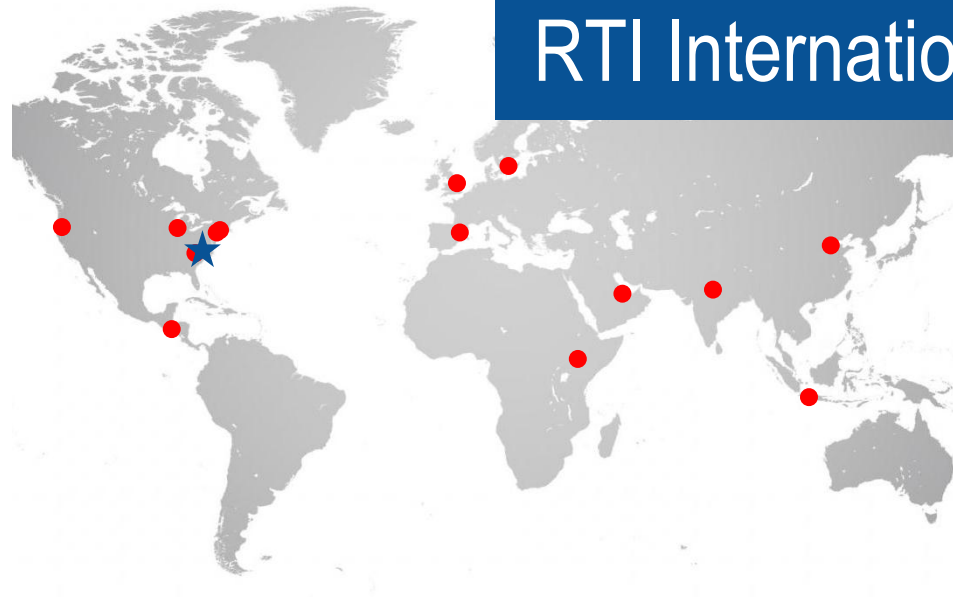


RTI International

Support for Energy Technology Development

February 2013

RTI International



*Mission: Improving
the human condition
by turning knowledge
into practice*



- **One of the world's leading research organizations**
 - 3,700 professionals in over 75 countries
 - High-quality scientific staff with tremendous breadth
 - Research budget >\$750MM
- **Business units**
 - Engineering & Technology
 - Discovery & Analytical Sciences
 - Social, Statistical & Environmental Sciences
 - International Development
 - Health Solutions

RTI Energy Technologies



Biomass
and Biofuels

Shale
Gas

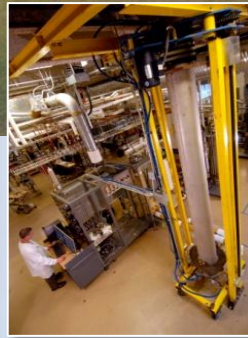
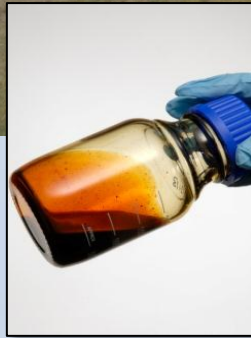
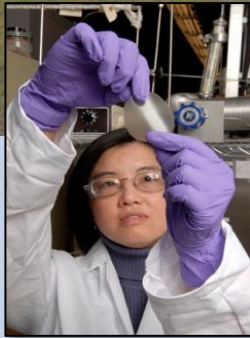
Syngas

Carbon
Capture

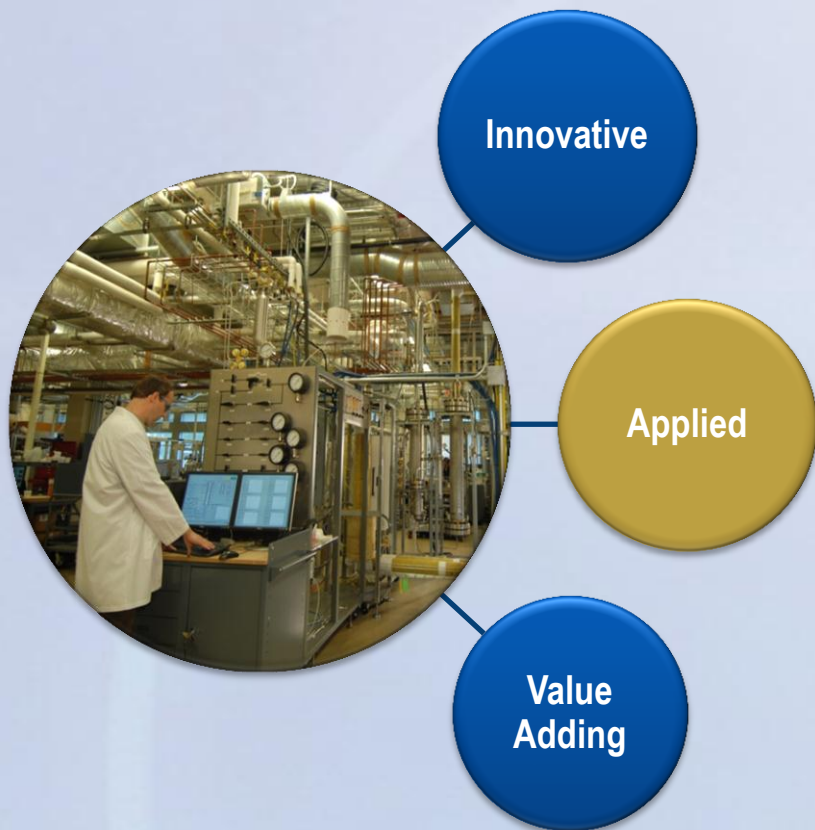
Industrial
Water

Lighting

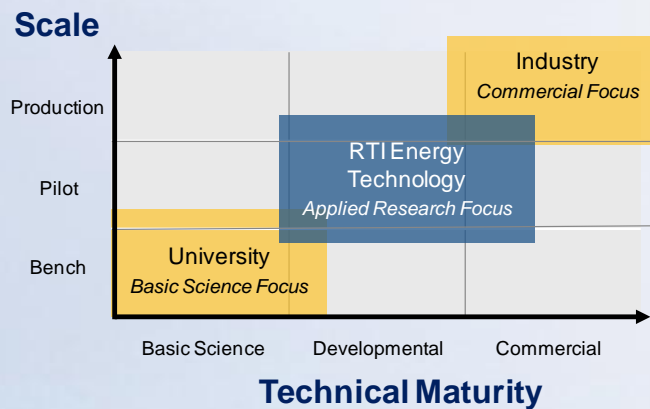
- Developing advanced technologies for energy applications
- Partnering with the largest energy and chemical companies in the world
- Leveraging state support to enter new R&D areas and build technology platforms



Smart Solutions for Tough Problems



- Translational technology development: Bridging gap from concept to commercial success
- Broad capabilities lab- to demonstration scale R&D
- Process engineering applied to energy problems
 - World-class reputation in this sector
 - Unique in NC



Projects supported by NC Funds (FISCAL YEAR 2012–2013)

Federal Dollars Leveraged through Use of State Funding (FISCAL YEAR 2012–2013)		
Project/Proposal	NC Funds Used (\$)	Federal Dollars Leveraged (\$)
Conversion of CO ₂ into Commercial Materials	50,000	200,000
Porous Polymers for Vehicular Natural Gas Storage	100,573	402,292
Hybrid Membrane System for Industrial Water Reuse	106,468	425,872
CO ₂ solvent and capture process {Add-on}	70,000	280,000
CO ₂ Electroreduction for Electrofuel Applications	25,126	93,750
Solid State Lighting Luminaries {Add-on}	53,287	213,148
Unallocated	94,546	378,184
Total	500,000	2,000,000

Advanced Process Technology Scale-up Facility

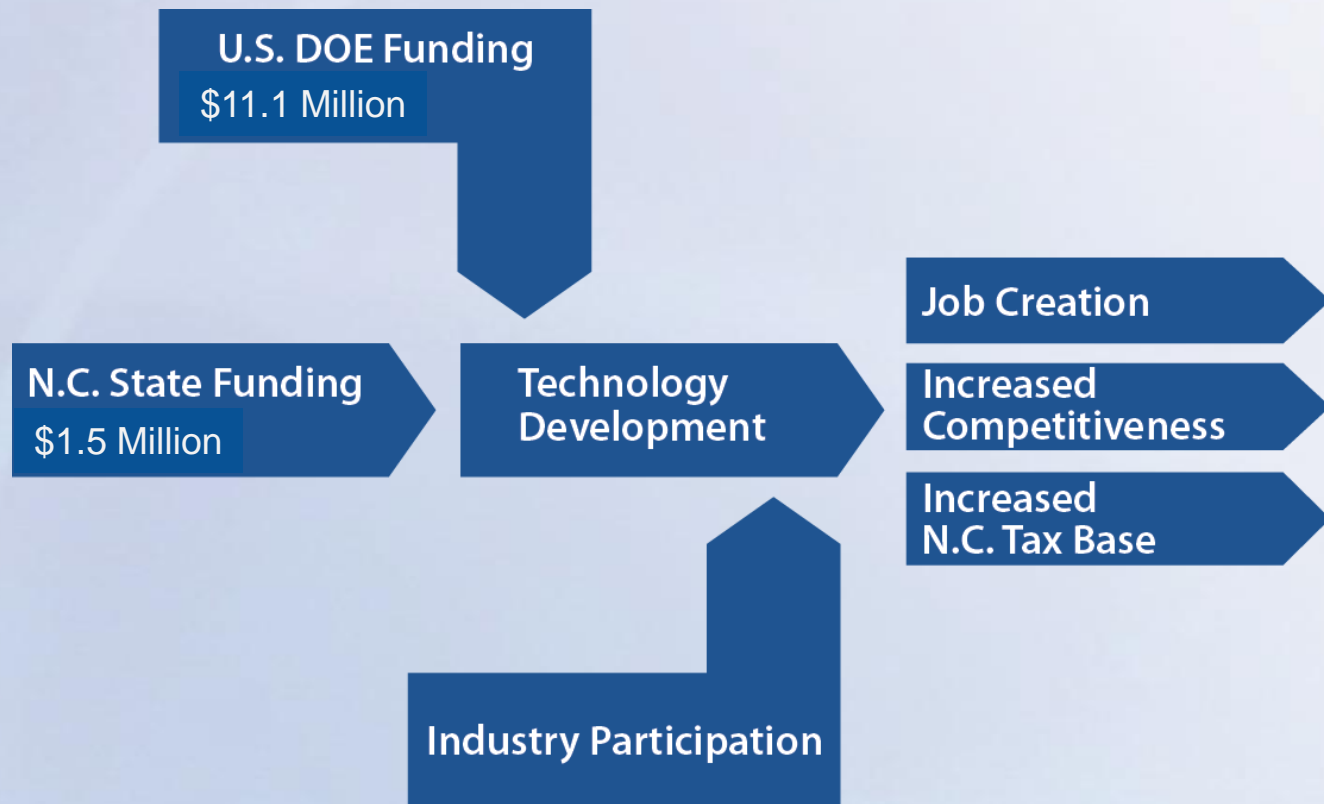
- R&D facility for development and scale-up of new process technologies
- Can support \$10+ million pilot projects
- Can support and be outlet for university energy research
- Further job creation in North Carolina
- RTI capital deployed: \$997,500

**Energy Technology
Development Facility**
3,000 sq. ft.
~40 ft. ceiling



Taken 01/10/13

Leveraging of State Funds: 3-year Totals



Summary



- Energy R&D at RTI is expanding
 - Strategic new areas: water, natural (shale) gas
 - Large-scale R&D facility
- State cost-share support key to growth
 - New technology platforms
 - Development of critical early inventions
 - *Technology base for future commercialization of new energy technologies*

Biomass
and Biofuels

Shale
Gas

Syngas

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Industrial
Water

Lighting