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## Fact Sheet: Solix Biofuels Inc. and biofuels research at Colorado State University

- Biofuels are produced from plant-based materials that are transformed by physical, chemical and/or biological processes. Ethanol and diesel are the most recognized forms of biofuels, but others, such as butanol and hydrogen, may become important.
- Colorado State is a leader in this area, offering one of the first courses on biofuels in the country.
- Solix Biofuels Inc., a startup company, works with Colorado State's mechanical and chemical engineers and biologists to commercialize technology that can cheaply mass produce oil derived from algae and turn it into biodiesel - an environmentally friendly solution to high gas prices, greenhouse gas emissions and volatile global energy markets.
- Solix officials plan to commercialize the technology over the next two years. After ramping up to widespread production, the company expects to eventually compete commercially with the wholesale price of crude petroleum.
- Solix officials estimate that widespread construction of its photo-bioreactor system could meet the demand for the U.S. consumption of diesel fuel - about 4 million barrels a day - by growing algae on less than 0.5 percent of the U.S. land area, which is otherwise unused land adjacent to power plants and ethanol plants. The plants produce excess carbon dioxide, which is necessary to turn algae into oil.
- In addition to producing biodiesel, the process would prevent a large portion of the greenhouse gases produced by coal-burning power plants from being expelled directly into the atmosphere.

### Other major areas of biofuels research at Colorado State:

- **Agricultural research:** Researchers in the College of Agricultural Sciences have international reputations in crop breeding, crop and land management, pest management, water resource issues and arid land agriculture.
- **Plant biotechnology:** Expertise exists in plant molecular biology and synthetic biology applications to plants.

- **Biomass characterization:** Researchers in chemical engineering and microbiology have studied enzymatic hydrolysis of cellulosic materials and thermal and chemical pretreatment technologies.
- **Bioprocessing:** The chemical engineering program has been involved in value-added bioprocessing of agricultural materials since its inception.