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### SEAL Q&A: Thermoelectric Generators with Recollect Energy



JP Dowling of Recollect Energy

JP Dowling of the University of Houston attended the Austin Technology Incubator's Student Entrepreneur Acceleration & Launch (SEAL) program this summer to work on Recollect Energy, a company that manufactures high-temperature thermoelectric generators for commercial fleets.

Funded by the Kauffman Foundation, SEAL is a selective, nine-week, mentor-driven program designed to help student teams tackle the most difficult, deal-killing questions of their new ventures. SEAL culminates in Decision Day, where teams announce whether their business is a "go" or a "no go." Two-thirds of SEAL graduations raise capital or successfully bootstrap their companies to market.

#### Q. How did you learn about SEAL?

A. At U of H there are several different stages of the entrepreneurial ecosystem. There is an undergrad degree program that's just entrepreneurship. It culminates in tech transfer, where we evaluate technologies from the university... (Recollect Energy is) one of two teams that is still continuing from that program. So I graduated from the Center for Entrepreneurship. The person who runs

our program referred us to ATI and SEAL.

#### Q. Summarize Recollect Energy for me.

A. We make thermoelectric generators that convert heat into electricity. So these are small modules — something like a 4 X 4-centimeter module could convert and generate about 20 watts of electricity. There's no sunlight needed. You can put these anywhere there's heat, as long as there's a hot side and a cool side. You can harvest that. We're looking at a lot of different applications. We're looking at exhaust on 18-wheeler trucks. So an engine of any vehicle ... are about a third efficiency — a third is actually fuel used to move the truck, a third of it is waste heat through the exhaust, and a third of it is waste heat through the radiator. So we can make that whole system more efficient by capturing these sources of waste heat, converting them to electricity, and allowing that to power the truck's electric systems.

#### Q. Are you focusing on consumer cars or commercial trucks?

A. Right now, because trucks drive so much more and they spend so much on fuel a year, to put this on a truck would pay for itself a lot faster. The truck would drive 100,000 miles a year or more, whereas consumer cars only drive around 10,000 miles a year. It would not make as much sense to pay for that, because it would take longer to pay off. If we scale up and the cost is really cheap, then we can totally put it in cars.

#### Q. What stage is your prototype in?