
2008 Solar Annual Review Meeting

Session: CSP Dish Systems

Company or Organization: Infinia Corporation

**Funding Opportunity: CSP Advanced Systems FOA Solicitation
for 30-kW Free Piston Stirling**



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Relationship to Solar Program Goals

“Adapt proven highly reliable maintenance-free Free-Piston Stirling Engine (FPSE) technology to utility scale solar dish configuration to make CSP cost competitive in the intermediate power markets (~7¢/kWh) by 2015 and in baseload power markets (~5¢/kWh) by 2020.”

1. Project overview

- a) Project description: Expand proven FPSE life and reliability to 30-kW range using recent Multi-Cylinder FPSE (MCFPSE) innovation
- b) Major FY08 Activities: Preliminary design of 30-kW lab prototype
- c) Planned Milestones: 30-kW lab proto, dish demo, LCOE costing
- d) Budget Table (FTEs, \$FTE, Subcontract Info): \$2.3M DOE, \$1.2M CS
- e) Personnel contributing to the project: Dr. S. Qiu, M. White, B. Penswick

2. Link project to Program Plans & Goals

- a) Solar Multi-year Program Plan: Engine to enable LCOE goals
- b) CSP Subprogram Goals: Component development
- c) Joule Targets: Major contribution with automotive scale production



FY08 Progress Report

1. What has been accomplished thus far?

- a) Technical highlights; what's gone well? what has not gone well?: Contract signed April 16, 2008
- b) Issues that have come up; solutions proposed: N/A
- c) Costing

<i>Infinia Corporation</i>			
Project Beginning Date	FY07 Budget	FY08 Budget	Total Budget
4/16/2008	\$0	\$332,500	\$3.5 million

2. What will be accomplished in the 3rd and 4th Quarters?

- a) Status of milestones: Phase I activities – Preliminary Design and preliminary LCOE analysis – well underway



Future Activities

1. FY09 Planned Activities

- a) Follow-on efforts: Phase II – Complete detailed design and begin fabrication of 30-kW laboratory prototype engine
- b) New directions: Continue as planned
- c) Budget Table (FTEs, \$FTE, Subcontract Info): Cumulative spending will reach \$1.24 million
- d) Projected Milestones: Preliminary and Final design complete, fabrication underway, LCOE estimates updated

2. FY10 and Beyond Ideas

- a) Future Projects: Phase II – Complete lab demonstration; Phase III – Fabricate and test 30-kW dish demonstration
- b) Outside the Box Ideas: Thermal energy storage on dish
- c) Your vision of the solar future: Automotive scale production