Guidelines for Rocket Fund Applications – 2021

Awards: $25,000 - $75,000, with the opportunity to apply again

Eligibility: Incorporated or in process; validated lab technology; raised no more than $3 million equity investment; students & new graduates as well as garage entrepreneurs welcomed; fits technology scope of the Fund; national and international companies qualify as long as entity has interest in establishing California presence; customer site for prototype demonstration either arranged or being finalized, intended to open up an initial market and lead to customer orders or new investment; estimated timeframe for building the first commercial prototype and begin testing with customer: 9 – 12 months.

We look for:

- Strong, third-party validated technologies (e.g. patents, university research, DOE national lab e.g. NREL, ARPA-E or Electric Power Research Institute (EPRI) data, utility field testing or UL certification) or innovative software platforms with early demonstration of market value
- Clear idea of the value proposition of the product, market segments and target customers
- Well-defined use of Rocket Funds with potential customer providing a test site for your technology demonstration

Scope: The Rocket Fund provides competitive grants for funding early commercial prototype development (TRL 5 – 7, DOE*) in cleantech and sustainability startups. Rocket Fund covers: Initial product design; commercial engineering; prototype build out; prototype installation; field testing; equipment purchase; select consulting support for specialized tasks such as programming user interfaces and manufacturing process development and scale up; product certification; lab testing for technology/product validation and manufacturing.

Intellectual Property: If you have applied for patents it is vitally important that the origin, ownership and status of IP be clarified at the time of application. Please ensure all IP questions are completed in the application form.

*** From the Electric Power Research Institute, based on Department of Energy Information**

TRL (Technology Readiness Levels)	
1	Exploratory research transition basic science into laboratory applications
2	Technology concepts and/or application formulated
3	Proof of concept validation
4	Subsystem or component validation in laboratory environment to simulate service conditions
5	Early system validation demonstrated in laboratory or limited field application
6	Early field demonstration and system refinements completed.
7	Complete system demonstration in an operation environment.
8	Early commercial deployment
9	Wide-scale commercial deployment

Topics: General categories:

Rocket Fund Technical Subsectors* (Adapted from Cambridge Research Associates, 2018 Cleantech Report)		
Group	**Subsector**	**Definition**
Renewable Power Manufacturing	Solar Power Manufacturing	Technologies that directly convert solar radiation into electricity or hot water
	Wind Power Manufacturing	Technologies that convert kinetic energy from the wind into electricity
	Water Power Manufacturing	Technologies that convert kinetic energy from water into electricity
	Other Power Generating Manufacture	Technologies that generate electricity from other renewable inputs, e.g. fuel cells, waste heat capture, novel reconfiguration of existing technologies
	Biofuels and Biomaterials	Technologies that produce fuels and materials from non-fossil fuel, biomass-based sources
Energy Optimization	Energy Efficiency and Management	Technologies that allow for more control over energy use and reduce energy consumption, includes robotics, AI and IOT
	Lighting	Technologies that reduce energy use through more efficient lights and lighting systems
	Smart Grid	Technologies that work to optimize electricity transmission and distribution from the point of origin to the end consumer
	Sustainable Mobility	Technologies contributing to the increased efficiency and electrification of transport
	Energy Storage	Technologies that increase the efficiency of or reduce the cost, weight, or environmental problems associated with devices that store energy for use at a later time
Resource Solutions	Waste and Recycling	Technologies that repurpose old materials into new products and reduce or eliminate the quantity and impact of undesired material
	Water and Wastewater	Technologies that lead to the more efficient purification, recycling, and management of water and wastewater
	Advanced Materials	Technologies that use chemicals and other substances to improve resource efficiency or serve as substitutes for more polluting materials
	Environmental Services and Agricultural Solutions	Technologies that protect and allow for the restoration of natural ecosystems or contribute to more sustainable agriculture practices and techniques.
	Emissions Markets and Controls	Technologies that reduce, measure, convert or control the release of greenhouse gases into the atmosphere
*** Includes processes as well as technologies**		

New:

- AI and cleantech
- Alternative materials and additive manufacture
- Clean hydrogen for fuels, industrial processes
- Food Processing industry
- Industrial heat processes and thermal storage
- Robotics – e.g. in agriculture for water savings; industrial manufacturing energy efficiencies

Specific member requests:

- Small, cheap control systems for residential "nanogrid" homes with solar, battery and fuel cells
- Catalytic oxidation of fuels for zero NOx thermal applications
- Spark and other ignition systems for Natural Gas Vehicle (NGV) running on H2 blends
- Home and commercial biogas digesters
- Modular prefab retrofit/structural materials
- Systems integration for buildings – from a functional point standpoint e.g. chip–level OEM systems communications standards for energy, automation, security and environmental controls.
- Efficient water production (e.g. membranes, desalination)
- Efficient water transport (e.g. pumps, Demand Response in water treatment/water conveyance
- Efficient water use in Residential, Commercial and Industrial applications
- Agriculture water use
- Water and wastewater treatment
- Hot water and energy efficiencies

Application Deadline: Rocket Fund applications will be open November 1 – March 1, 2021. Note: we welcome Rocket Fund applications throughout the year; those arriving after the deadline will be considered in the following Rocket Fund intake. The review process and awarding of grants follow closure of the application process. Register with The Rocket Fund program for announcements: stephanie.yanchinski@caltech.edu

The Office of Entrepreneurial Programs, Resnick Sustainability Institute, October 2021