2011 Legislature TPS Report 55798v1

Agency: Commerce, Community and Economic Development

Grants to Named Recipients (AS 37.05.316)

Grant Recipient: Fairbanks Community Food Bank **Federal Tax ID:** 92-0088266

Project Title: **Project Type:** Remodel, Reconstruction and Upgrades

Fairbanks Community Food Bank - Capstone Micro Turbine Purchase and Installation

State Funding Requested: $175,000 **House District:** Fairbanks Areawide (7-11)
One-Time Need

Brief Project Description:

Purchase and installation of a Capestone Micro Turbine to generate both power and space heat for the Fairbanks Community Food Bank.

Funding Plan:

Total Project Cost:	$175,000
Funding Already Secured:	($0)
FY2012 State Funding Request:	($175,000)
Project Deficit:	$0

Funding Details:

No pior funding for this installation has been requested.

Detailed Project Description and Justification:

Three years ago the Fairbanks Community Food Bank installed a coal burning furnace that reduced their heating costs by half. Unfortunately, on February 1st, the Food Bank had a fire that caused extensive damage to their outdoor coal burner forcing them to return to natural gas for space heat. Additionally, the Fairbanks Community Food Bank was already in the process of being pro-active in addressing PM2.5 concerns regarding their outdoor coal burner.

The Capstone Micro Turbine will generate both electricity and space heat, using natural gas to power the unit, potentially cutting the Fairbanks Community Food Bank's utility bills in half, while meeting strict clean-air standards. The installed cost of the Capstone Micro Turbine is $175,000 and the unit has a 15-20 year life expectancy.

This is not new technology, but a new use for an old idea. There are already a few of these systems operating successfully in the Alaska oil field. An added benefit to this micr-turbine is that it would take the Fairbanks Community Food Bank off of the grid, should an emergency arise.

Project Timeline:

This expendure will occur as soon as funding is received.

Entity Responsible for the Ongoing Operation and Maintenance of this Project:

Fairbanks Community Food Bank

Contact Name: Jane Pierson
Contact Number: (907) 465-6841

For use by Co-chair Staff Only:

$175,000 Approved

10:25 AM 5/27/2011

Grant Recipient Contact Information:

Name:	Samantha Kirstein
Title:	Executive Director
Address:	725 26th Avenue
	Fairbanks, Alaska 99701
Phone Number:	(907)456-7267
Email:	Sam@FairbanksFoodBank.org

Has this project been through a public review process at the local level and is it a community priority? ☐ Yes ☒ No

For use by Co-chair Staff Only:

10:25 AM 5/27/2011

Contact Name: Jane Pierson
Contact Number: (907) 465-6841

Capstone Turbine Corporation® is the world's leading producer of low-emission microturbine systems, and was first to market with commercially viable air bearing turbine technology. The company has shipped thousands of Capstone turbines to customers worldwide. These award-winning systems have logged millions of documented runtime operating hours.

Capstone is a member of the U.S. Environmental Protection Agency's Combined Heat and Power Partnership which is committed to improving the efficiency of the nation's energy infrastructure and reducing emissions of pollutants and greenhouse gases.

A UL-Certified ISO 9001:2008 and 14001:2004 company, Capstone is headquartered in the Los Angeles area with sales and/or service centers in the New York Metro Area, Mexico City, Milan, Nottingham, Shanghai, Singapore and Tokyo.

For more information about Capstone Turbine Corporation and its clean-and-green microturbine technology solutions, please visit www.capstoneturbine.com or call 818.734.5300.

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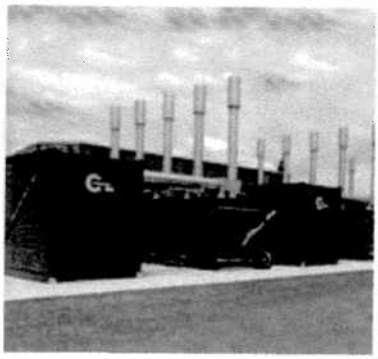
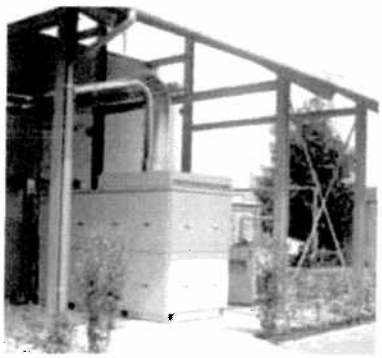
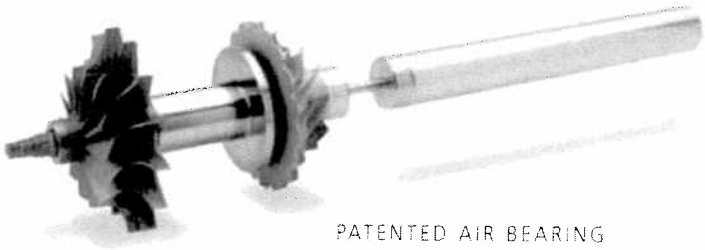
2010 Product Catalog

Reliable power when and where you need it.
Clean and simple.

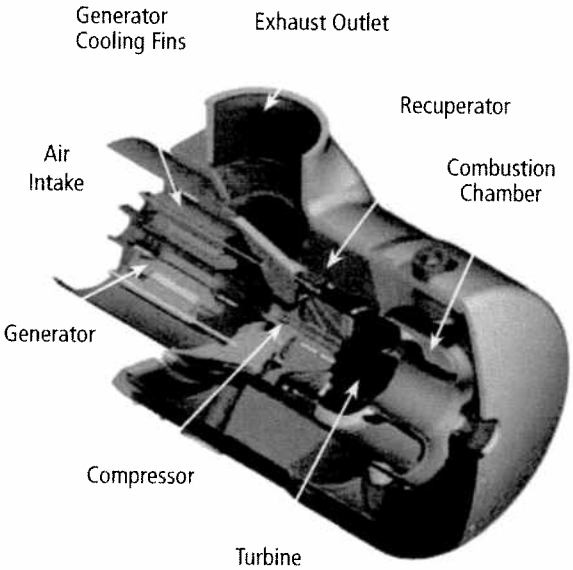
Capstone Microturbines

Capstone microturbines are used in distributed power generation applications including cogeneration, resource recovery, secure power, and hybrid electric vehicles (HEV).



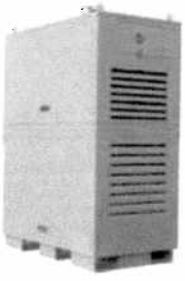
PATENTED AIR BEARING

Low-emission, clean-and-green Capstone microturbines are scalable from 30kW to 10MW. The C1000 Power Package, the world's first megawatt microturbine power system, can be configured into smaller 800kW and 600kW solutions – all within a single ISO-type container. Models are available that operate on: Natural Gas, Propane, Landfill Gas, Digester Gas, Diesel, Bio-Diesel, Aviation, and Kerosene fuels.

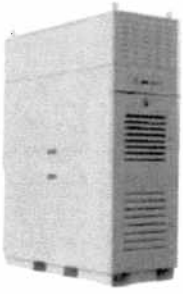


- Ultra-low emissions
- One moving part – minimal maintenance and downtime
- Patented air bearing – no lubricating oil or coolant required
- 5 and 9 year Factory Protection Plans available
- Remote monitoring and diagnostic capabilities
- Integrated synchronization and protection
- Reliable – tens of millions of run hours and counting

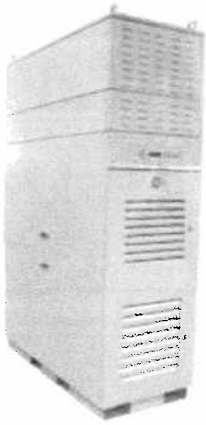
C30



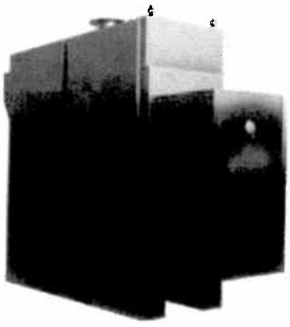
C65



C65 ICHP



C65 CARB

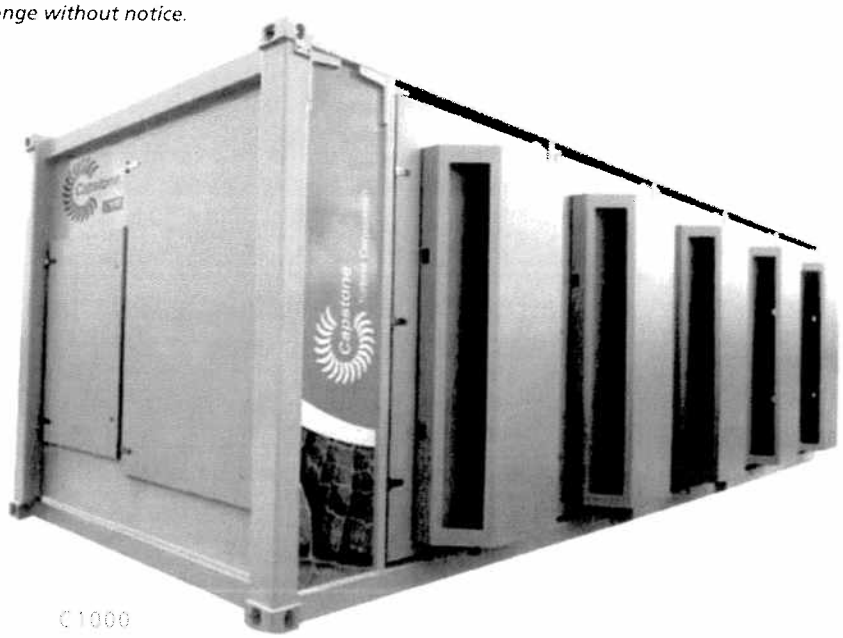


HAZARDOUS LOCATIONS

Model	Fuels	Power Output [1]	Electrical Efficiency	Exhaust Gas Flow		Exhaust Temperature		Net Heat Rate		Dimensions [2] (W x D x H)	
		kW	%	kg/s	lbm/s	C°	F°	MJ/kWh	btu/kWh	m	in
GASEOUS FUELS [3]											
C30 LP	NG	28	25	0.31	0.69	275	530	13.8	13,100	0.76 x 1.5 x 1.8	30 x 60 x 70
C30 HP	NG, P, LG, DG	30	26	0.31	0.69	275	530	13.8	13,100	0.76 x 1.5 x 1.8	30 x 60 x 70
C30 HZLC [4]	NG	30	26	0.32	0.70	275	530	13.8	13,100	0.87 x 2.9 x 2.2	34 x 112 x 85
C65	NG, P	65	29	0.49	1.08	309	588	12.4	11,800	0.76 x 1.9 x 1.9	30 x 77 x 76
C65 ICHP	NG, P, LG, DG	65	29	0.49	1.08	309	588	12.4	11,800	0.76 x 2.2 x 2.4	30 x 87 x 93
C65 CARB	NG	65	28	0.51	1.13	311	592	12.9	12,200	0.76 x 2.2 x 2.6	30 x 87 x 103
C65 CARB	LG, DG	65	29	0.49	1.08	309	588	12.4	11,800	0.76 x 2.2 x 2.6	30 x 87 x 103
C65 HZLC [4]	NG	65	28	0.50	1.09	325	617	12.9	12,200	0.87 x 3.2 x 2.3	35 x 128 x 90
C200 LP	NG	190	31	1.3	2.9	280	535	11.6	11,000	1.7 x 3.7 x 2.5	67 x 150 x 98
C200 HP	NG, P, LG, DG	200	33	1.3	2.9	280	535	10.9	10,300	1.7 x 3.7 x 2.5	67 x 150 x 98
C200 HZLC [4]	NG	200	33	1.3	2.9	280	535	10.9	10,300	1.7 x 3.1 x 2.9	66 x 122 x 114
C600 LP	NG	570	31	4.0	8.8	280	535	11.6	11,000	2.4 x 9.1 x 2.9	96 x 360 x 114
C600 HP	NG, P, LG, DG	600	33	4.0	8.8	280	535	10.9	10,300	2.4 x 9.1 x 2.9	96 x 360 x 114
C800 LP	NG	760	31	5.3	11.7	280	535	11.6	11,000	2.4 x 9.1 x 2.9	96 x 360 x 114
C800 HP	NG, P, LG, DG	800	33	5.3	11.7	280	535	10.9	10,300	2.4 x 9.1 x 2.9	96 x 360 x 114
C1000 LP	NG	950	31	6.7	14.7	280	535	11.6	11,000	2.4 x 9.1 x 2.9	96 x 360 x 114
C1000 HP	NG, P, LG, DG	1000	33	6.7	14.7	280	535	10.9	10,300	2.4 x 9.1 x 2.9	96 x 360 x 114
LIQUID FUELS [5]											
C30	D, BD, A, K	29	25	0.31	0.69	275	530	14.4	13,700	0.76 x 1.5 x 1.9	30 x 60 x 70
C65	D, BD, A, K	65	29	0.49	1.08	309	588	12.4	11,800	0.76 x 2.0 x 2.1	30 x 77 x 76
C65 ICHP	D, BD, A, K	65	29	0.49	1.08	309	588	12.4	11,800	0.76 x 2.2 x 2.4	30 x 87 x 93
C200	D, A, K	200	33	1.3	2.9	280	535	10.9	10,300	1.7 x 3.7 x 2.5	67 x 150 x 98

[1] Nominal full power performance at ISO conditions: 59° F, 14.696 psia, 60% RH
[2] Height dimensions are to the roofline. Exhaust outlet can extend up to 7 inches above the roofline.
[3] Models available to operate on these different fuels: NG – Natural Gas; P – Propane; LG – Landfill Gas; DG – Digester Gas
[4] Hazardous Location units suitable for use in potentially explosive atmospheres (UL Class I Division 2 or Atex Class I Zone 2)
[5] Models available to operate on these different fuels: D – Diesel; BD – Bio-Diesel; A – Aviation; K – Kerosene
Specifications are not warrantied and are subject to change without notice.

C200



C1000

Our Company

About Us
Leadership
Capstone's Value Proposition
Code of Business Conduct
Locations
Global Case Studies
FAQ
Distributors
Careers

Global Case Studies - United States - West

Capstone Installations:

- United States West
- United States East
- Canada
- Latin America
- Africa
- Europe
- Russia
- Asia
- Asia Pacific

United States - West

- **The Ronald Reagan Presidential Library, Simi Valley, California -- Public Facility**
  Sixteen Capstone C60 microturbines running on natural gas provide electricity for the Air Force One Pavillion.
  Download the Case Study
- **Jonah Field, Wyoming – Oil & Gas**
  The remote Jonah Field wellsite uses a Capstone C30 microturbine to generate electricity to run the site's pumps.
  Download the Case Study
- **Oregon Health & Science University, Portland, Oregon -- Healthcare/Education**
  Five C60 ICHP microturbines used in a CHP application have reduced energy costs at this center for health and healing.
  Download the Case Study
- **Communication Company Data Center -- Data Center/Telecom**
  A world-renowned engineering and construction firm headquartered in downtown Houston uses an array of six Capstone MicroTurbines for secure power to ensure that their data center remains up and running no matter what happens on the utility grid.
  Download the Case Study
- **Pierce College, Woodland Hills, California -- Education**
  Six Capstone microturbines provide heating and onsite power at this Southern California college.
  Download the Case Study
- **Ramon Station, New Mexico -- Oil & Gas**
  Fifteen 65kW microturbines provide the primary power for this oil pipeline booster station in New Mexico.
  Download the Case Study
- **The Ritz-Carlton, San Francisco -- Hospitality**
  Four 60kW Capstone microturbines provide cooling, heating, and power to the prestigious Ritz-Carlton hotel in San Francisco.
  Download the Case Study
- **Kenai, Alaska -- Oil & Gas**
  A Capstone C30 microturbine powers this remote gas transmission site in Alaska.
  Download the Case Study
- **Tahoe Center for Environmental Studies, Lake Tahoe, California -- Education**
  A Capstone C30 microturbine helps the Tahoe Center for Environmental Studies in California achieve LEED® certification.
  Download the Case Study
- **Capstone Turbine Corporation, Chatsworth, California -- Office Building**
  Capstone's Corporate Headquarters located in Chatsworth, California.
  Download the Case Study
- **Citibank, La Jolla, California -- Office Building**
  A Capstone microturbine provides electricity, cooling, and heating to Citibank in La Jolla.
  Download the Case Study
- **Santa Cruz County Jail, Santa Cruz, California -- Public Facility**
  This county jail uses two Capstone microturbines for electricity and heating.
  Download the Case Study
- **Simpkins Family Swim Center, Santa Cruz, California -- Public Facility**
  Two Capstone microturbines help control power costs at this recreation center in Santa Cruz.
  Download the Case Study
- **Foothill College, Los Altos Hills, California -- Education**
  The pool at Foothill College is heated by four C60kW Capstone ICHP microturbines.
  Download the Case Study

Products & Solutions

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Solutions

Scalable. Efficient. Reliable. Innovative.

Derived through advanced engineering based on proven turbine design, microturbines represent a watershed energy management solution. Transforming the way businesses think about energy production, Capstone solutions reduce energy costs, ensure power availability, and help preserve the environment with its near-zero emissions profile. Unlike traditional back-up power, Capstone solutions support everyday energy needs and generate favorable payback - ***today.***

CHP Capstone CHP systems conserve energy and cut operational costs by creating two forms of energy: electricity and heat.

CCHP The heat output of Capstone MicroTurbines can be used to both heat and air condition your facility via absorption cooling.

Secure Power Capstone MicroTurbines can operate connected to a utility grid or provide stand alone power to critical loads.

Resource Recovery: Biogas Capstone MicroTurbines can cleanly burn waste gases to create renewable power and heat.

Resource Recovery: Oil and Gas Capstone MicroTurbines reliably power onshore and offshore operations using unprocessed wellhead gas.

Hybrid Electric Vehicles Capstone's C30 and C65 microturbines operate in conjunction with the on-board battery pack to provide continuous electrical power to transit buses and cars.

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