SECA Annual Workshop

Cummins Power Generation

Corporate Overview

March 21, 2002

Washington, DC

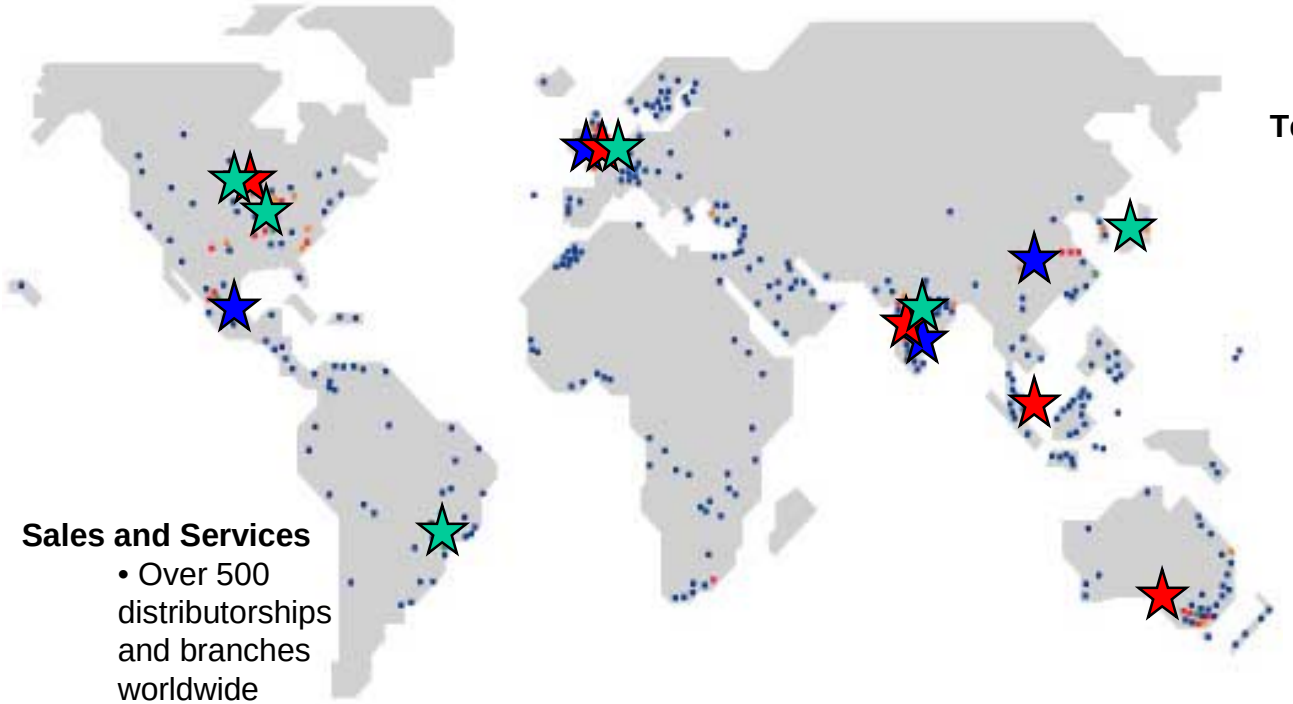
Power Generation

Cummins Overview

Cummins Inc.

Power Generation Business Unit	Engine Business Unit	Filtration Business Unit
$1.6B	$4.0B	$1.0B

Worldwide Presence



Technical Centers
- Columbus, Indiana
- Darlington, England
- European Engine Alliance,High Wycombe, England
- Fridley, Minnesota
- Industrial Power Alliance, Oyama, Japan
- Pune, India
- Sao Paulo, Brazil

Sales and Services
- Over 500 distributorships and branches worldwide

Component Manufacturing
- Ahmednagar, India
- San Luis Potosi, Mexico
- Stamford, England
- Wuxi China

Genset Manufacturing
- Minneapolis, Minnesota
- Ramsgate, England
- Singapore
- Adelaide, Australia
- Daman, India

Parts Distribution Centers
- Beijing, China
- Mechelen, Belgium
- Memphis, Tennessee
- Pune, India
- San Luis Potosi, Mexico
- Sao Paulo, Brazil
- Scoresby, Australia
- Shanghai, People's Republic of China
- Singapore

Cummins Power Generation Americas
Minneapolis Headquarters and Manufacturing

1,000,000 ft^2
1500 employees

Large Genset Assembly

230-500 kW Assembly

500-1500 kW Assembly

RV Genset and Wiring Harness

Wiring Harness Fabrication

Electronics Assembly

Electronic Assembly Clean Room

Stationary Power Markets

Telecommunications

Standby

Residential

Distributed Generation

Mobile Power Markets

Recreational Vehicle

Portables

Marine

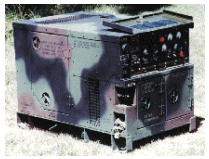
Commercial
Mobile

Rental

Power Generation Technology Evolution

Engine Driven Gensets

Variable Speed Gensets



Commercial & Military Variable Speed Engine-Driven Gensets

Truck APU

Military Portable

Switches & Switchgear

Micro-Turbine Gensets

Fuel Cell Power Systems

Hybrid Electric Vehicle

Mature

Emerging

Future

CPG Overview -- Competencies

- Controls
- Power Electronics
- Fuel Systems
- Packaging/System Integration
- Noise and vibration control
- Switchgear
- Engines
- Generators

How does the fuel cell fit in?

- Important for both current and emerging markets

- Volume will develop starting from key existing and emerging markets

Assessment of Fuel Cell Attributes

- **Near term** -- fuel cells offer
  - incremental emissions improvements
  - improved efficiency
  - maintenance benefits over engine gensets
  - *high initial costs are a significant obstacle*

- **Longer term** -- efficiency gains and lower costs will lead to stronger economics

CPG Overview -- Fuel Cell Markets

Existing Markets

Recreational Vehicle

Telecommunications

Commercial
Mobile

Residential

New markets

- Residential
- Distributed Generation

Distributed Generation

Validating Fuel Cells

Why is Cummins interested in fuel cells?

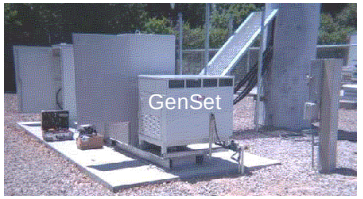
Recreational Vehicle

Residential

Commercial
Mobile

- Low Noise
- High Efficiency
- Low Emissions
- Low Maintenance / Long Life

Fuel Cells meet defined market needs...



Telecommunications

Cummins Power Generation

SECA Program

SECA helps bridge cost of moving from Lab to Commercialization Process

SECA drives research needed to get cost to a commercially competitive level -- $400 / kWe

SECA funding enables the process

CPG - SOFCo Team

Power Generation

Clean Energy for the World
SOFCo
a unit of McDermott International

Commercialization Elements

- Product Definition
- Controls & Power electronics
- Balance of Plant (BOP)
- System integration
- Manufacturing
- Marketing
- Distribution & Sales
- Support

→ ***Prove Cost***

Technology Elements

- Cell Technology
- Stack
- Hot Box Assembly

→ ***Prove the Cell and Stack Technology***

→ ***Prove Cost***

Summary

SECA -- get it out of the laboratory

Prove Technology

Prove Cost

Cummins Power Generation -- commercialize the product...

…for existing markets

…for new markets

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