

I N F I N I A

Distributed Solar Power



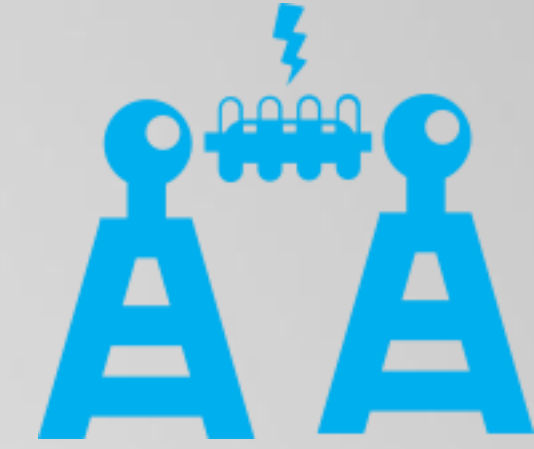
1.3 BILLION

People in Emerging
Markets Without
Electricity



FOSSIL FUELS

Limited Access to
Fossil Fuels

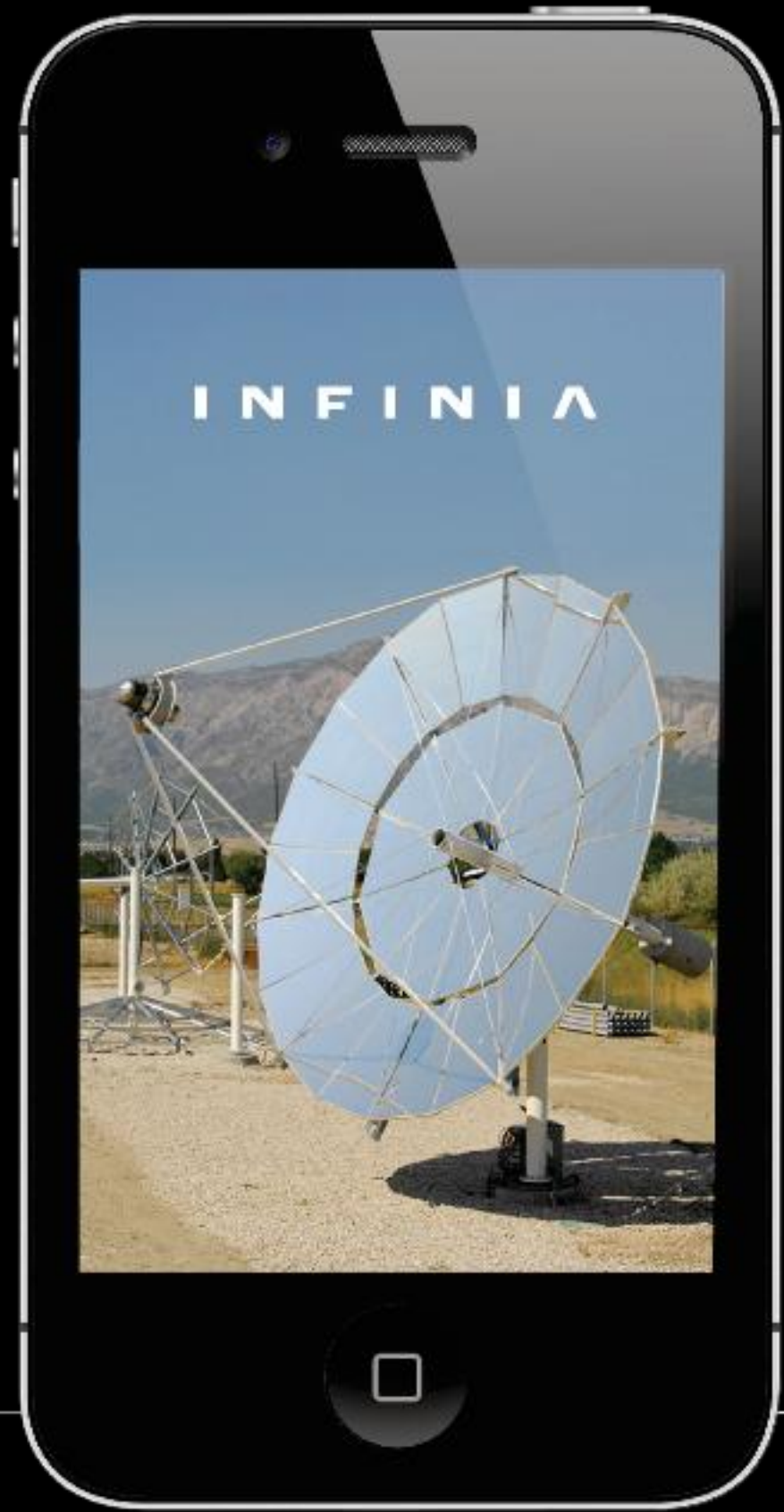


POWER-GRID

No Power-grid
Infrastructure

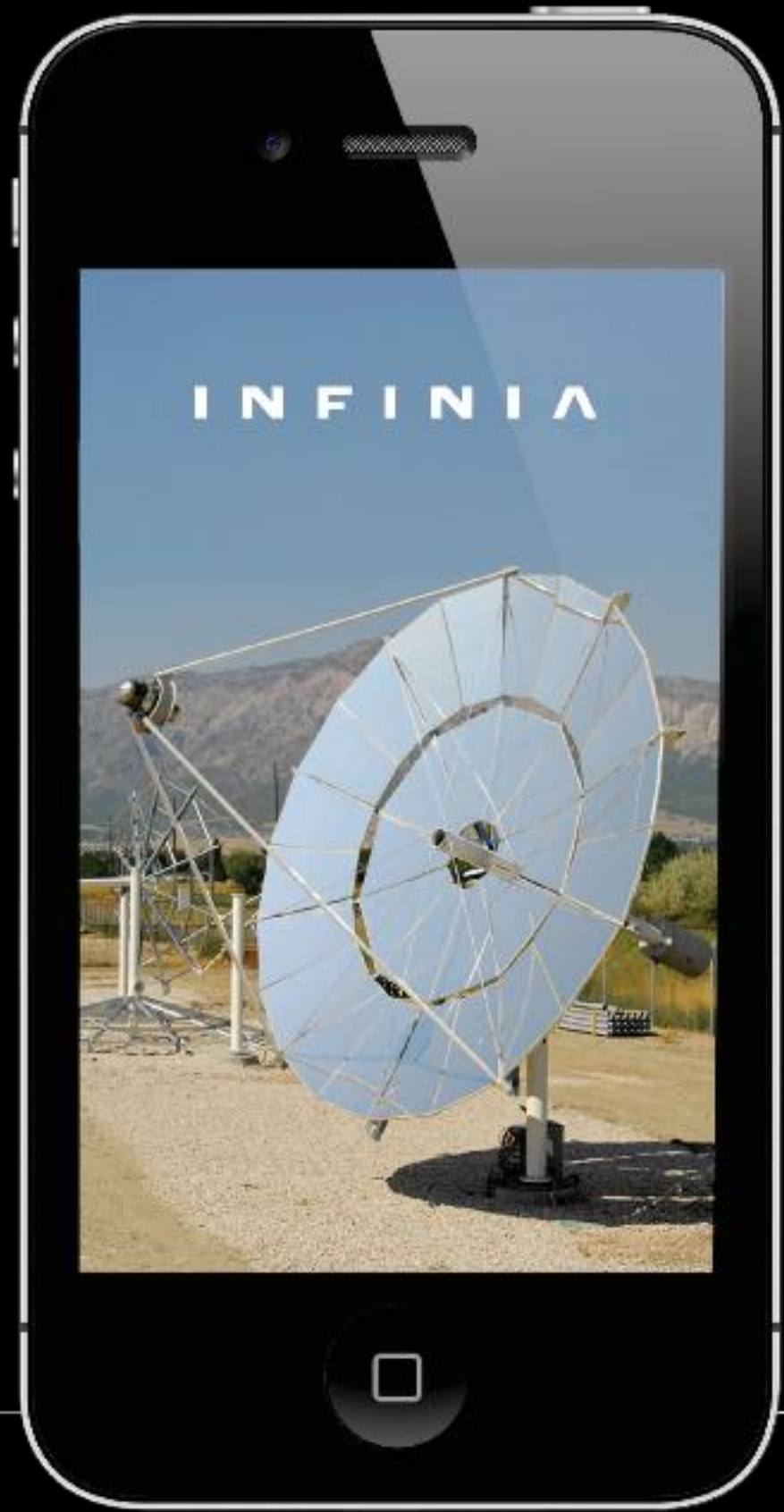
A formidable challenge for most.

A massive opportunity for Infinia.



These same emerging markets leapfrogged challenges with access to traditional telephone infrastructure through

RAPID MOBILE ADOPTION



Lack of Telephony
because of:

- No Telecom Infrastructure
- Lack of Access to Capital
- Local vs Regional Demand

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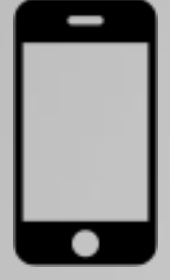
**SEVERLY LIMITED
ECONOMIC
OPPORTUNITES**



ALONG COMES MOBILE TECHNOLOGY

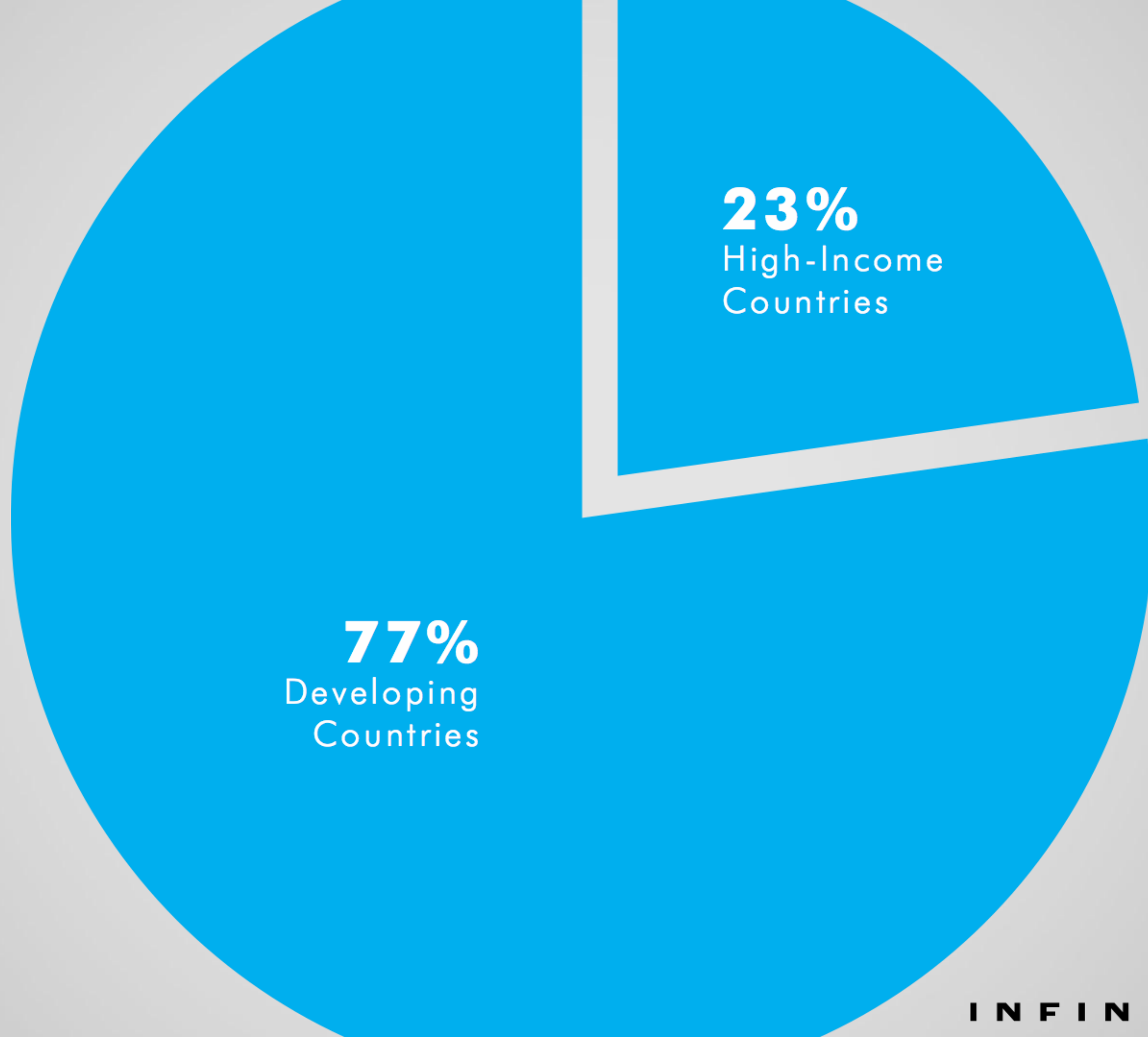
Opening the door for broad telephone access.
Adoption is driven by:

- Micro-financing/leasing
- Business model for locals



5.9 BILLION

Mobile
Subscriptions
Worldwide



Mobile revolution has set the stage for highly-localized energy economies in emerging markets.

SIMILAR HURDLES

- No power-grid infrastructure
- Limited access to fossil fuels
- Local demand overwhelming regional capacity

INCREASING DEMANDS

- New need to power cell towers and phones
- Awareness of powered economies
- Greater knowledge of technology

MOBILE ENABLERS

- Micro-financing/leasing
- Cell tower power solutions

Powering developing countries with distributed solutions.



Augment grid-connected cities via utility-scale solar



Power cell towers and phone charging stations



Power/augment micro-grids for 24/7



Optimize micro-grid/ distributed generation

What is required to leapfrog traditional power infrastructure for emerging markets' electricity needs?

LOCAL FUELS

24/7 NEEDS

LOW-COST

INDIGENIZED

Use of locally available fuel sources in the right quantities

Variety of configurations to meet the unique, 24/7 needs of each territory

Low-cost operation with minimal maintenance requirements

Products that can be indigenized to support local economies

Infinia's technology is uniquely capable of meeting the needs of emerging markets.



Fuel agnostic engine

Solar, biomass, biodiesel, natural gas, diesel



Products for variety of needs

Utility-scale, microgrid, remote/village, field operations



Low-cost, minimal maintenance operation

NASA Deep-Space Certified maintenance free engine



Product components can be sourced and manufactured locally

Infinia's path to the emerging market opportunity.



POWERDISH™



MULTI-FUEL
GENERATOR



SOLAR/FUEL
HYBRID

Infinia's Free Piston Stirling Generator

External Heat – solar, waste heat

Burner – biogas, diesel, liquid fuels

Zero Maintenance Generator

Water for mirror cleaning only

hermetically sealed: Free Piston design
flexure bearings/gas dynamics “lock in” the cycle
no lubricants; no seals; no touching parts

Robust & Efficient

uses external heat sources from 250C to 700C
very high efficiency – 34% heat to electric
long life (25 years+ for solar)

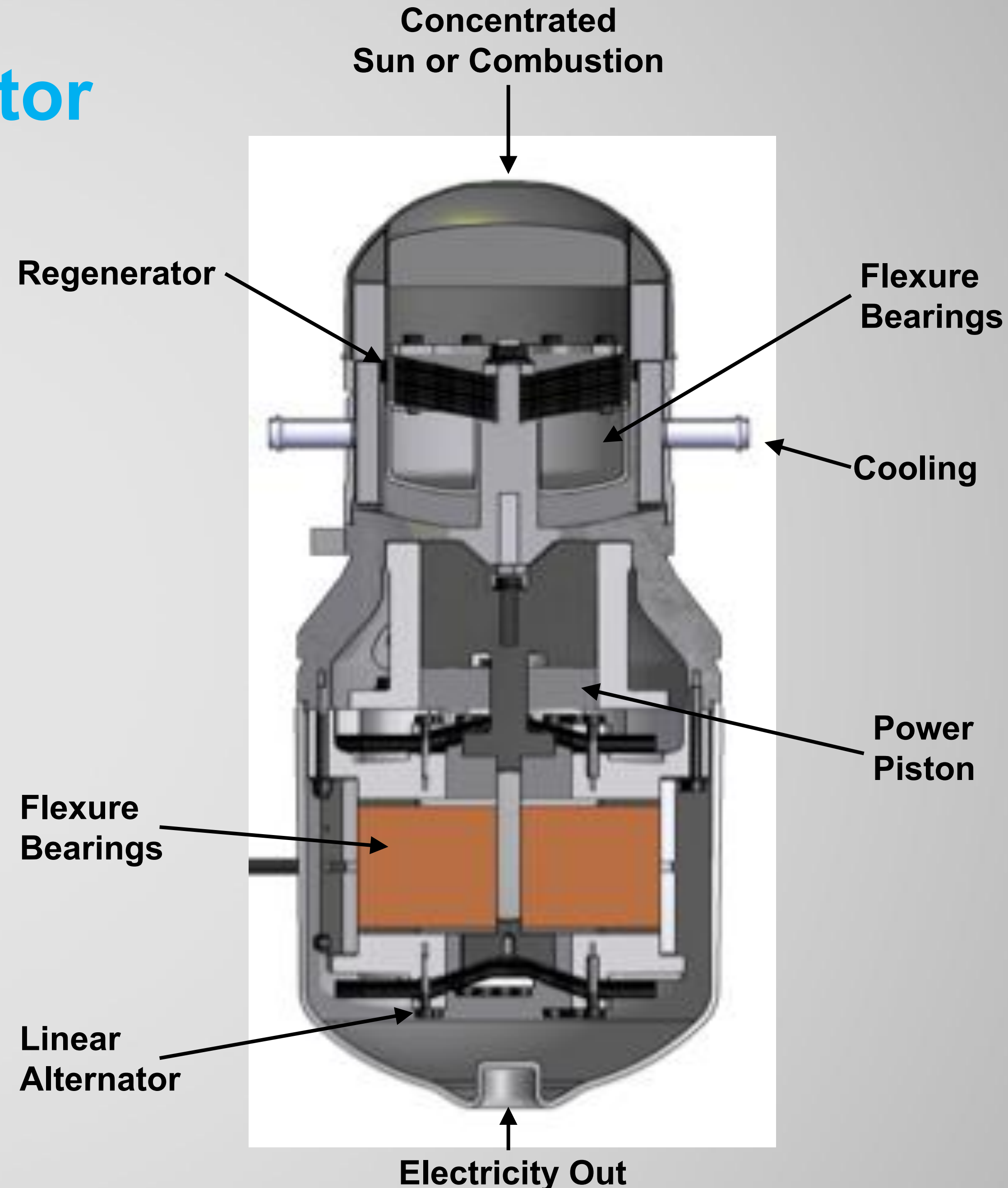
Quiet – <65dB compared to diesel at +90dB

Designed for Volume Production

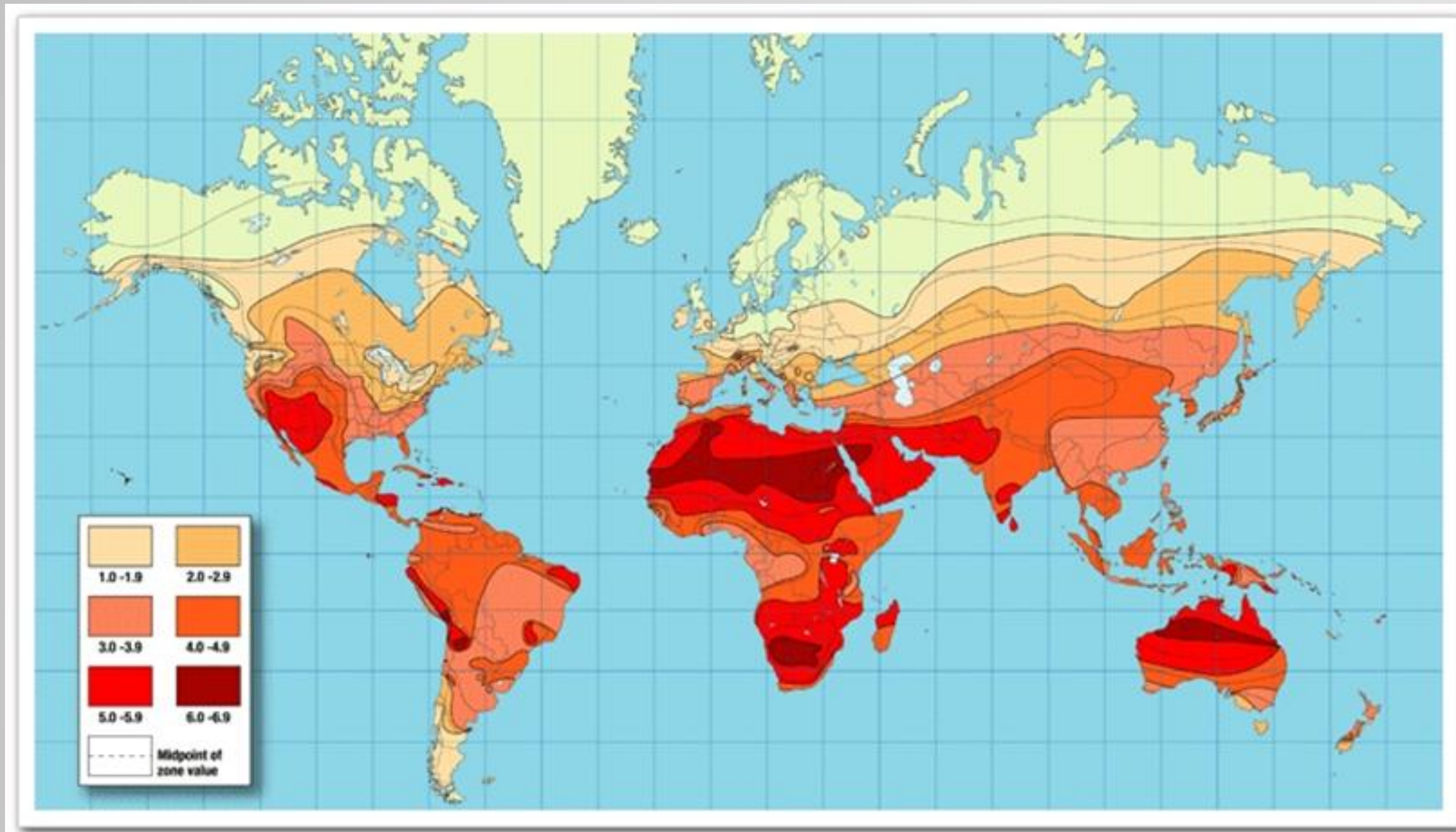
common materials and standard processes
low part count (63 total part numbers)

Over 1.3 million Hours of Operation

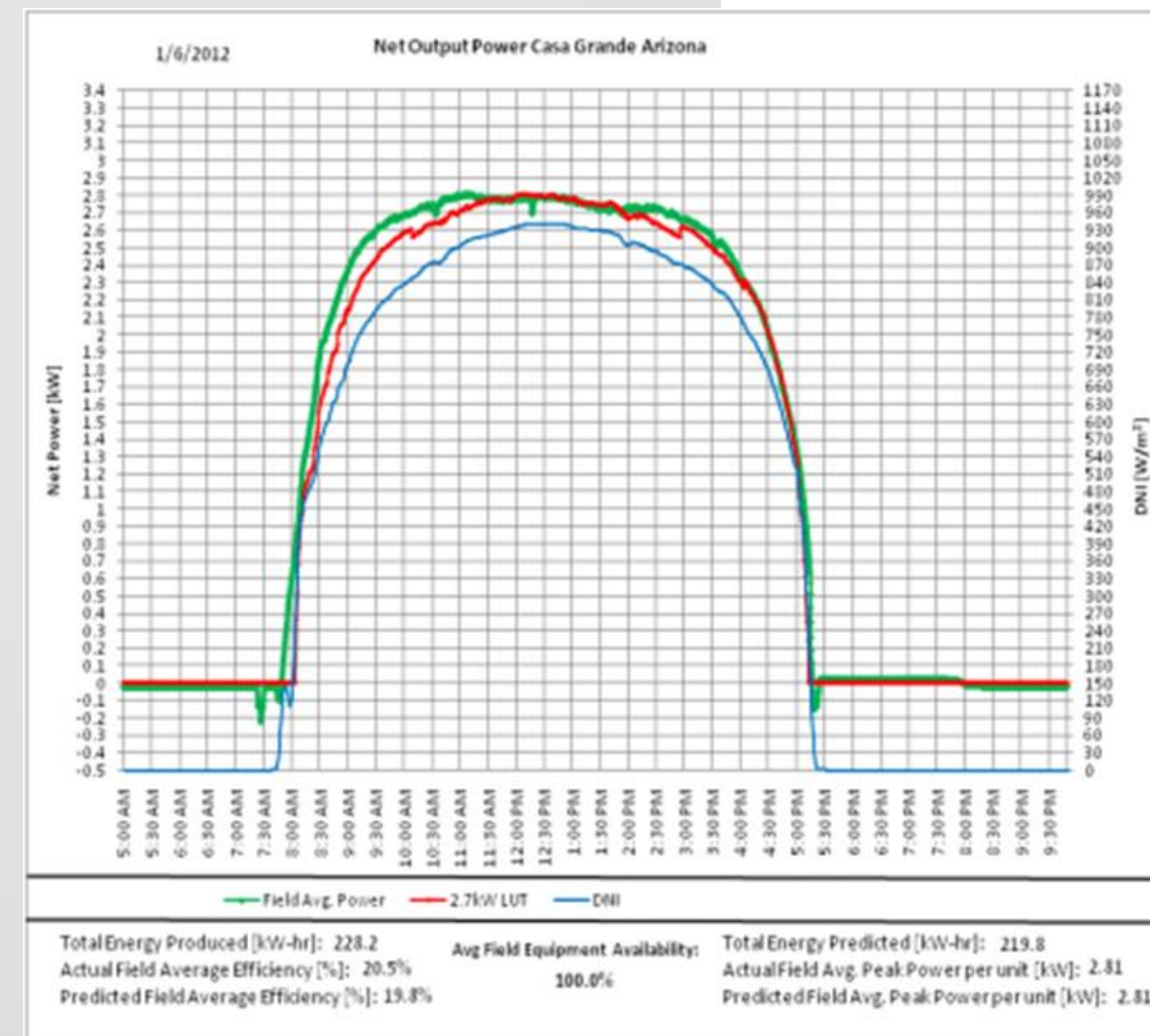
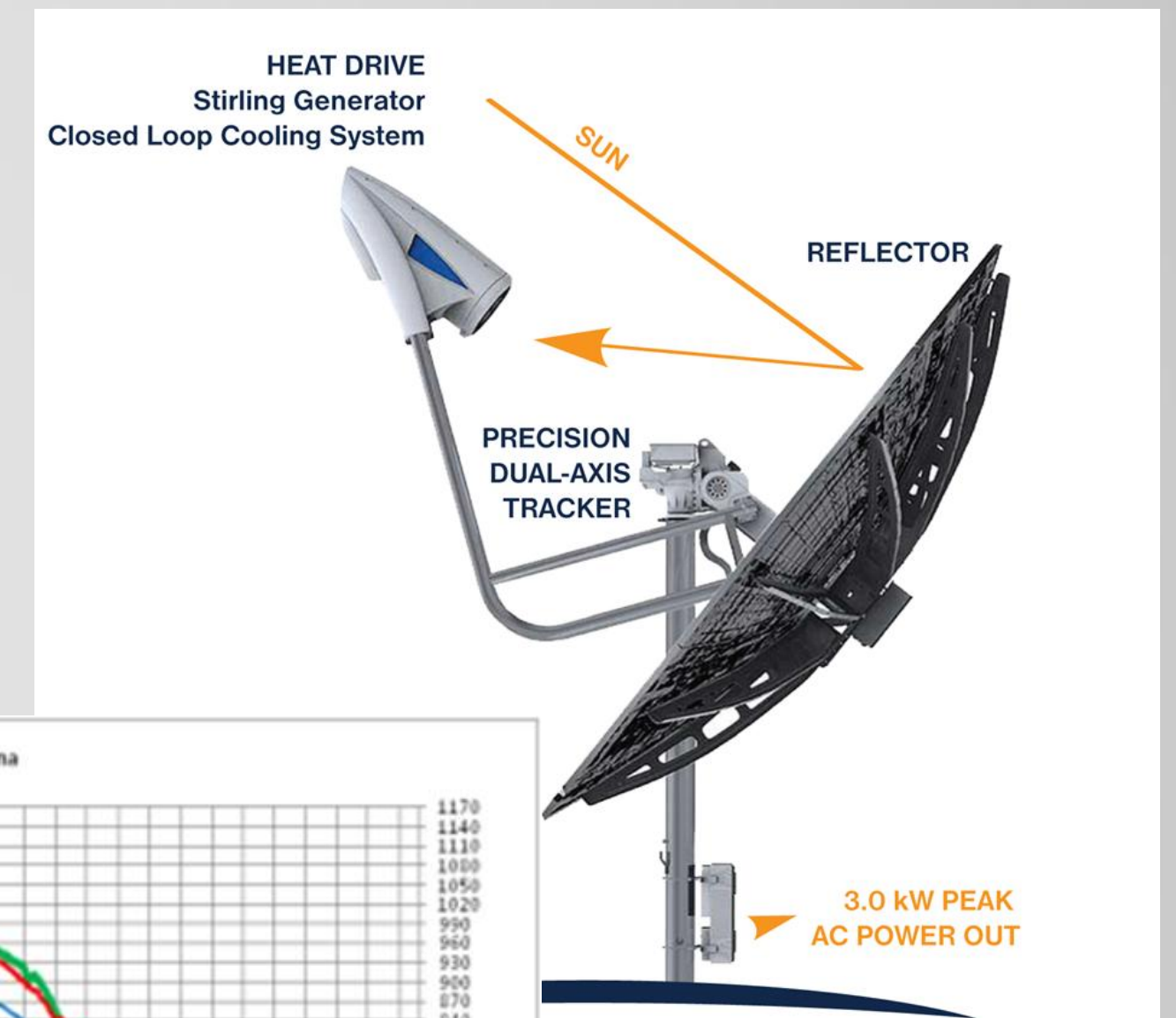
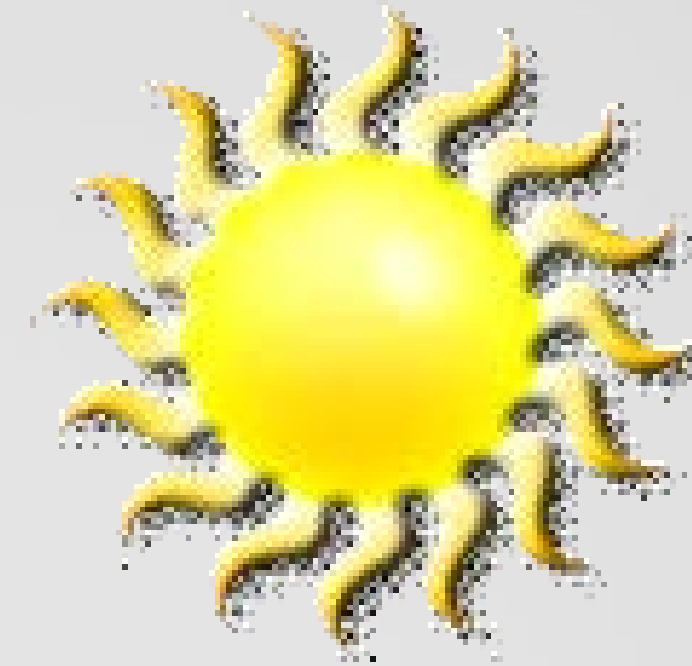
generators sizes produced from 10MW – 3.5KW
in development 7KW – 30KW



Infinia's PowerDish – Solar Electric Generator



DNI World Map



Infinia's Free-Piston Stirling Engine is unsurpassed in the market

31 PATENTS

Infinia has 31 Domestic and International Patents.

22 YEARS

Infinia has spent 22 years of rigorous programs and investment with the most demanding organizations:

- NASA - 38 projects/25 yrs
- DOD - 34 projects/22 yrs
- DOE - 19 projects/23 yrs
- NIH - 4 projects/27 yrs

1.5 MILLION HOURS






The sophisticated and proven design has more than 1.5 million hours of operation. The very low part count and sealed design is NASA deep-space and zero-maintenance certified.



U.S. DEPARTMENT OF
ENERGY



PowerDish Development Path to Pilot Testing

				
Technology Demonstrator	<u>P</u> rototype <u>T</u> est <u>U</u> nit	<u>F</u> ield <u>T</u> est <u>U</u> nit	<u>C</u> ommercial <u>T</u> est <u>U</u> nit	Pre-Production Pilot Testing
April 2006	October 2007	May 2008	December 2008	2009 - 2010
<ul style="list-style-type: none"> •Demonstrates Basic Technology Capability 	<ul style="list-style-type: none"> •Concept Demonstrator •Demonstrates Technology Form, Function & Performance 	<ul style="list-style-type: none"> •Concept Refinement •Demonstrates Refined Performance 	<ul style="list-style-type: none"> •DFMA Demonstrator •Demonstrates Improved Manufacturability 	<ul style="list-style-type: none"> •Tooling Demonstrator •Demonstrates Use of Production Tooling

History of Successful PowerDish Partnerships

Pilot Field Testing



- **Kennewick, WA, Ogden, Utah (development/test, since 2008)**
- **Belen City Hall, NM (demo, 2009 – 11/2011)**
- **Las Virgenes Water District, CA (demo, 2009)**
- **Sandia National Laboratories, NM (development/test, 2009)**
- **ONGC, Gurgaon, India (demo, 2010)**
- **Villarrobledo Spain, development test 2008 - 2010**

PowerDish II Grid-Connected Installation

Commissioned August 2010

Dairy Processing Facility | Yuma, AZ (PowerDish II)



Rated

2.0kW PowerDish II
80 kWac Field Capacity

Bankable

15 y PPA with Utility
20 y PPA with Dairy

Performance

Availability: 88%

Reliable

80 kWac capacity
Over 200,000 kWh generated
Fully remote operation

PowerDish III Grid-Connected Installation

Commissioned January 2011

PepsiCo, Frito-Lay | Casa Grande, AZ



Rated

2.7kW PowerDish III
27 kWac Field Capacity

Performance: Feb 2011 – Apr 2012

Aggregate Performance Ratio 91.6%

Availability: 96.3%

Reliable

119,000 kWh generated

Fully remote operation

Infinia's relationship with the U.S. DOD lends credibility worldwide - rapidly opening new opportunities.

TOOELE ARMY DEPOT - RELAUNCH INSTALLATION

- Utility-Scale PowerDish™ Solar
- 1.5 MW Field
- 430 systems
- Technology and economics validated by U.S. Army Corp of Engineers (USACE)
- Under construction – fields available for showcase Dec '12/Jan '13
- Groundbreaking with Joint Chiefs of Staff, Gen. Martin E. Dempsey: August 16, 2012



U.S. DOD*

- \$7B renewable power initiative
- Well-positioned for military bases with near-term decisions
- Driving relationships with major ESCOs: Chevron, Bechtel

PARTNERSHIPS

- India (The Kirloskar Group)
- Chile
- China
- Pakistan
- Saudi Arabia

PIPELINE DEALS

- Chile
- India
- Italy
- Mexico
- Morocco
- Pakistan

* Infinia must move immediately and quickly to capture share of DOD

Solar Hybrid

7.5 KW Solar Electrical Power
5.0 KW Bio-gas Electrical Power
10.0 KW Harvestable Heat

24 Hours of Continuous Energy

The Village Power system will be able to run off of Biogas (aka go-bar gas), Natural Gas and Propane. Heat from the engine can be used to enhance the existing bio digestion process. A biogas system at Rupantar is pictured below.

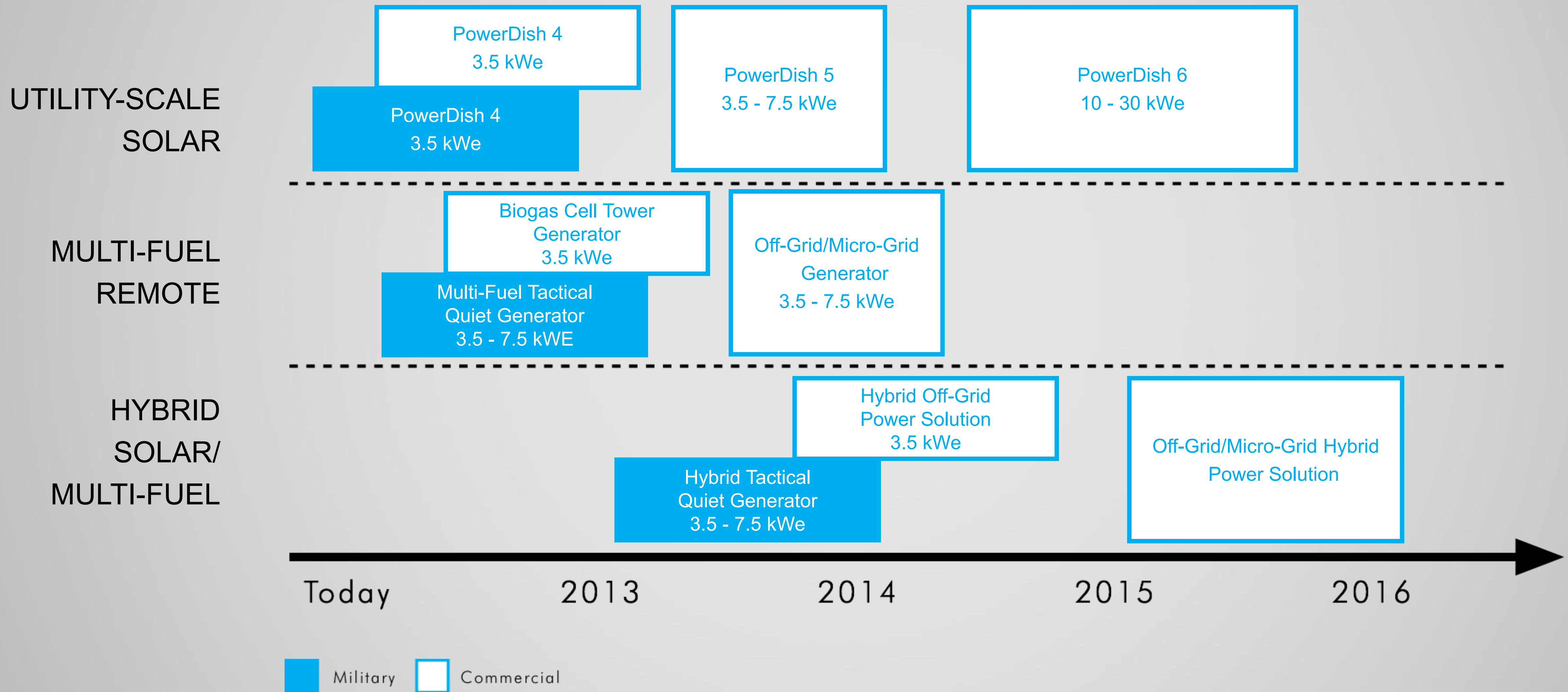


Infinia's Village Power unit –
2.5 KW of Electrical Power
7.0 KW Harvestable Heat for Heat or
Adsorption Cooling

Run's on unfiltered bio-gas, Natural
Gas or Diesel



Infinia's product roadmap is defined to rapidly deliver emerging market solutions.



Award winning manufacturing team has product ready for mass manufacturing.

The Infinia team includes 3 former plant managers with extensive training in industry leading Japanese lean manufacturing.

- Shingo Academy
- TPS Training Toyota
- Toyota Sensai Training

19

YEARS OF AVERAGE
MANUFACTURING
EXPERIENCE

21

SHINGO PRIZES FOR
OPERATIONAL EXCELLENCE

03

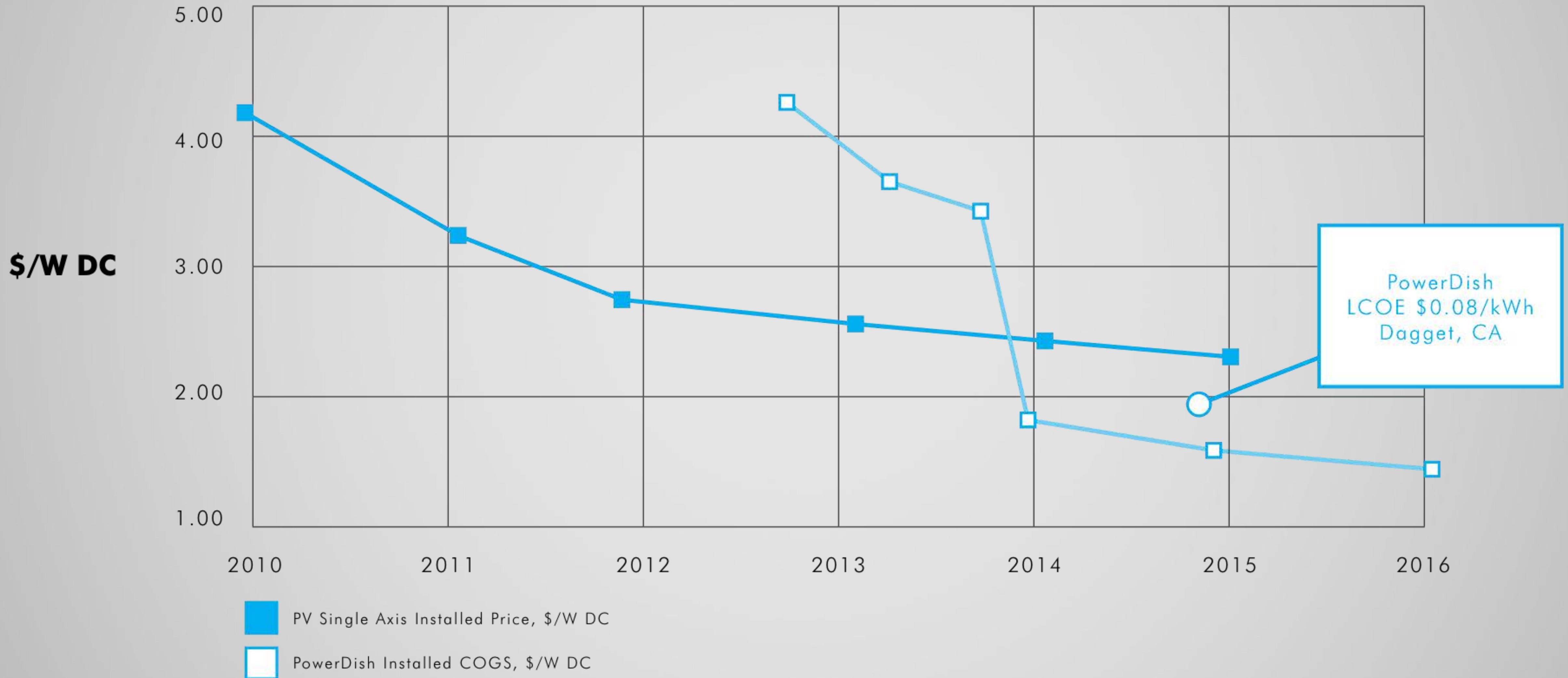
PACE AWARDS FOR
EXCELLENCE IN INNOVATION
(AUTOMOVIE MANUFACTURING)

02

INDUSTRY WEEK
"BEST PLANT"
AWARDS

PowerDish more competitive than PV in \$/Watt.

PD vs. PV single axis \$/W DC installed (USA Basis)

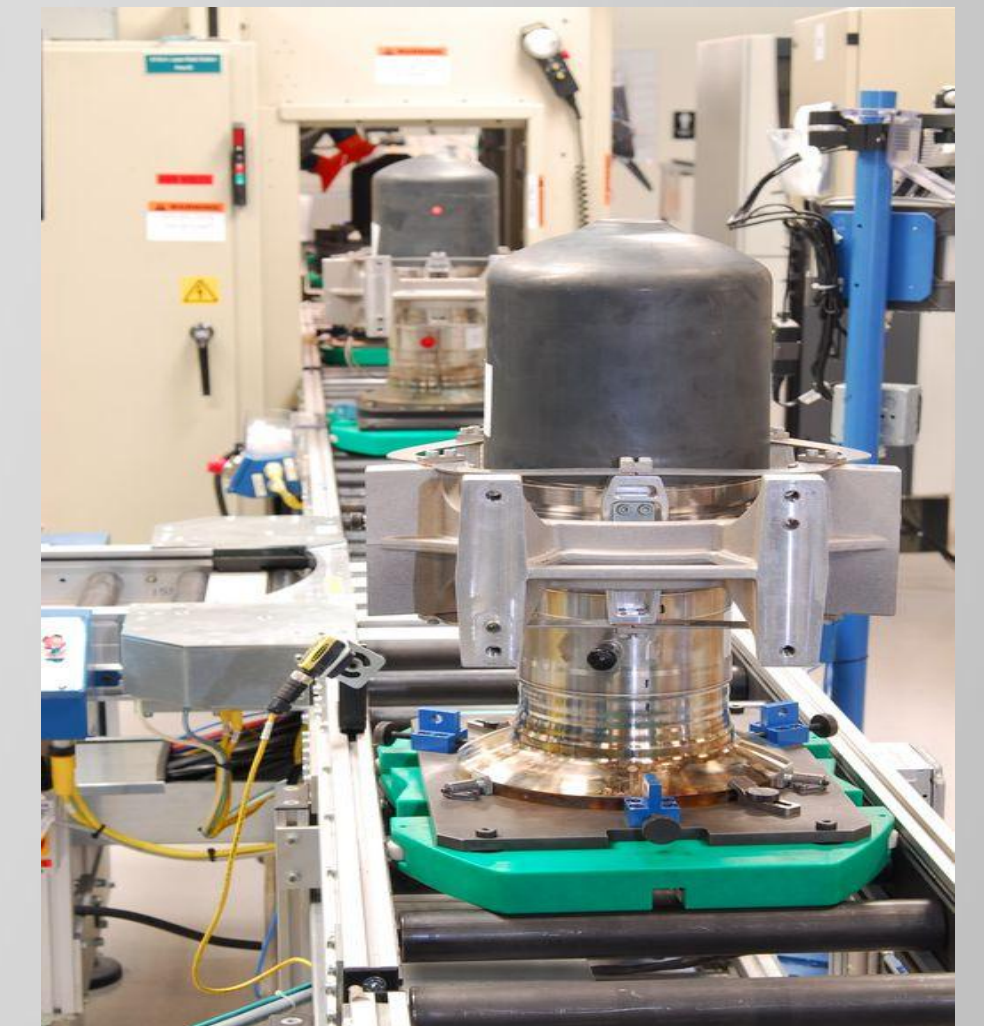


PowerDish Installations

Indigenization

Manufacturing:

- Chassis Fabrication
- Generator Assembly
- Electronic Box Build



PowerDish Installations

Local Jobs (25 MW project example)

Temporary during construction (>200,000 labor-hours)

Permanent (~20+)

Cable Distribution

Post Installation

Assembly

Plant Operation



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THANK YOU

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