

Powering Agriculture

AN ENERGY GRAND CHALLENGE



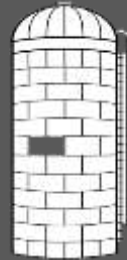
BMZ



OUTLINE

1. Background
2. Challenge
3. Objectives
4. Results First Call 2013
5. Second Call 2014

Energy in the Agricultural Value Chain



BEYOND POWERING AG



TRANSPORTATION & LOGISTICS



MARKETING & DISTRIBUTION



END USER

INPUTS

Seed
Water
Labor
Fodder
Fertilizer
Equipment

PRODUCTION

*Growers or
Cooperatives*
Horticulture
Livestock
Aquaculture
Dairy/meat

LOCAL TRANSPORT/ COLLECTION

Truck
Bicycle
Train
Boat
Animal
On foot

STORAGE & HANDLING

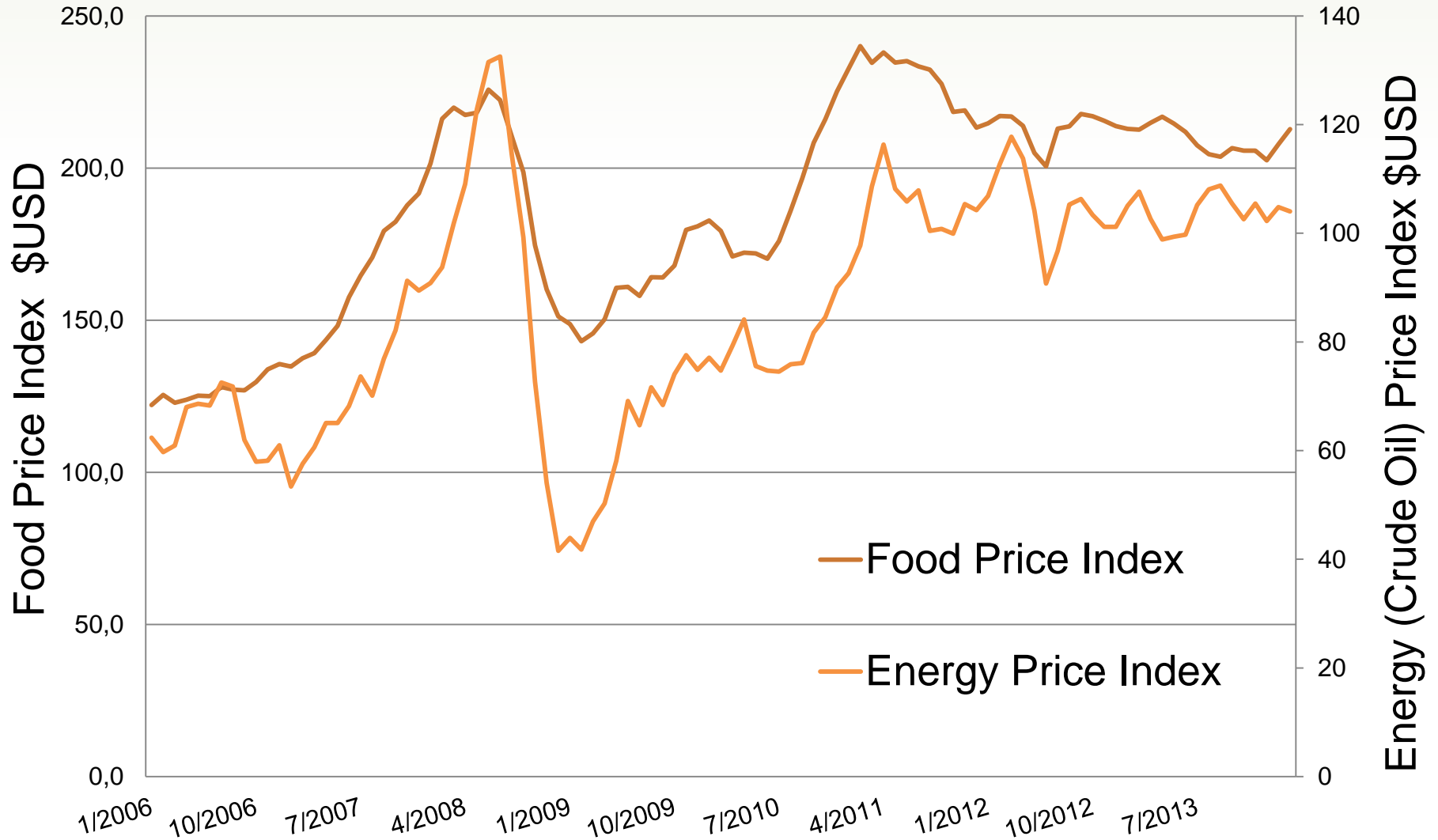
*Pre or post
processing*
Storage
Silos
Cooling
Brokers &
Traders


PROCESSING

Drying, grinding,
milling, etc.
Food & feed
ingredients

THE PRICE OF FOOD IS TIED TO ENERGY

January 2006 – March 2014





70% agricultural intensification is required to feed the world in 2050.



In sub-Saharan Africa up to **50%** of the food that is grown does not make it to the table.

India could save **\$10 billion** per year with sufficient refrigeration/cold storage for food.

Currently, just **4%** of African cropland is irrigated.

Electrifying the unserved is a **\$700 billion** market

THE CHALLENGE

Millions of farmers and agribusinesses in developing countries lack access to the clean energy services necessary for increasing agricultural productivity and value.



Powering Agriculture Helps Overcome Market Barriers

Limited Demand

Inappropriate Technology Design & Cost

Limited Access to Financing

Few Commercially Replicable Business Models



Providing support for the entire development of an enterprise

Technology Lifecycle



Powering Ag Mechanisms

Innovation Calls

Innovation Prizes

Public Private Partnerships

Knowledge Management and Sharing

Global Financing Facility

INTEREST IN POWERING AG FUNDING

FOR PROFIT	NON-PROFIT	ACADEMIC	OTHER	FOUNDATION
43%	23%	13%	6%	3%

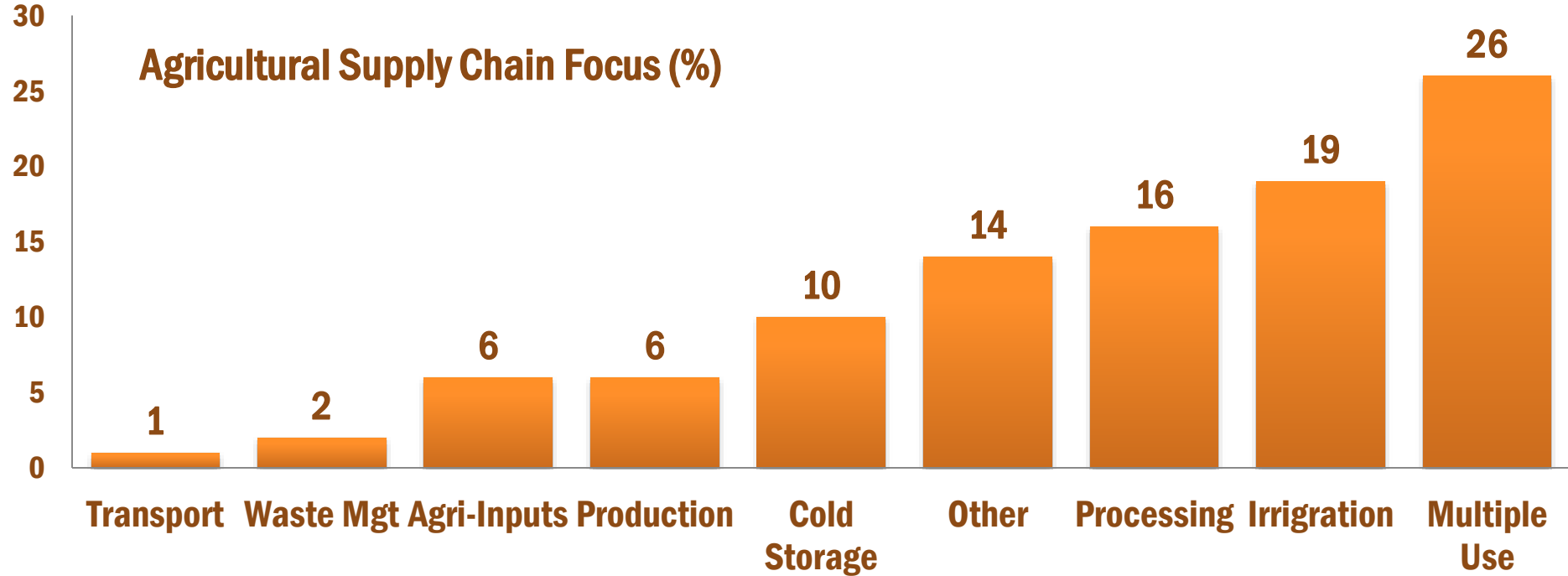
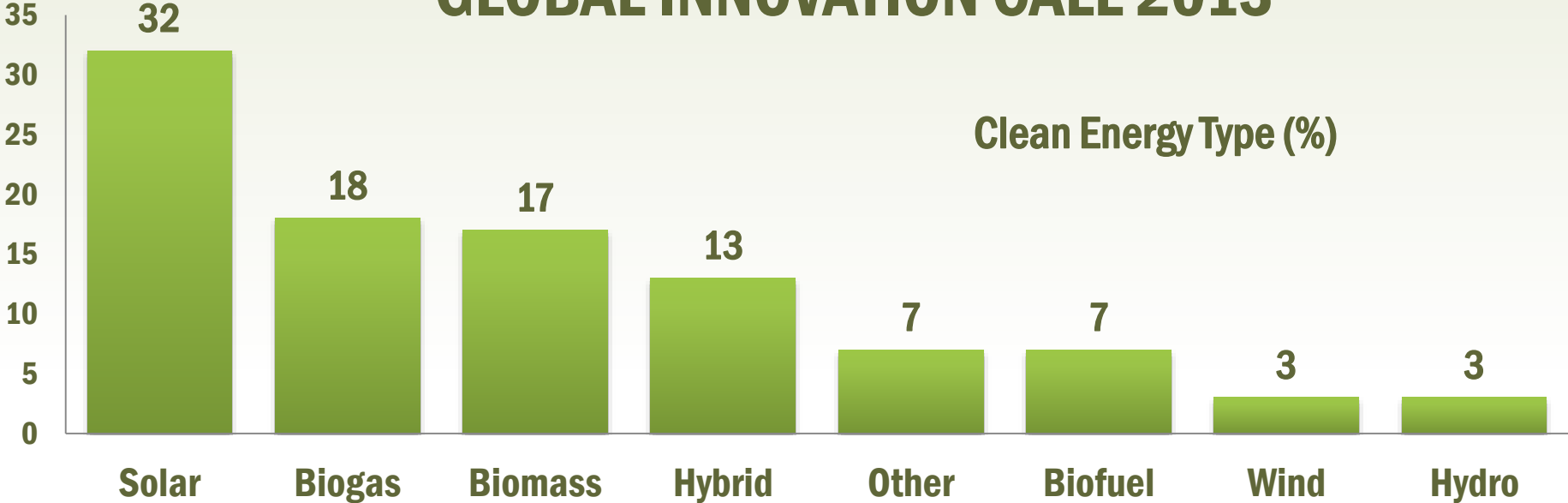
473 PROPOSALS FROM NEARLY 80 COUNTRIES 41% DEVELOPING COUNTRIES

NORTH AMERICA	EUROPE/ EURASIA	LATIN AMERICA/ CARIBBEAN	AFRICA	MIDDLE EAST	ASIA
52%	8%	10%	10%	6%	14%

11 AWARDS TOTALING \$12 MILLION USD



GLOBAL INNOVATION CALL 2013



IRRIGATION: iDE



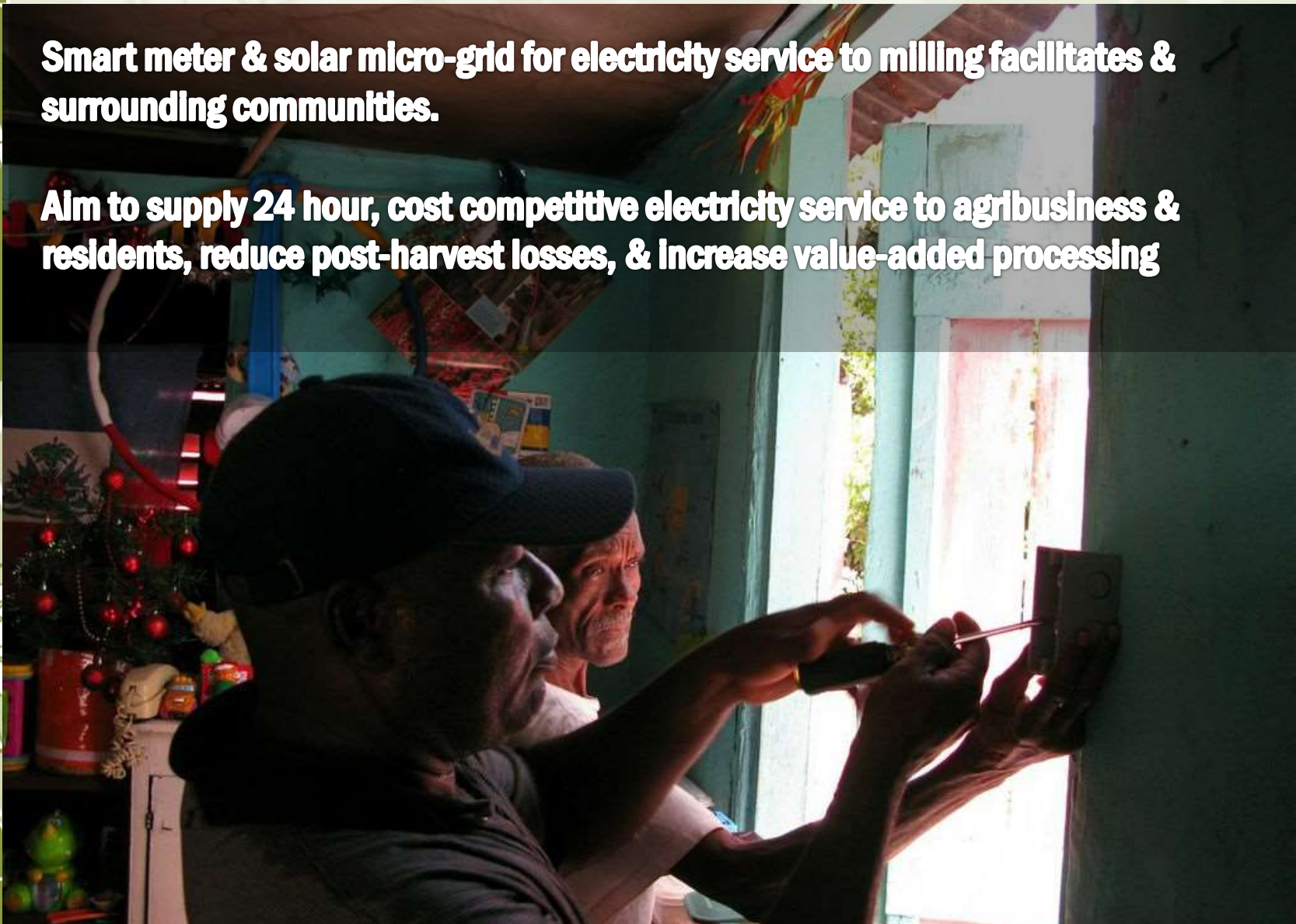
**Solar PV & solar steam
powered piston pump for drip
irrigation.**

**Working to implement diesel
cost competitive pumps,
increasing crop yields, harvest
yields & reducing gender
disparities in ag.**

MICRO GRIDS: EARTH SPARK













Smart meter & solar micro-grid for electricity service to milling facilities & surrounding communities.

Aim to supply 24 hour, cost competitive electricity service to agribusiness & residents, reduce post-harvest losses, & increase value-added processing



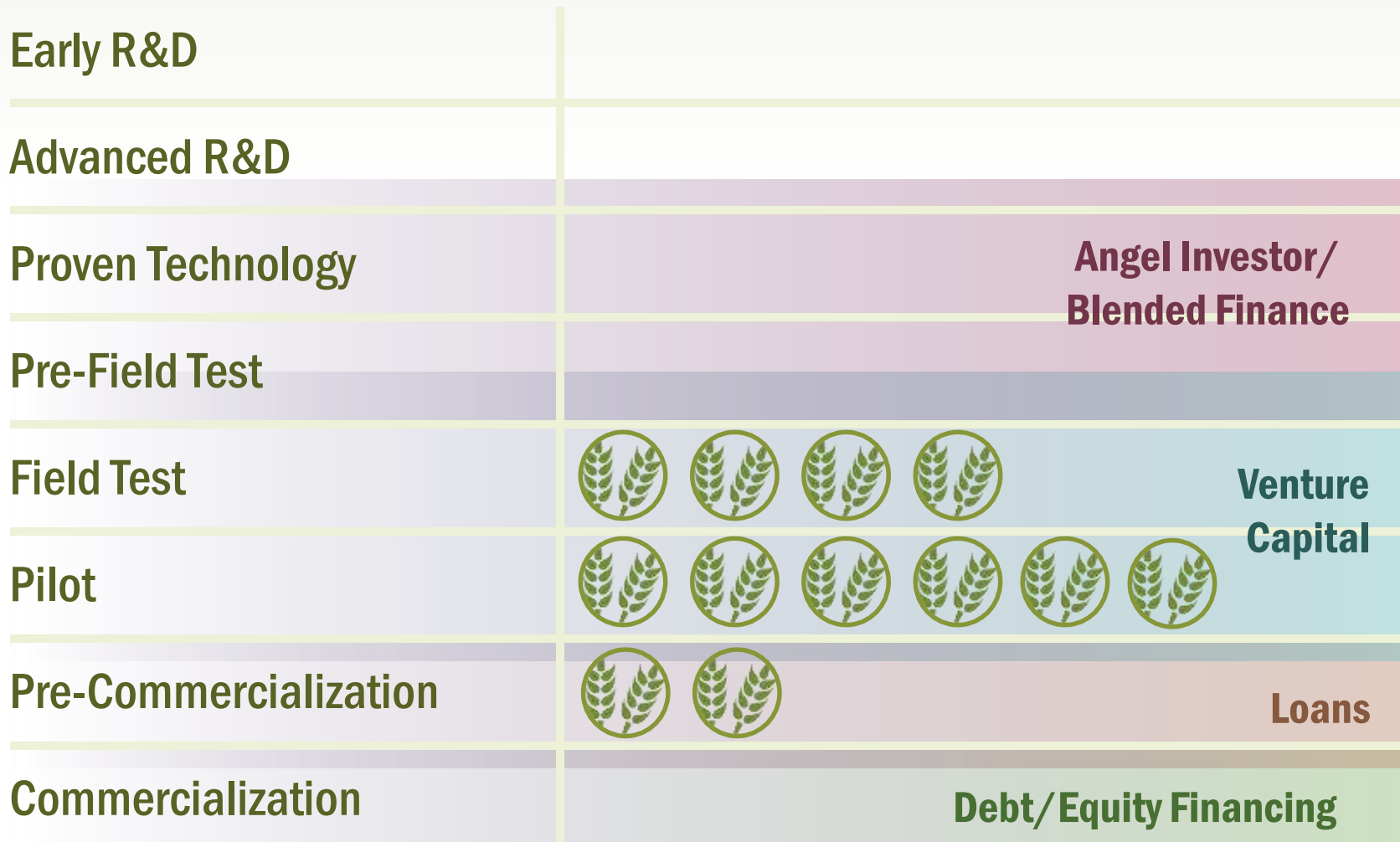
Powering Agriculture Energy Grand Challenge

Portfolio Position Year 1

Early R&D	   	Grants/ Self Finance
Advanced R&D	   	
Proven Technology	 	Angel Investor/ Blended Finance
Pre-Field Test	 	
Field Test		Venture Capital
Pilot		
Pre-Commercialization		
Commercialization		

Powering Agriculture Energy Grand Challenge

Expected Portfolio Position Year 3



KNOWLEDGE MANAGEMENT

The screenshot shows the homepage of the 'Powering Agriculture' website. The header features the title 'POWERING AGRICULTURE: AN ENERGY GRAND CHALLENGE FOR DEVELOPMENT' and a sub-header 'CLEAN ENERGY SOLUTIONS FOR INCREASED FOOD SECURITY'. Below the header is a navigation menu with links for HOME, WINNERS, PROBLEM, CHALLENGE, VIDEOS, and PARTNERS. The main content area is titled 'CLEAN ENERGY TECHNOLOGIES HELPING TO FEED THE WORLD' and 'MEET OUR 2013 WINNERS'. It lists several winners and their organizations, including African Bamboo, Camco Advisory Services, ECO Consult, IDE, Moby Engineering, and SunDancer Refrigeration. There are also logos for USAID, Duke Energy, and BMZ at the bottom.

Communications

The screenshot shows the 'energypedia' website. The header includes a search bar, navigation links (About, Help, Contact), and user options (Benjamin Reberich, My Web Workspaces, Log out). The main content area is titled 'Welcome to the Powering Agriculture Portal' and features a 'Portal' tab. It lists various articles and topics related to food and agriculture, including 'Basics about Food and Agriculture' and 'Other topic' sections. There are also links to 'Latest Powering Agriculture Articles' and 'Relevant Webpages'.

Knowledge Hub

The screenshot shows the 'WebMo' monitoring platform. The header includes a search bar, navigation links (About, Help, Benjamin Reberich, Log out), and the WebMo logo. The main content area is titled 'Project: PAEGC' and features a 'Project progress' section. It includes a pie chart showing 50% completed and 50% remaining, and a table of progress indicators for 'Country policy', 'Living conditions', and 'Wildlife plans'. The 'Country policy' indicator is marked as 'On track' with a green checkmark, while 'Living conditions' and 'Wildlife plans' are marked with red X's.

Monitoring Platform

The screenshot shows the 'PAEGC internal working platform'. The header includes a search bar, navigation links (About, Help, Benjamin Reberich, My Web Workspaces, Log out), and logos for USAID and Duke Energy. The main content area is titled 'Welcome to the PAEGC internal working platform' and features a 'PAEGC Key Documents' section. It lists various documents and reports, including 'Donors/Partnership', 'Progress Reports', and 'Annual Plannings'. There are also links to 'PAEGC Pictures', 'Hot Links', and 'News'.

Project Management Platform

Second Global Innovation Call



PAEGC 's SECOND GLOBAL INNOVATION CALL

Support for: Clean Energy Solutions that are

- (1) at the early stage of research & design (15% and more Cost-Share contribution of total award value)**
- (2) at the later stage of product/business model development (35% Cost-Share contribution)**

Range of Awards: USD \$500,000 - \$2,000,000

Eligible are: U.S. and non-U.S. organizations, e.g. academic institutions, not-for-profit and for-profit organizations, foundations, civic groups and cooperatives

HOW TO APPLY?

The Broad Agency Announcement (BAA) solicitation for PAEGC's second Global Innovation Call is administered by USAID on behalf of the Founding Partners and can be downloaded from <http://www.grants.gov> and <http://www.fbo.gov>

Applications shall be received from **Monday, December 8, 2014** to **Thursday, February 12, 2015 at 4:00 PM EST** via the Online Application Platform accessed at: <http://poweringag.org/call-innovations>



Thank you

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INNOVATION DRIVES IMPACT

Innovative & Appropriate Tech

Post-harvest Processing,

Decentralized Power,

Cold Storage,

Irrigation

Impact

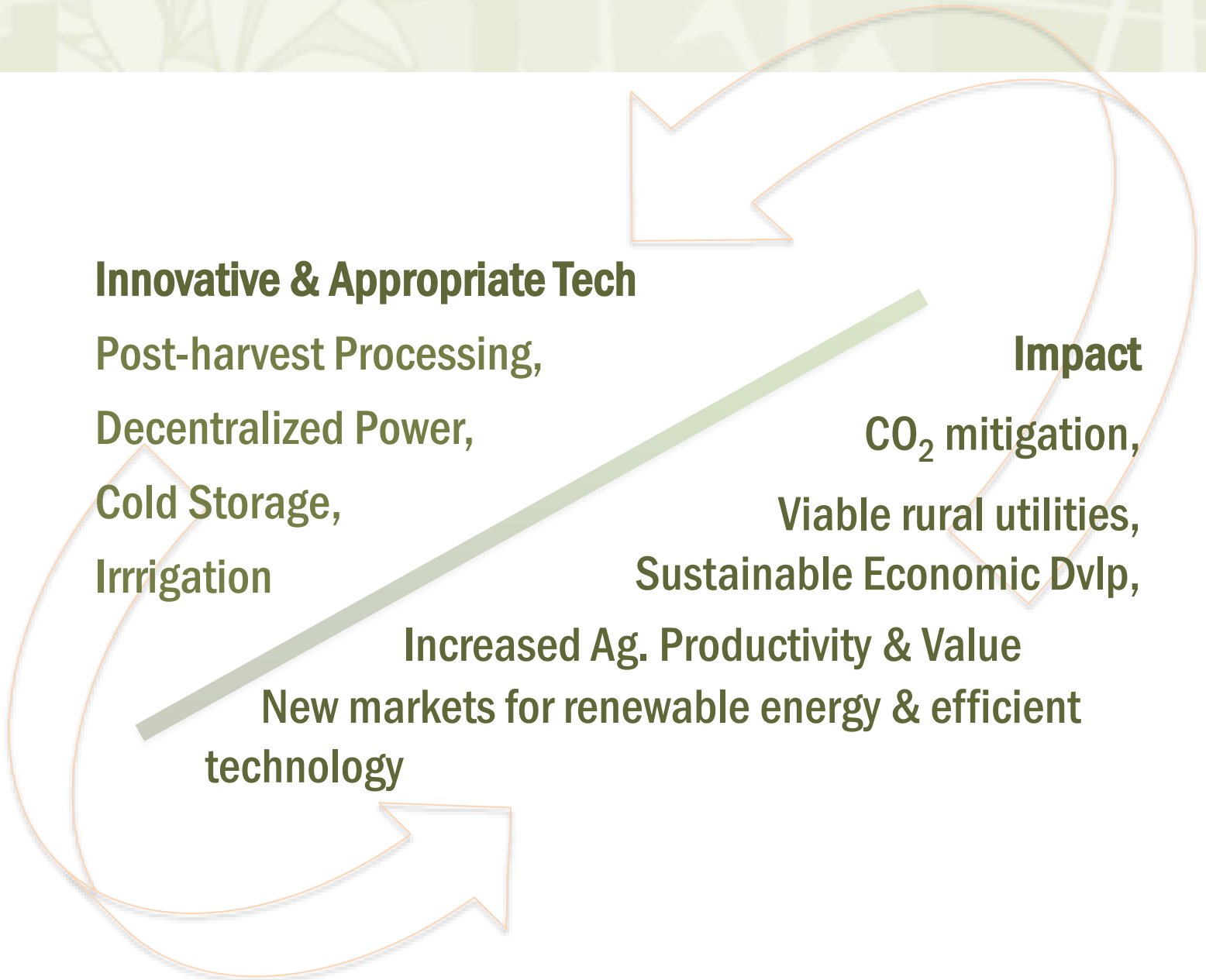
CO₂ mitigation,

Viable rural utilities,

Sustainable Economic Dvlp,

Increased Ag. Productivity & Value

New markets for renewable energy & efficient
technology

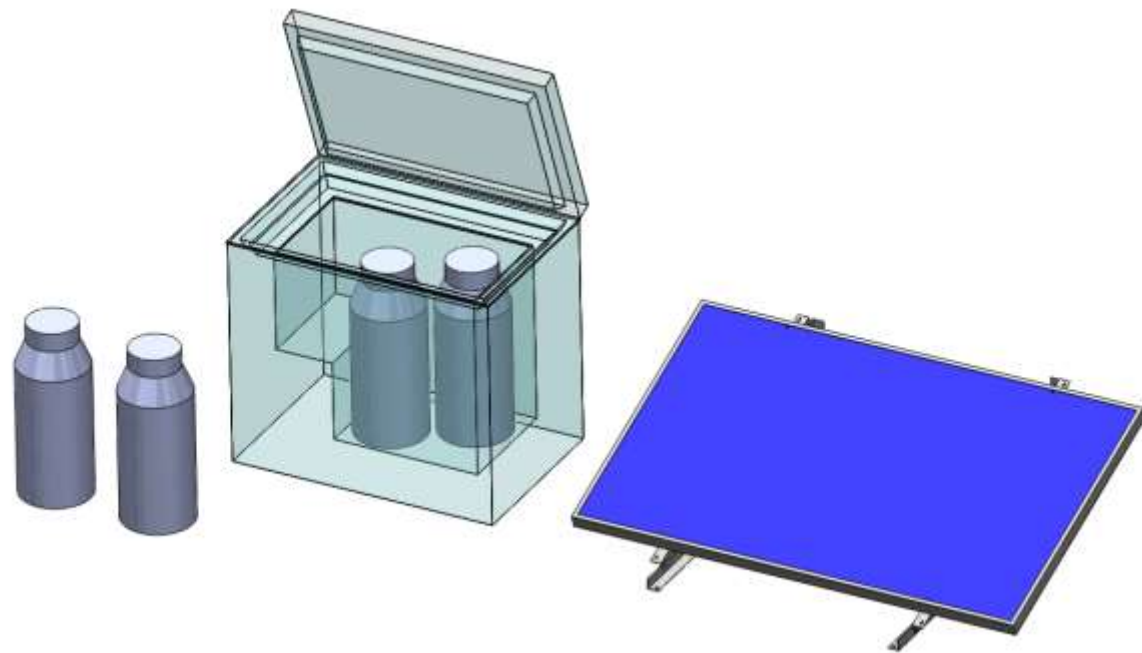


COLD STORAGE: SunDanzer

Efficient DC Solar Refrigeration – Freezers and large-scale cold storage units that run on solar power

Off-grid cooling solutions for people that lack access to reliable, affordable energy

Can be used to enhance food security/value through reduced spoilage, and/or keeping vaccines cool to prevent diseases.



POST HARVEST PROCESSING: CAMCO



Biomass Fueled Steam Powered Generators Local Energy ♦ Low Cost Fuel ♦ Portable

