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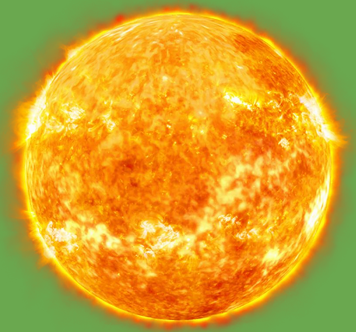
Docket Number: 22-ERDD-02

Climate Innovation Progam

Additional submitted attachment is included below.

ADI Solar Power Corporation

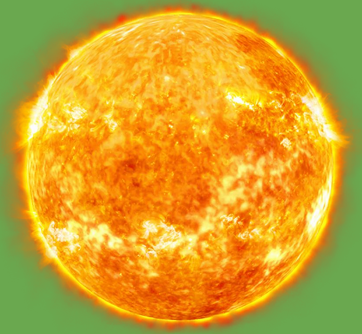
Sustainable Technology for Tomorrow's Energy Needs Today



Wayne Bliesner Founder and CEO

ADI Solar Power Corporation

affordable,
continuous,
clean, renewable
power *is* possible!

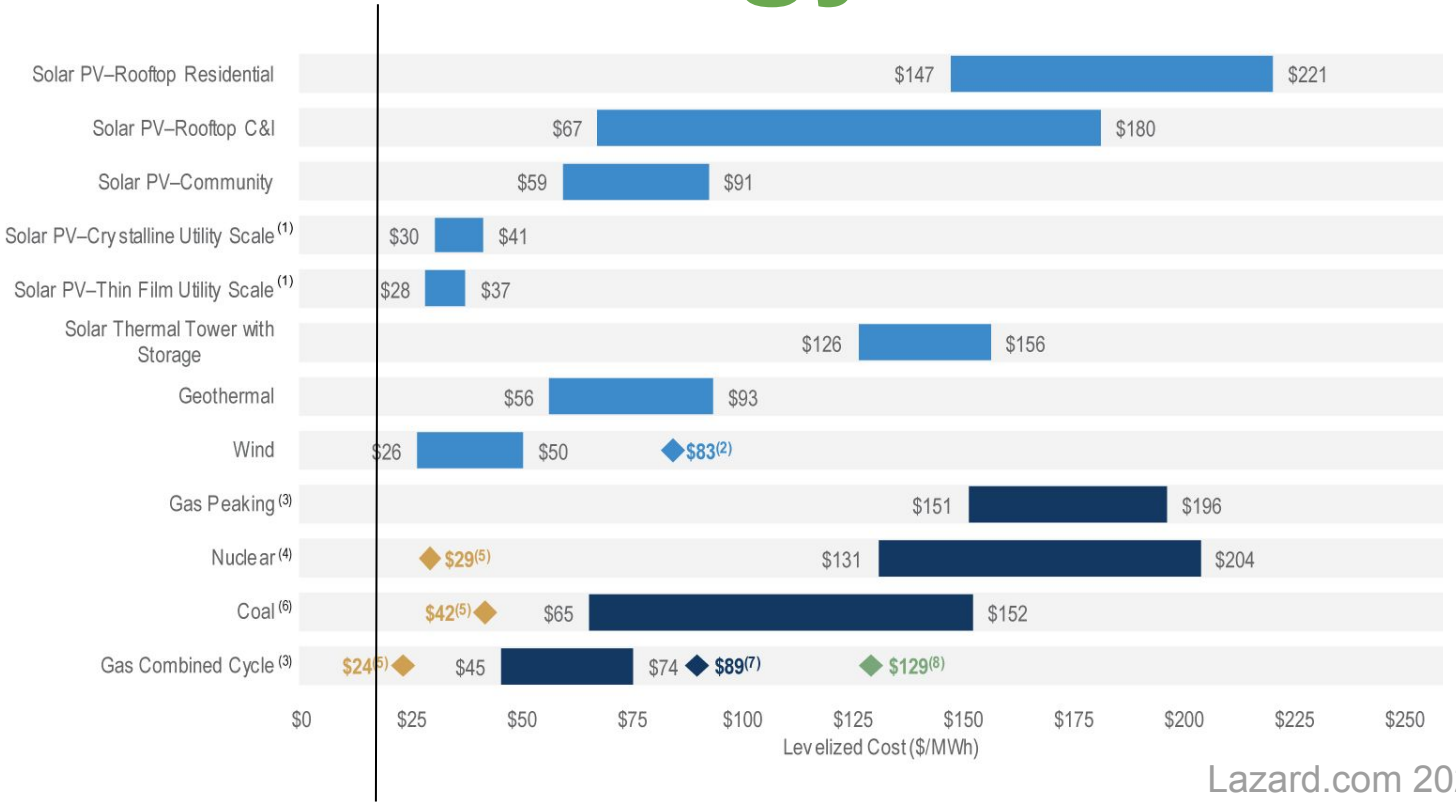


How do we make it happen?

ADI Solar Solution

- Continuously available power - 24 / 7 / 365 from the sun
- Scalable to deliver terawatts of power
- Cost competitive with any existing power source
- Eco-friendly, non-strategic, inexpensive materials

Cost of Energy



Lazard.com 2021

ADI Solar $13.70 / MW-hr

ADI Solar Principal

Wayne Bliesner ADI founder and CEO

Boeing aerodynamics engineering research leader

- Led $100 Million NASA research program
- 7 airplane systems patents
- Invented Boeing wing configuration worth $50 million

Independent research scientist, inventor

- Solar energy storage, Solar Fuels, Heat engines
- High efficiency LED lighting systems

ADI Consultants

Dr. Allan Organ, Cambridge University (ret.)

- Heat engine design consultant, world expert

Dr. Robert Bowman, Jet Propulsion Laboratory (ret.)

- Metallic hydride expert

Dr. Robert Reed, Los Alamos National Laboratory

- Heat transfer expert, ADI Solar heat pipe designer

Frank Papa, President, Society of Vacuum Coaters

- High Power Impulse Magnetron Sputtering Expert

ADI Technologies

Advanced Optics with two stage focusing

- 60:1 at heliostat creating constant beam diameter
- 20:1 at down-mirror into thermochemical processor

ADI Technologies

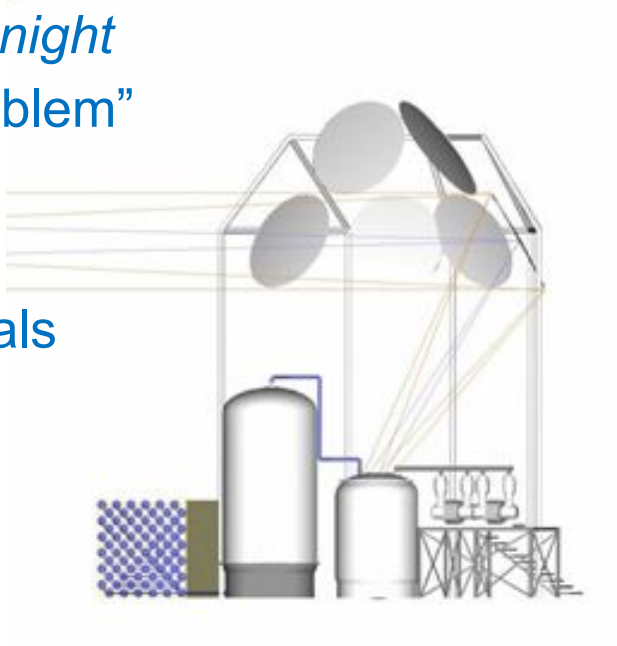
Patented solar heliostat

- Improved solar collection efficiency
  - Eliminates cosine effect (25% loss)
- Smallest solar power land footprint
- 1200:1 focus
- $75 / sq meter

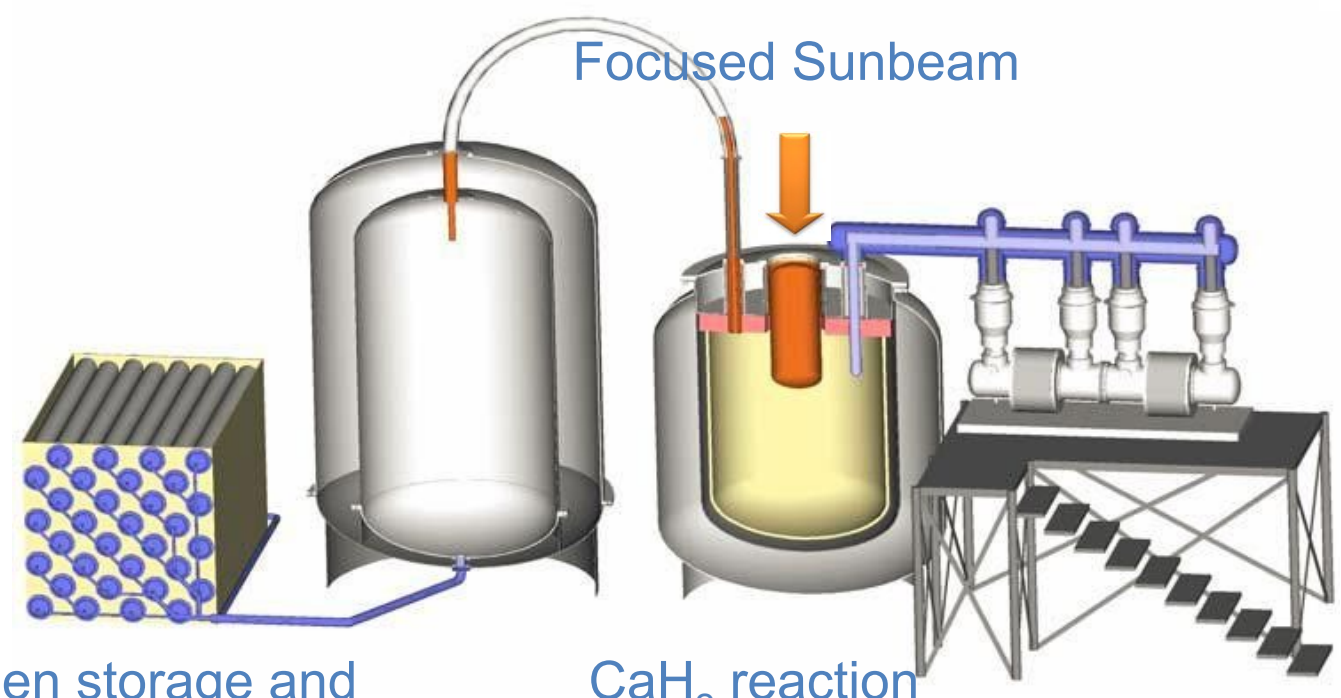
ADI Technologies

Patented, tested Calcium Hydride energy storage

- Stores excess energy for delivery *all night*
- Solves renewables “intermittency problem”
- Environmentally sustainable
- Competitive power cost
- Scalable - no rare or strategic materials



ADI Technologies



Hydrogen storage and heat recovery

CaH_2 reaction processor

Heat Engine

ADI Technologies

Dual Shell Stirling engine

- 10th generation Beta engine operational
- Beta prime design improvements:
  - Dual shell heat exchangers
  - Rhombic drive
  - 1,000 C operating temperature
  - 25 kW at record-breaking efficiency

ADI Technologies

Thermochemical CaH_2 battery

Wayne Bliesner demonstrates ADI calcium hydride thermochemical battery test cell

ADI Technologies

No sun? No problem! Renewable fuel backup system

- 4 day operation on reserve biofuel Dimethyl Ether (DME)
- On site generation of DME from water, CO_2 and solar electricity
- 5 atm burner delivers supplemental heat
- 24-ft diameter sphere stores liquid biofuel at 5 atm.
- $500,000 system cost includes:
  - burner,
  - heat exchangers,
  - DME storage,
  - co-electrolysis system

ADI Solar Solution

System advantages

- Continuous baseload power 24 / 7 / 365
- Cost competitive with all other sources, even with *no subsidy*
- Rapid response load-following
- No rare materials, can scale to deliver *terawatts of power*
- Green DME biofuel self-storing system for cloudy days
- May serve as baseload or distributed power source as required
- 30-year life with near zero maintenance

The Future

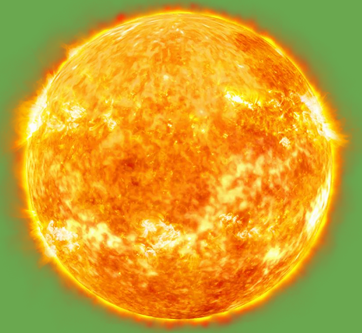
We seek business partners

We expect a robust market for these technologies.

We welcome:

- Joint ventures
- Exclusive licensing agreements
- Foreign and domestic manufacturing commitments
- International investors

ADI Solar Funding



Phase 1 $2M (3 months)

Crucible coatings,

Dual hydride heat storage calibration

Phase 2 $15M (9 months)

a) $5M: infrastructure

b) $10M: 50 kW Stirling engine pilot system

Phase 3 $100M (12 months)

10 MW pilot system - SCO_2 Brayton turbine

Phase 4 $200M

5 - 10 MW system commercialization

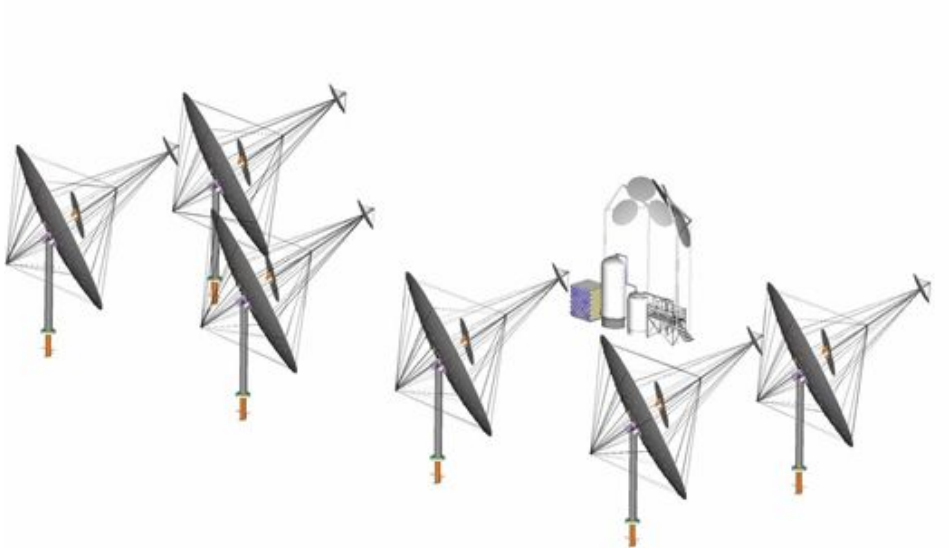
Funding - Phase 2a

$5M infrastructure

$1M building 5,000 sq. meter
$1M press (3,500 ton)
$1M vacuum oven
$1.25M Magnetron sputtering eq.
$250k CNC lathes, mills
$500k hydride equipment

Funding - Phase 2b

50 kW pilot system



$10M

$2M solar dishes
$2M tank fabrication
$2M chemicals (Ca, Mg, etc)
$1M heat pipe, boiler assemblies
$1M system assembly
$1M 50 kW engine fabrication
$1M overhead (engineering, tooling, materials)

Funding - Phase 3

$100M - 10 MW system demonstration

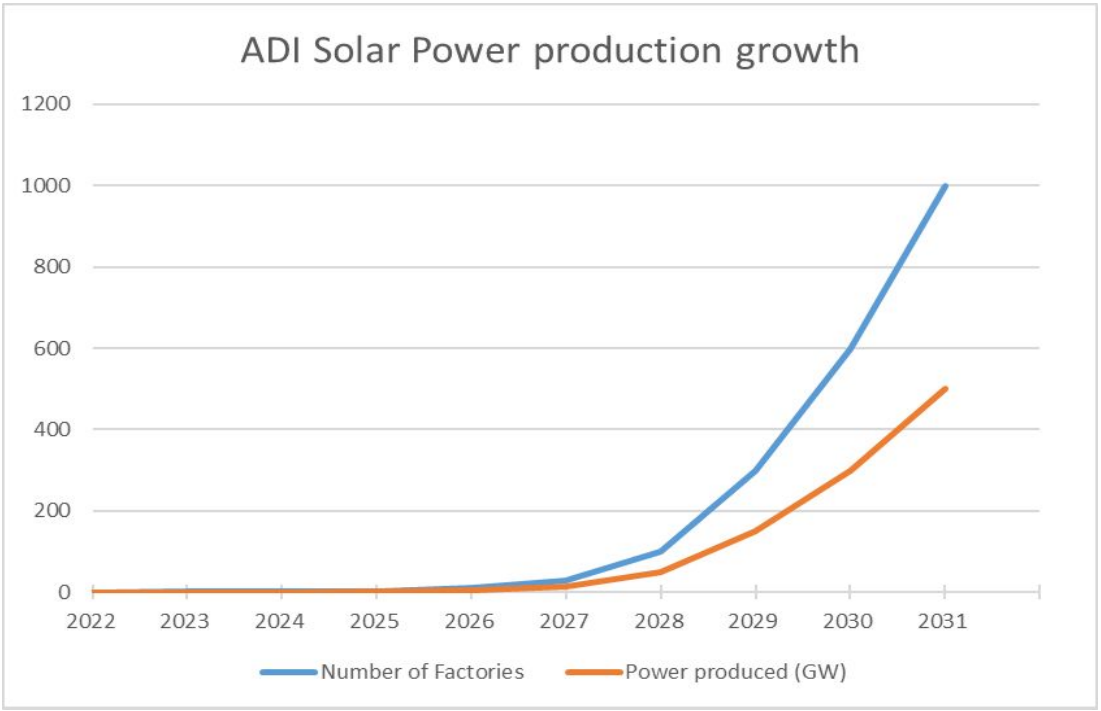
- Solar dish fabrication (Janicki Industries)
- Stainless tank system (Alaskan Copper Works)
- Chemical manufacturing
- SCO_2 Brayton turbine
- Heat transfer equipment to SCO_2 Brayton turbine
- Solar heat pipe fabrication
- System integration

Funding - Phase 4

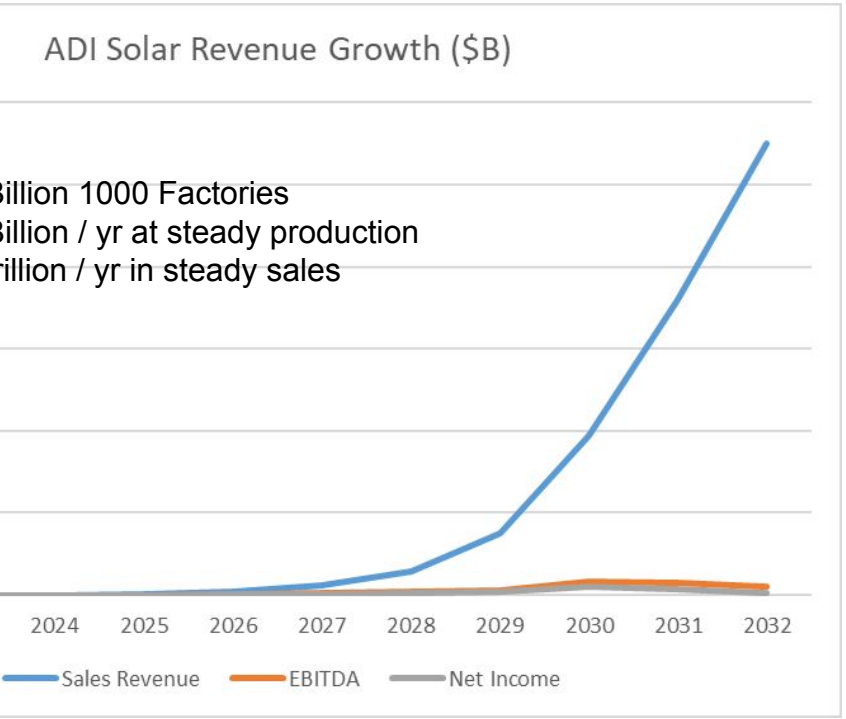
$200M: 10 MW system commercialization

- one 10 MW system factory
- 50,000 sq meter facility
- 50 units / year
- Valuation: $2B ramping to $500B over 10 years

10 Year Growth



10 Year Growth



10 Year Growth