Item 13: ROUND 2 - RAMP 2022: Realizing Accelerated Manufacturing and Production for Clean Energy Technologies GFO-21-304

July 10, 2024, Business Meeting

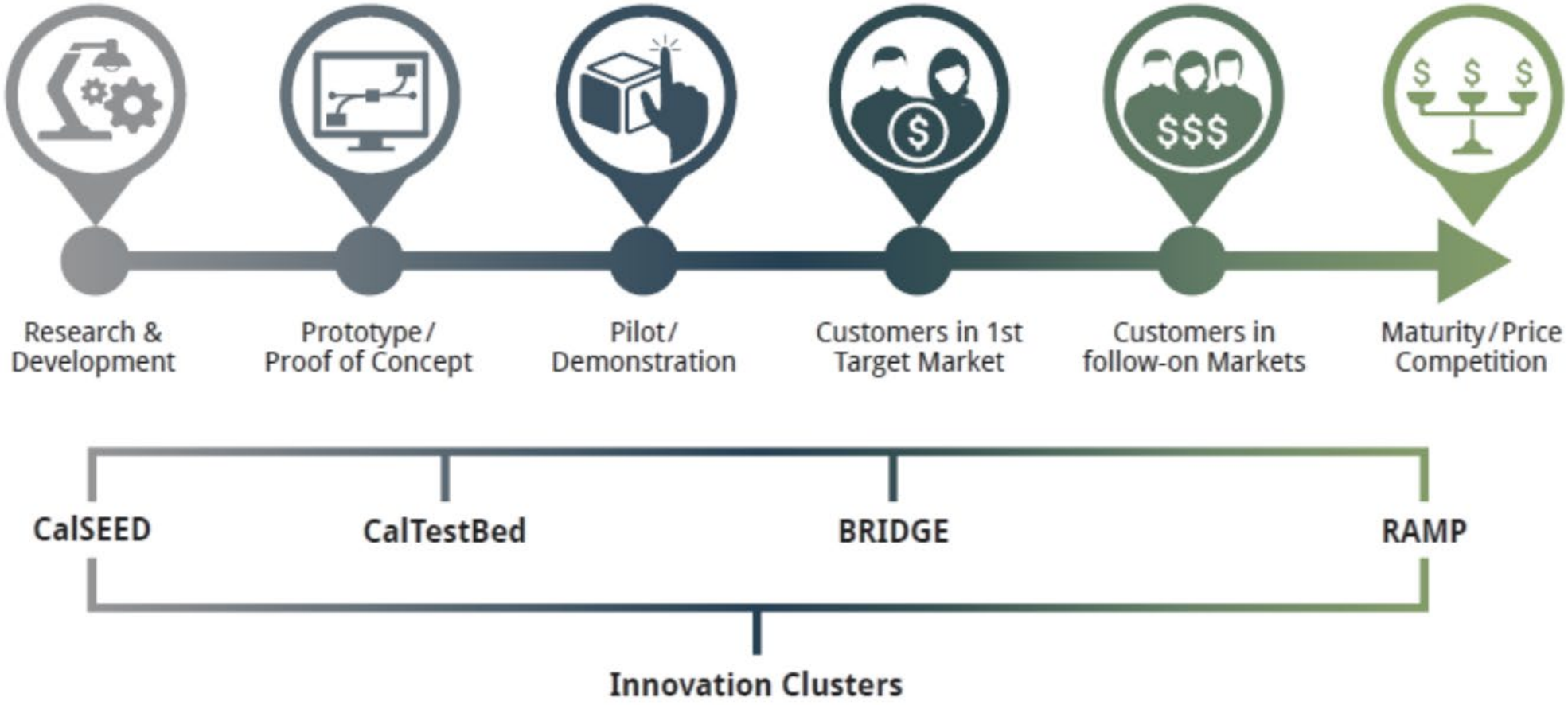
Benson Gilbert, Energy Commission Specialist I
Energy Research and Development Division
Technology Innovation and Entrepreneurship Branch

Benefit to Californians

- **Advance clean energy economy**
  - Support entrepreneurs
  - Increase skilled labor opportunities
- **Accelerate California clean energy goals**

Source: CEC

Clean Energy Innovation Ecosystem



Source: CEC

RAMP

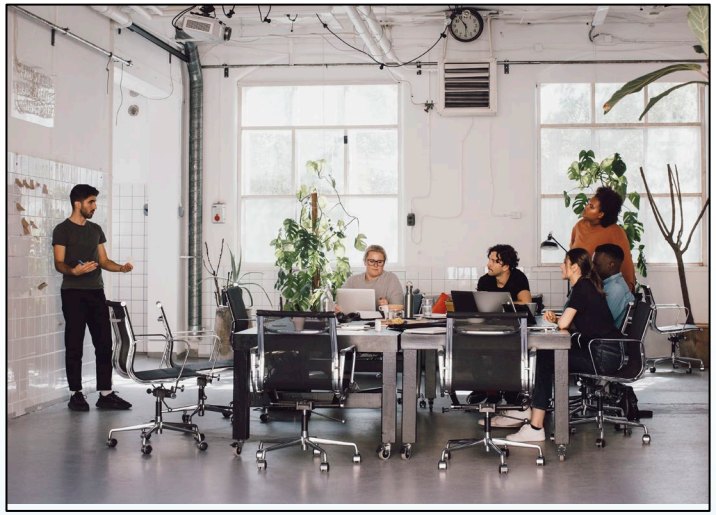
- Low-Rate Initial Production (LRIP): Transition from custom hand-built prototypes to mass-production
- Challenges:
  - Securing capital
  - Adjusting emerging technology to established manufacturing processes
  - Lack of manufacturing experience and knowledge

Source: Google

Previous RAMP

Through 3 rounds…

19 clean energy start-up companies funded with over $52 million in CEC funds



Source: Office 365

Employ over 1,100 people

Source: Google

Over $780 million raised in follow-on private funding

Source: Google

New Projects Proposed for Approval

Swift Solar Inc.

$2,999,880 – San Carlos, CA

Scaling Solar Cell to Module Conversion for High Efficiency Perovskite Tandems

- Increased power from same surface area
- Rooftop and utility application – 10% lower cost
- EV application - estimated 17-21 miles/day in range

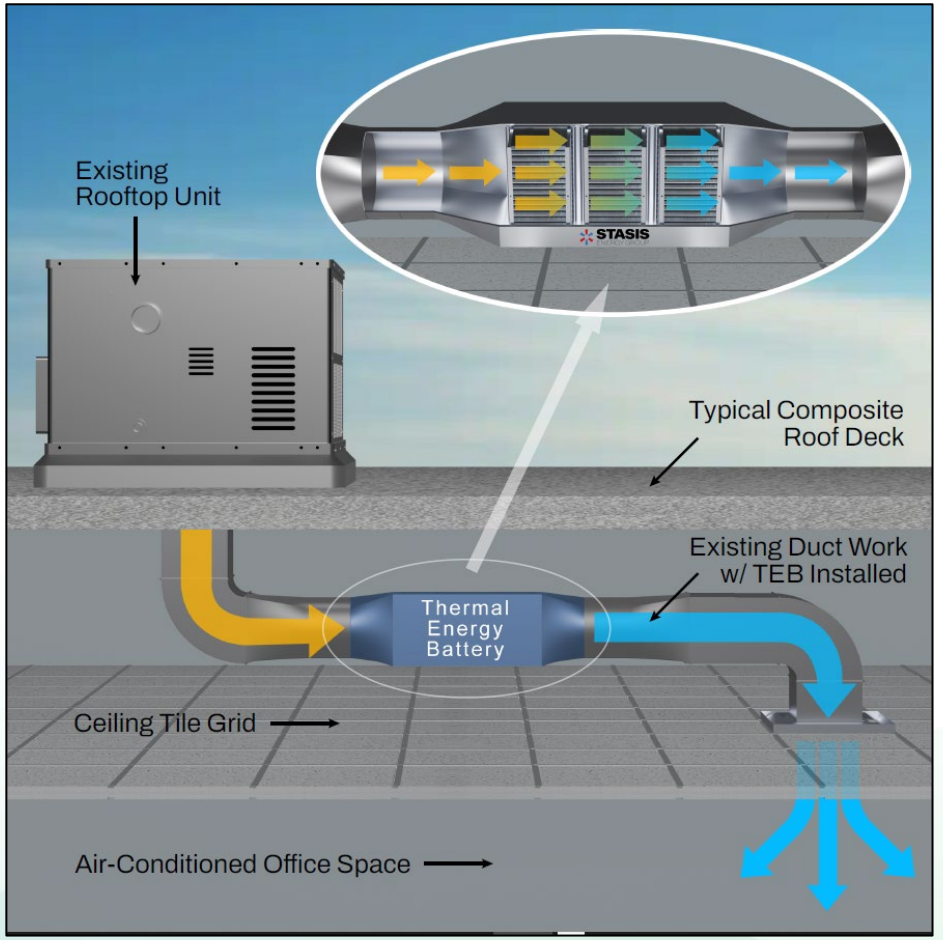
Source: Vehicle image from AutoGuide/Tesla; photo and overlay from Swift Solar, Inc.

Stasis Energy Group LLC

$1,878,583

Thermal Energy Storage System for Packaged HVAC Systems

- Phase change material inside ducts
- Charges off-peak and provides cooling during peak periods
- 50% kWh load shift from peak to off-peak
- 60% peak kW reduction



Source: Stasis Energy Group, LLC

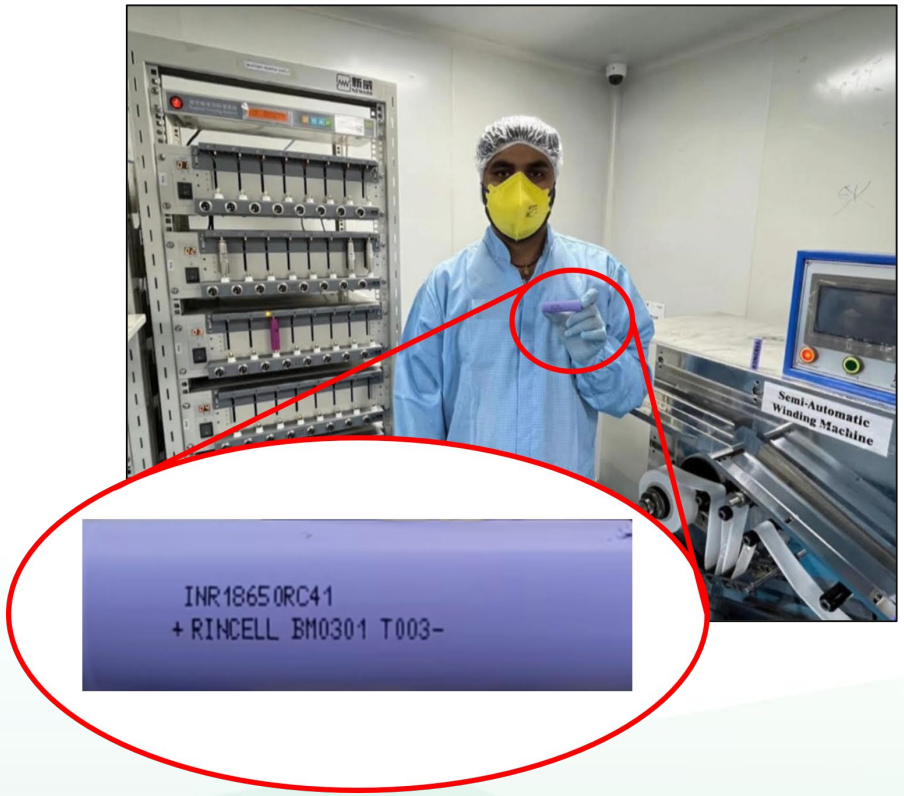
Rincell Corporation

$2,999,528

Accelerating Manufacturing of High-Capacity Lithium Batteries

- Energy dense silicon anode cells
- Addresses typical safety and lifetime drawbacks
- Pilot line producing 500 cells/day

Actual Rincell 4.1Ah 18650 (RC41) cell



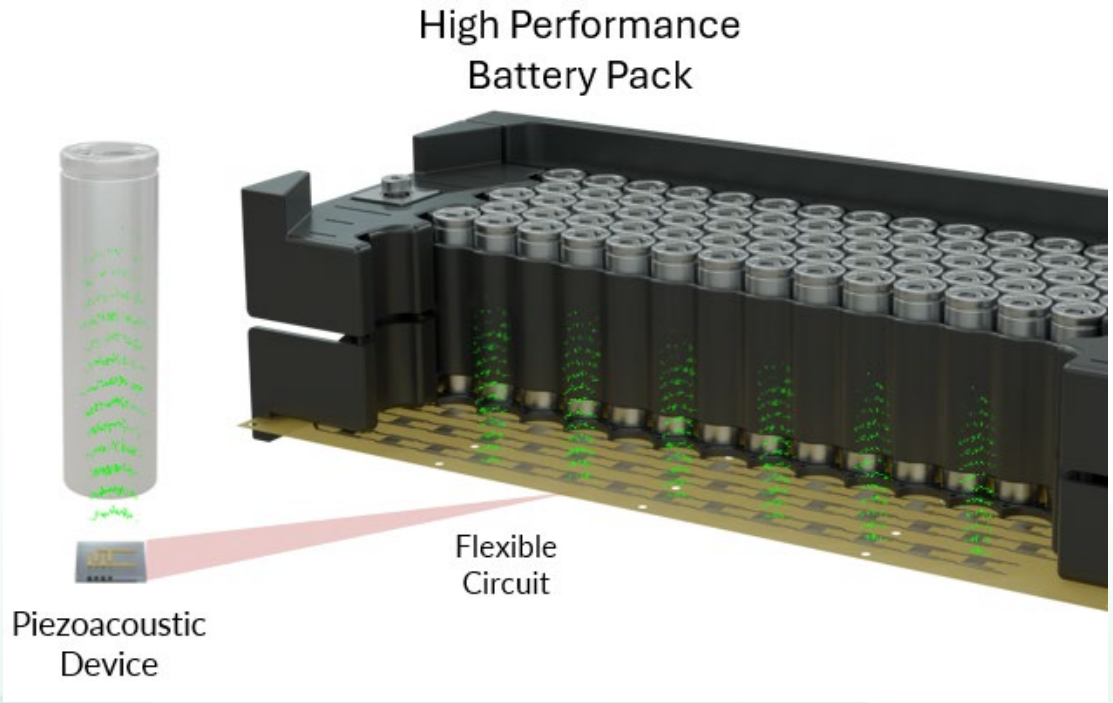
Source: Rincell Corporation

Sonocharge Energy, Inc.

$3,000,000 – San Diego, CA

Acoustic Wave Technology Platform for High Performance Li-Ion Battery Packs

- Surface Acoustic Wave generating device
- Reduced dendrite formation within battery
- Improved battery longevity and charging speed



Source: Sonocharge Energy, Inc.

Harvest Thermal

$1,658,385 – Fremont, CA

Manufacturing Scale-Up for Combined Heating and Hot Water Thermal Battery

- One system for space heating, cooling, and hot water
- Load shifting for HVAC and hot water
- Up to 45% utility bill savings

Source: Harvest Thermal

Sylvatex, Inc.

$2,290,685 – Alameda, CA

Future-Proof Manufacturing of Cathode Active Materials for Batteries

- Up to 25% lower cost
- Uses no water and minimal energy
- Produces a variety of cathode chemistries

Cathode Active Materials

Source: Sylvatex, Inc.

BoxPower Inc.

$2,988,031 – Grass Valley, CA

Manufacturing Scale-Up for Remote Grid Solar Container

- Pre-wired microgrid solution capable of rapid deployment
- Off-grid and grid-tied functionality
- Enhance safety, reliability, and affordability of energy delivery

Source: BoxPower, Inc.

Current Ways, Inc.

$2,191,398 – Ventura County

Bidirectional Onboard Charger for EVs

- High-efficiency bidirectional charging reduces energy loss and charging times
- Cost-effective, universally compatible design
- Supplies power to grid or load

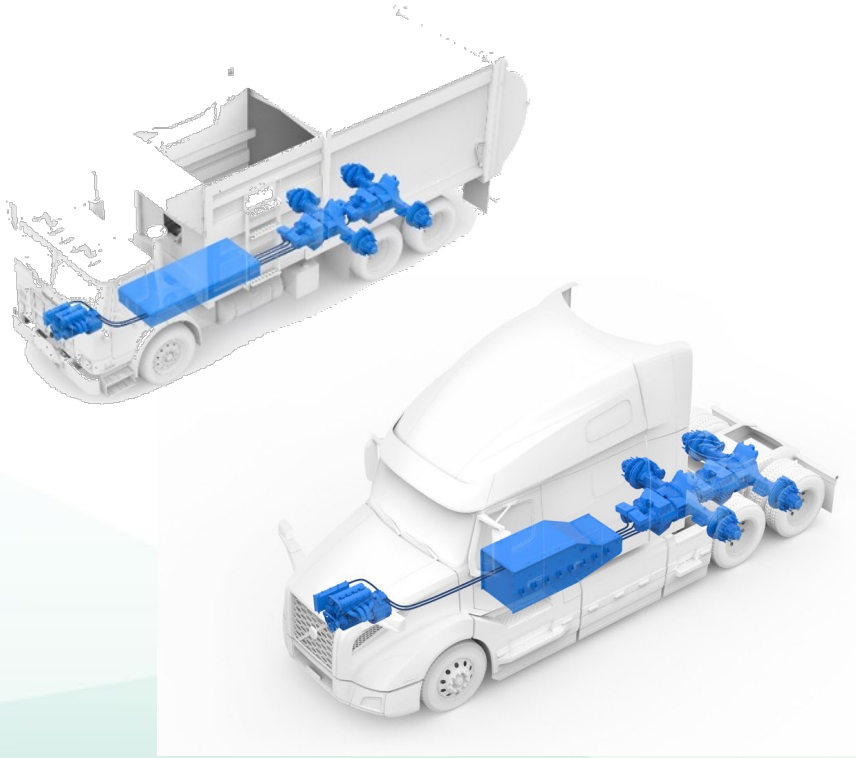
Source: Current Ways, Inc.

Wrightspeed, Inc.

$3,000,000 – Alameda County

Drop-in Electric Vehicle (EV) Repower Kit for Medium- and Heavy-Duty Trucks and Buses

- Convert diesel MD/HD vehicles to EVs
- Reduce scrappage and cost
- Conversions by fleet operator or local mechanics



Source: Wrightspeed, Inc.

Staff Recommendation

- Adopt staff's determination that these projects are exempt from CEQA.
- Approve nine (9) new RAMP grant agreements.