Incubation Cohort 3

Final Pilot Outcomes

Incubation Pilots Program
A LACI pilot program to advance and grow Incubation companies

In the program, LACI supports 9 startups in LACI's core Incubation Program to demonstrate, deploy and validate their emerging solutions.

Program Goals	Funding	Project Deployment by Priority

Incubation Pilots Overview

Startups deploy pilot projects to advance and scale their business in California through:
- Product validation & testing
- Customer acquisition and traction
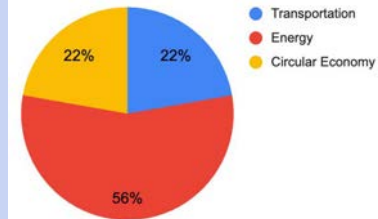- Data capture and project findings
- Learnings to improve their business

LACI provides up to $20,000 to each startup, made possible by funding from the DOE OTT EPIC Prize 2. An additional $40K is allotted to 2 companies per cohort dependent on extraordinary pilot results.

EPIC ENERGY PROGRAM in INNOVATION CLUSTERS
U.S. DEPARTMENT OF **ENERGY**
Office of TECHNOLOGY TRANSITIONS

Startups deployed pilots in each of LACI's impact priorities

Pie chart legend:
- Transportation 22%
- Energy 56%
- Circular Economy 22%

LACI Support

- Pilot project curriculum/course
- Project proposal planning and development
- 3 pitch sessions (e.g. Power Day)
- Project monitoring and marketing

Timeline and Activities of Incubation Pilot Program (2022)

LACI Pilots Curriculum	Proposal App Due	Startup Pilot Preview for EPIC Partners	Second Review	Pilot Approvals
Jan 3	Feb 28	March 30	April 14	April 27

HUMBLE

Description of the Pilot

While batteries in the sub-10kVA range have been available for a while, they've failed to gain traction in field work in industries like Hollywood. Meetings with multiple sustainability departments showed that the number one issue facing adoption is around charging. Humble is building a software platform to manage state of charge of multiple batteries deployed in field, while also providing enterprise services like remote monitoring on top if it. The pilot was the POC for the software platform that will be rolled out to customers like Disney and Warner Bros.

Pilot Outcomes and Findings

- Vertically integrated hardware/software platform.
- Built web services/API to allow for messaging across platforms.
- Twilio integration allowed for easy messaging across all devices.
- User trust in batteries increased by over 50%, with less labor time checking batteries.
- Validated solution with multiple user personas.

Next Steps from the Pilot

Humble is working to scale up this solution to make it ready for the market, involving significant backend and front end work. Humble is also lining up additional pilot sites across other industries for this project.

Most Valuable Learnings

People in other departments wanted notifications to supervise even if they weren't the primary users of the battery. User management is trickier than expected. Crew members work different hours and want different types of notifications. Some users would pay more for a 24/7 monitored service, especially if they were on a larger production.

Location of the Pilot

- Project site: Netflix project under NDA

Flick Power

LACI Pilot
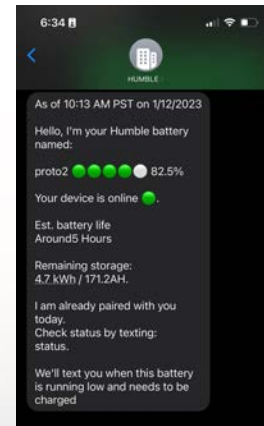
Description of the Pilot

Flick sought to demonstrate the value and effectiveness of its first-generation smart light switch and a wireless plate, which glow colors encouraging users to reduce energy during expensive or carbon intensive 'peak times,' of the day. Working with the Housing Authority of the City of Los Angeles (HACLA), Flick found a suitable site appearing to meet the WiFi and wiring requirements of each device, however the building and most building stock was not suitable. With LACI's approval, Flick rescoped the pilot to test a low power long range radio technology (LoRa WAN) to see if the concept of a wireless, no WiFi device could be possible. Flick was successful in demonstrating LoRa could work for its purposes and using the pilot funding, developed a demonstration unit including batteries and an e-ink screen, increasing Flick's value proposition.

Pilot Outcomes and Findings

- Surveyed seniors in affordable housing, proving they have high interest and concern about community energy costs and interest in Flick like tools.
- Developed a wireless, WiFi version of its technology and deployed units at Independent Square property in Los Angeles.
- Re -invented its technology using a long range (LoRa) communicating protocol, proving the communication capabilities were functional and scalable.

Most Valuable Learnings

Building-wide WiFi, while available, may not be consistent or robust enough for IOT devices.
Some building stock even if remodeled will likely not have neutral wiring required for IOT switches.
A single LoRa WAN hub is adequate to connect a Flick device across larger older buildings.
Adding an e-paper screen to provide energy messaging can be expanded for health and wellness or other important property messages.

Next Steps from the Pilot

Iterate on the design and functionality of the new device, developing message programing for different community types eg senior, student, affordable etc. Source initial paying customers or sponsorship for deployment across different community types.

Location of the Pilot

- Independent Square Senior Community – Los Angeles

LACI

evolectric

For our pilot we converted a medium-duty 2010 truck from Diesel to 100% electric

Pilot Outcomes and Findings

- We have accumulated over 1,500 miles which have provided a CO2 emissions reduction of close to 1 metric ton and fuel savings of about $700 in less than two months.
- We are on track to have annual CO2 reductions of over 8 metric tons and fuel savings of over $5k.
- All this while extending the life of a vehicle that was not going to be permitted to drive in California in 2024 due to its previous emissions.

Next Steps from the Pilot

- Larger scale pilot projects & customer contracts with pilot partner, TCI Transportation
- Investor interest for $1.2M Pre-Seed & $100K loan from the LACI Debt Fund

Most Valuable Learnings

- Commercial trucking companies, like TCI Transportation are looking for cost effective solutions to electrify their fleet without having to purchase all new equipment – Evolectric was the solution they didn't know they had.

Location of the Pilot

- TCI Transportation - Commerce & Pomona

Description of the Pilot

This pilot provided Delphire with a critical outdoor test site for early phase II efforts (DE-SC0021807). At this site we tested several possible mounting solutions clean energy (solar) power configurations for our device to ensure that they can operate stably from anywhere to reduce the GHG impact of wildfires in a clean and responsible manner.

Pilot Outcomes and Findings

- Rented and tested the basics of a possible future trailerized version of the Delphire Sentinel system. This would allow mobilizing the unit where fire risk is greater.
- Planned solar system was found to be insufficient to support our planned power usage in the real world.
- Mounting of the device needs careful consideration and planning.

Next Steps from the Pilot

- This led to working during our Phase II effort to investigate the correct sizing of panel/batteries to support our system in the field.
- Allowed us to prepare for eventual field deployments of our devices.

Most Valuable Learnings

- We learned that our planned panel power production was not sufficient leading to possible possible loss of power when cloudy days occurred.
- Trailerized unit did not gather much customer interest due to likelihood of theft.

Location of the Pilot

- LACI La Kretz Innovation Campus (LKIC) Parking Lot

EnergosAI

Description of the Pilot

The goal of our pilot was to use past data and build machine learning models to forecast demand from EV chargers and forecast the power that the solar can provide to meet demand, thus giving differential demand, which will be needed from the grid. This is important because differential demand estimation will be the crucial first step for mobility micro-grids to do energy arbitrage.

Pilot Outcomes and Findings

- We trained over 30 ML models using past 2 years data
- The models were able to predict the supply from solar for the next 2 hours very well, the RMSE value on test set is just 12.43 kWH
- The ML models were able to predict the demand on main building meter is not good, the RMSE value on test set is 30.5 kWH
- The ML models were not able to predict demand for EV chargers

Next Steps from the Pilot

We are working on a project with Shell where we will deploy the models for further learning and refine them with more data.

Most Valuable Learnings

Being able to accurately forecast demand from each EV charger which is crucial to a balanced grid, needs additional input like slot bookings from EV car owners and aggregators which can help for more accurate demand projection.

Location of the Pilot

- Project site: LADWP's La Kretz Innovation Campus (LKIC)

# OLOKUN MINERALS

Description of the Pilot

Olokun plans to test water samples taken from California desalination plant/waste and send to the chromatography system at NREL to determine the purity rate of the minerals to see if they can be sold, proving their business case.

Pilot Outcomes and Findings

- Identified mineral concentrations outside of initial scope that would be a benefit to customers → new possibilities not considered before
- Pilot budget scoped with LACI is now the benchmark price for customers

Most Valuable Learnings

- Boron is a key compound that desalination facilities in the Central Valley are struggling with. It is imperative to find a valuable use case for this element in order to mitigate brine waste in this region. Olokun Minerals has not yet found a use case for Boron - this is now one of the elements we are looking at for R&D.
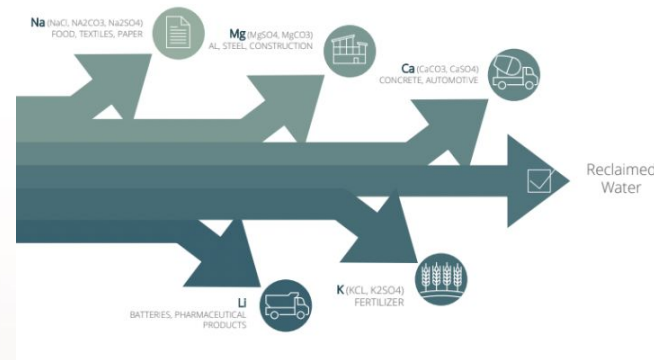
Next Steps from the Pilot

Our next step is to duplicate our ability to tell companies what is in their wastewater with other companies. We also are looking to do a larger pilot where we recover elements from the wastewater to sell. We are doing this in the lab and need to translate this into the real world.

Location and Timeline

- Samples taken from partner Grassland Basin Authority in Fresno County
- NREL lab to test onsite in Colorado

MeterLeader

Description of the Pilot

MeterLeader will test the effectiveness of energy savings challenges as it relates to the level of acquired participation, level of energy savings generated, and level of participant engagement with challenge content. The pilot will also test if the size of the company (challenge sponsor) and the size of the prizes impacts these metrics as well.

Pilot Outcomes and Findings

- Based on feedback, MeterLeader fixed technical glitches, and introduced new energy saving modules to better fit the needs of their customers
- Developed a new style of promotion and communication in working with a partner to distribute challenge instructions & reminders
- Since joining LACI, MeterLeader raised $120K in pre-seed funding

Most Valuable Learnings

Communication between companies and participants was challenging to find the perfect process, which influenced the development of a Participation Manual

Next Steps from the Pilot

In working with a partner that distributed the info to a variety of stakeholders opened doors for new potential clients.

Location and Timeline

- Project site: Digital interface, PG&E Territory

- Partner: USGBC-LA

Rewilder

RMWR
HAND CRAFTED IN LOS ANGELES
FROM SALVAGED MATERIALS
REWILDER

Description of the Pilot

The focus of the 2022 LACI Pilot program was to streamline construction of a new tee from trash shirts, using an innovative new process that Rewilder calls Blankslating. They interrogated the process across four areas: 1) Material Inputs, 2) Zero Waste Design + Production, 3) Science Impact Data, 4) Cost Efficiency

Pilot Outcomes and Findings

- Material inputs required 2 categories of raw material - controlled sourcing (pre-consumer brand excess) and variable sourcing (post-consumer process for producing blank blanks)
- Impact data proved theory that upcycling is better than other materials
- Streamlined production for resewing trash tees into 3 new styles
- Increased efficiencies in cost (51% less) and time (6.5 less hours)

Most Valuable Learnings

"With our Comeback Tee, we have proven that it's possible to divert materials like old t-shirts from the landfill, reintroduce them into the circular economy, and create value while doing it."

Next Steps from the Pilot

Further developing partnerships (for educational materials, upcoming projects, customers, material suppliers), expanding workforce & facility, marketing content to capture each project, and further refining cost-savings & efficiencies.
6 new collaborations during pilot, 75 contacts to generate first round of sales (i.e. Disney, NFT.NYC, Warner, USGA, etc)

Location and Timeline

- Project site: Los Angeles, CA

- Partner: UPRISERS

Joule

![JOULE logo]

Description of the Pilot

Joule built and deployed a scaled down prototype of their product into a pool. This was the first working prototype to be put into a water environment.

Pilot Outcomes and Findings

- [Finding 1]
- [Finding 2]
- Pending results from founding team as the pilot data analysis was slightly delayed.

Next Steps from the Pilot

Most Valuable Learnings

Location and Timeline

- Project site: Swimming pool at a private residence

- Partner:

- Started in [Month/year] and ended [Month/year]