



## Alternative Mechanisms: Lab to Market

Bill Farris, Associate Laboratory Director  
Innovation, Partnering and Outreach

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## 40 Years of Clean Technology Research

Nearly 1,700 employees, including more than 300 early-career researchers and visiting scientists

World-class facilities, renowned technology experts

More than 750 partnerships

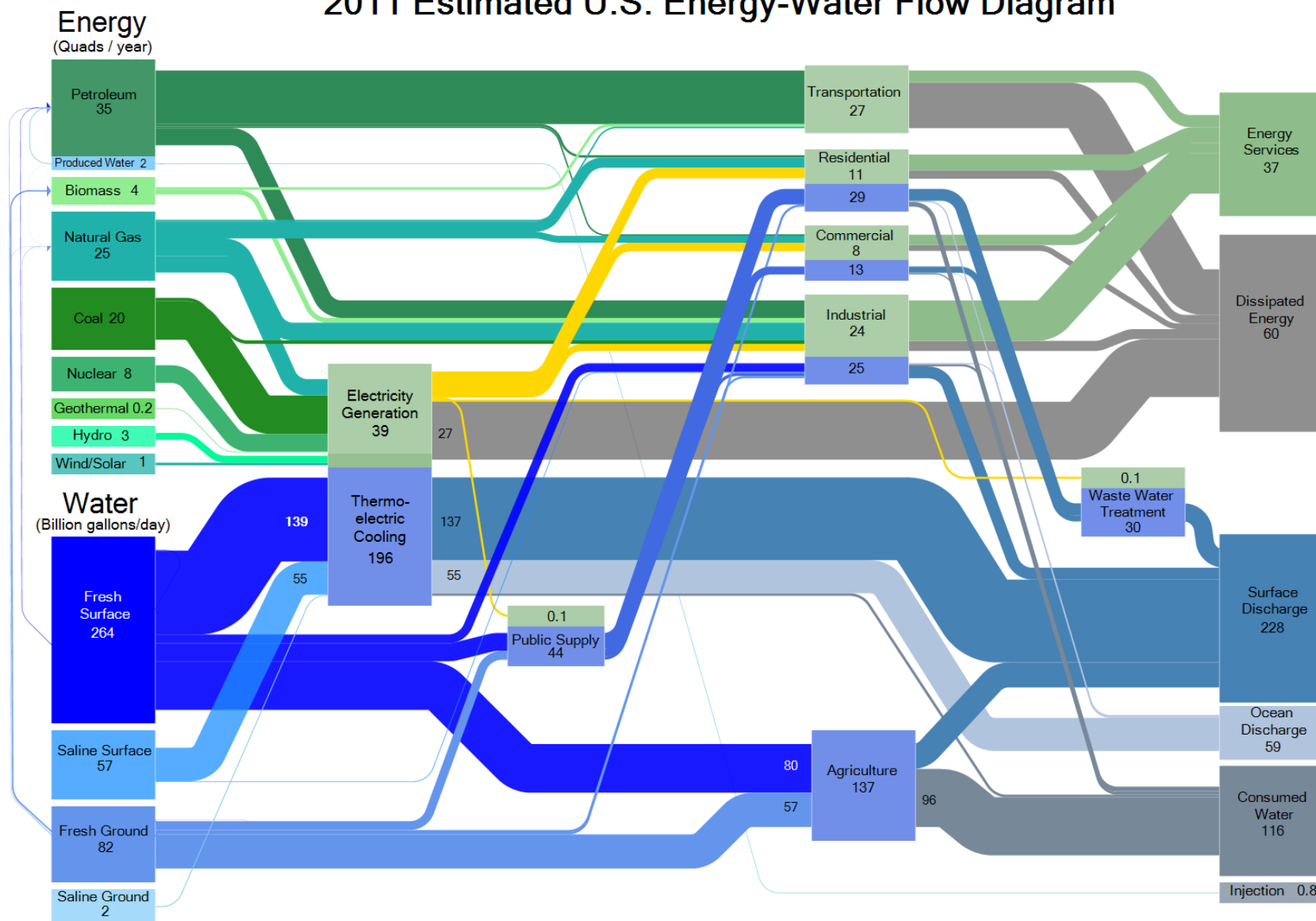
Campus operates as a living laboratory

National economic impact of \$872 million annually



# Energy-Water Nexus

## 2011 Estimated U.S. Energy-Water Flow Diagram



Energy reported in Quads/year. Water reported in Billion Gallons/Day.



Nation's premier clean technology investment event connecting early stage entrepreneurs with receptive sources of capital, corporate partners, and global energy companies.

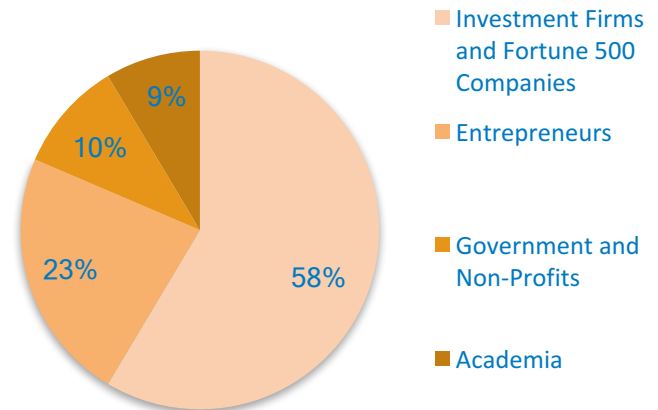
**Apply**  
Aug-  
Dec

**Select**  
January

**Forum**  
April

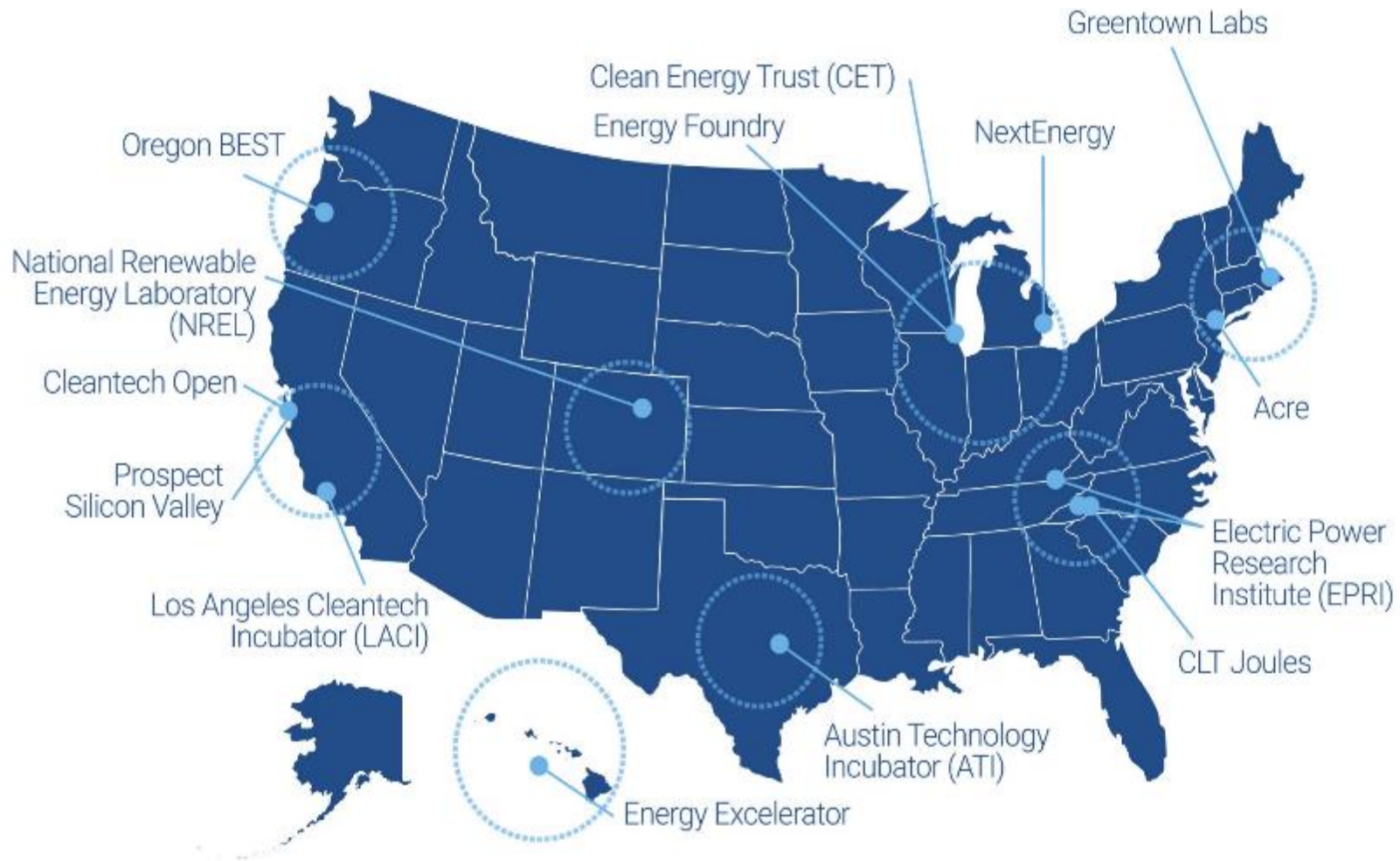
- 100-200 clean energy startups from around the world apply
- 80+ investors review and score application
- 30 Presenting Companies
- 350+ Attendees
- Over 600 1-1 one-on-one meetings

**2015 IGF Attendees**



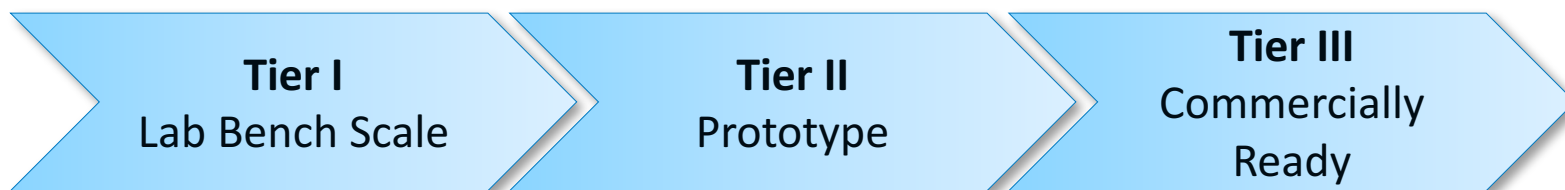
**Since 2003, presenting IGF companies have collectively raised more than \$5.14 Billion in growth financing.**

# Incubatenergy Network



# Key Technology Transfer Opportunity

IN2 supports clean tech startup companies to overcome market gaps by providing access to both technical assistance and business development support



Funding, Mentorship,  
and Coaching



Research and Validation  
Support

- Third-party support enables startups to access unique laboratory capabilities
- Lab research and validation provide support and reduce investment risk
- Upon successful completion of project milestones, opportunity to test within Wells Fargo footprint





## Innovation Incubator (IN<sup>2</sup>)

Fostering a Smart and  
Connected Community

WELLS  
FARGO



### HVAC Systems

Thermal conditioning for buildings or equipment, including water heating and appliances.

### 7AC Technologies

7AC Technologies' liquid desiccant air conditioning system reduces typical HVAC electricity and water consumption by as much as 40%.

### ThermoLift

ThermoLift's natural gas driven heat pump combines heating, cooling and hot water supply — reducing primary building energy use by as much as 50%.

### Software Motor Corporation (SMC)

SMC is building the world's highest efficiency internet-enabled motor for HVAC applications.



### Energy Storage

Battery systems that store energy efficiently and respond to energy demands.

### Energy Storage Systems

Energy Storage Systems' all-iron redox flow battery has the potential for safe and cost-effective energy storage at 30% of current costs.

### NETenergy

NETenergy's thermal battery for HVAC systems enables up to a 30% reduction in typical cooling energy costs by shifting peak demand.



### Smart Glass

Dynamic glass for energy savings and human comfort.

### VG SmartGlass

VG SmartGlass develops a polarizing film-based shading solution with the potential to control both heat and glare with a simple design and low cost.

### Polyceed

Polyceed is developing a low-cost controllable material for dynamic windows that requires no external wiring.

### Heliotrope

Heliotrope is developing a neutral-colored dynamic glass solution with a target of achieving cost neutrality with conventional window solutions.



### Energy Analysis

Technology for conducting energy audits and determining energy efficiency.

### Whisker Labs

Whisker Labs' peel and stick submersing technology enables cost-effective insight into whole-building energy performance.

### simuwatt

simuwatt is a web and tablet-based application for conducting rapid energy audits and analysis.

### Maalka

Maalka's modeling platform reduces the time and cost of accurately modeling and simulating large portfolios of buildings by over 90%.



### Energy Management

Typically hardware technologies, actively manage resources or enable resources to communicate with one another.

### Go Electric

Go Electric provides a microgrid and demand response power system that can enable up to a 50% reduction in typical building energy costs.

### Geli

Geli provides a software platform to design, automate, and manage energy storage systems.

### EdgePower

EdgePower sells and deploys building energy management controls hardware and software.

### Transformative Wave

Transformative Wave is developing a battery storage retrofit kit for commercial buildings that optimizes on-going revenue with 15-30% energy savings and 20-40% peak demand reduction.

### J2 Innovations

J2 Innovations empowers companies with a building automation and operating system for connecting and controlling devices.

### PowerFlex

PowerFlex's adaptive EV charging technology provides a target charging capacity at 40% lower infrastructure and operating costs and reduces carbon footprint.

### Ibis Networks

Ibis Networks addresses plug load management with its patented intelNetwork system, enabling customers to save up to 40% of energy cost on managed equipment.



### Data Infrastructure

Energy efficient data infrastructure and computing.

### LiquidCool Solutions

LiquidCool Solutions' total immersion electronics cooling technology for computer servers offers 40% energy savings relative to air-cooled systems.



### Water

Systems to increase the conservation of water and reduce energy use related to the production and use of water.

### APANA

APANA builds cloud-based analytic solutions to scan, pinpoint, and guide resolution of water waste by instantly alerting frontline staff with actionable guidance.

in2.wf.com



[www.nrel.gov](http://www.nrel.gov)



NREL is a national laboratory of the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, operated by the Alliance for Sustainable Energy, LLC.