



# **EERE Technology Commercialization and Deployment Programs**

**Craig Tyner, Sandia National Laboratories  
Tom Brennan, ARCH Venture Partners**

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Albuquerque, NM  
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# Industrial Partnerships and Strategy

## Helping Sandia

- achieve its strategic objectives
- fulfill its mission
- build constituencies
- generate revenues

Technology Commercialization

Licensing

Intellectual Property

Agreements

Partnership Development

Business Intelligence

Business Planning

Market Analysis

International Partnerships

Entrepreneurial

Small Business

Science and Technology Park

**Craig E. Tyner**

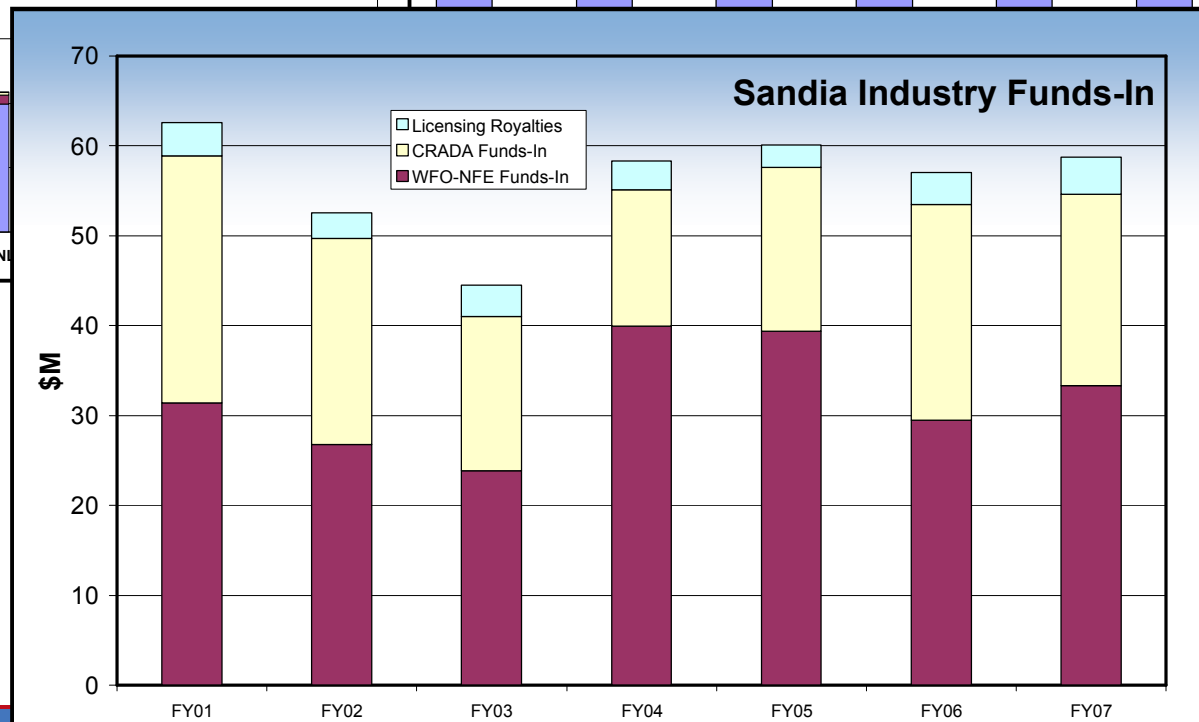
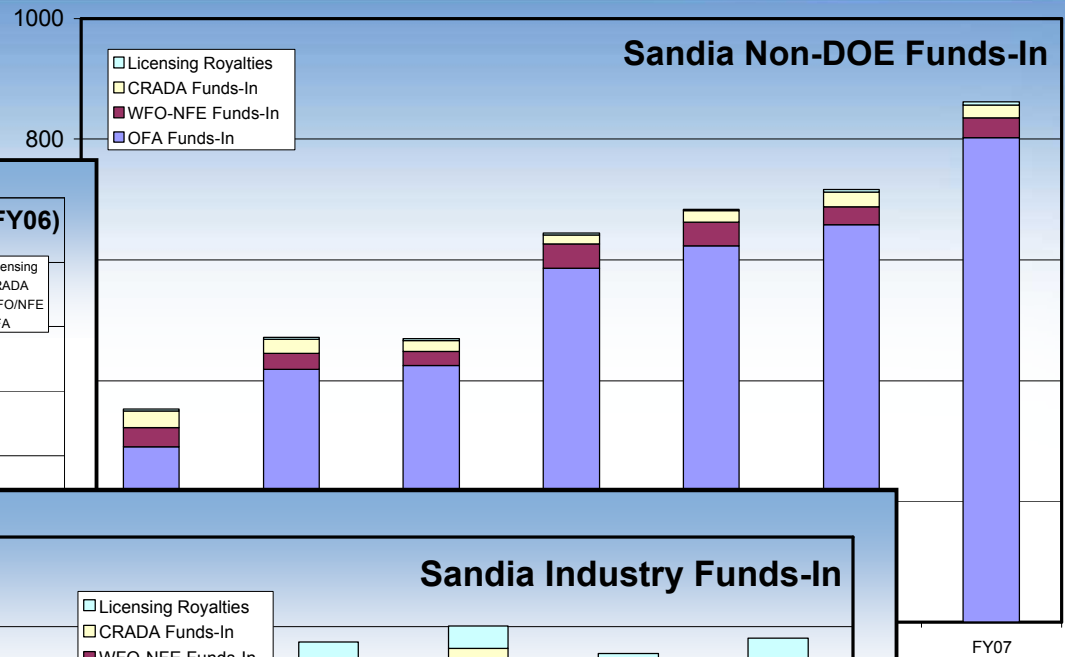
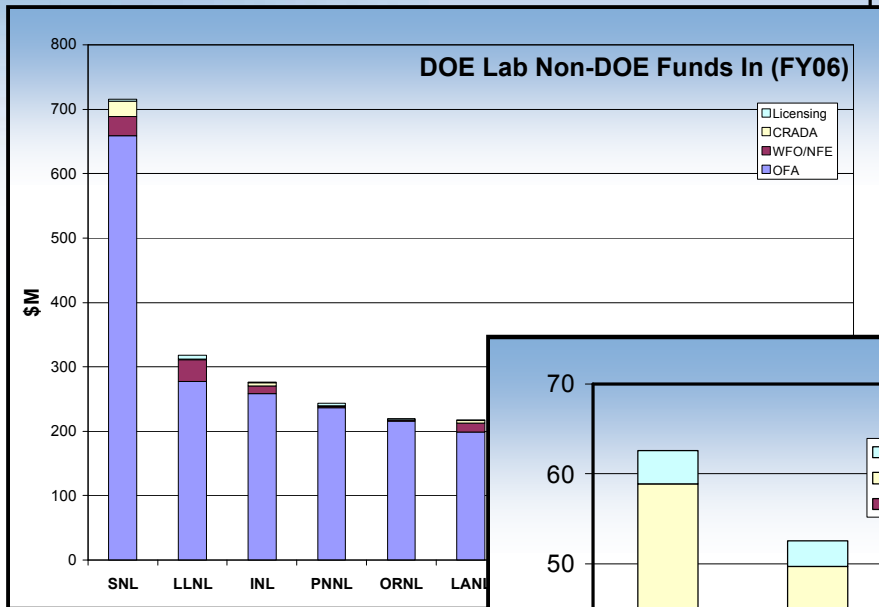


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# Sandia's Non-DOE Funds In





# Energy Policy Act of 2005

## Tech Transfer Requirements

**Title X/Sec 1001:**

### **Improved Technology Transfer of Energy Technologies**

- **Technology Transfer Coordinator**
  - Principal advisor to DOE Secretary on technology transfer and commercialization matters, overseeing
    - ♦ Technology Transfer Working Group
    - ♦ Technology transfer funding
    - ♦ Private sector engagement, including venture capital firms
- **Technology Transfer Working Group**
  - Coordination of TT activities at National Labs
  - Exchange of TT practices information
  - Dissemination TT information to the public and prospective technology partners
- **Energy Technology Commercialization Fund**



# Energy Policy Act of 2005

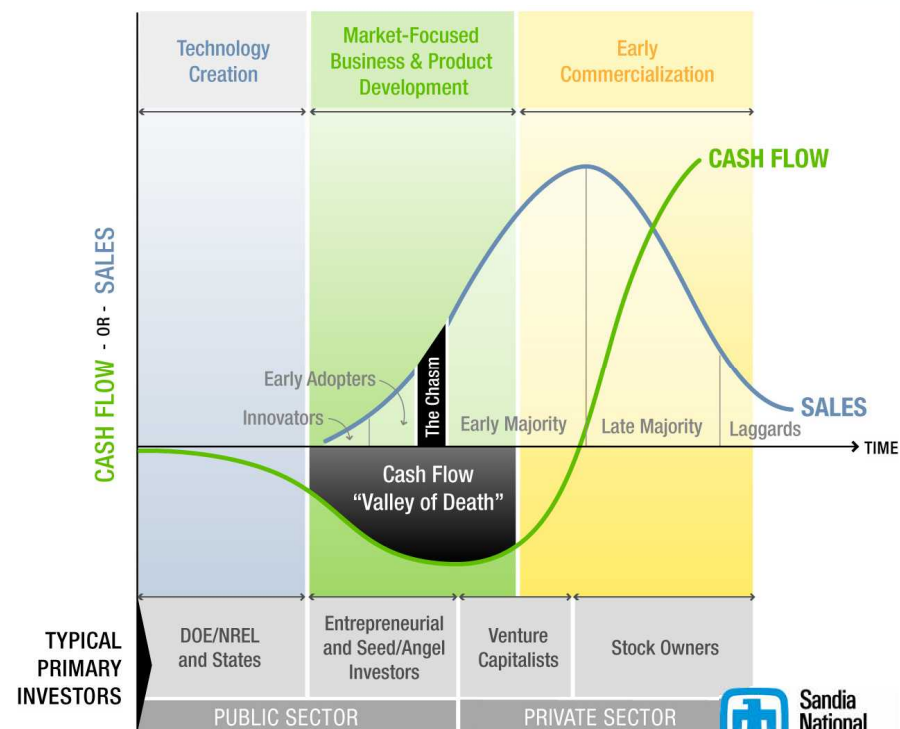
## Technology Commercialization Fund

- Directs that 0.9% of DOE funding for applied research, development, demonstration, and commercial application be used to

“Provide matching funds with private partners to promote promising energy technologies for commercial purposes”

- **EERE's Implementation**

- Venture Capital Technology Showcase
- Technology Commercialization and Deployment Fund (TCDF)
- Entrepreneur in Residence (EIR)



# The EERE Commercialization Team is building four bridges across the “Commercialization Valley of Death”



## ➤ Talent

- DOE traditionally hires scientists – not businessmen
- Developing technologies requires different skill sets than building businesses

## ➤ Information

- Commercialization is impossible if a businessman never learns of a technology
- Effective communication is a fundamental prerequisite of commercialization

## ➤ Capital

- Competition is stiff for venture capital funding
- Venture capitalists are more likely to fund business plans and prototypes than research papers

## ➤ Strategy

# The Venture Capital Technology Showcase introduced leading investors to the most commercially promising EERE technologies developed



## Need

- Many EERE funded technologies stall in the “commercialization valley of death” simply because the innovation has not been clearly communicated to the business community

## Structure

- Challenged EERE Program Managers to identify 8-10 most promising technologies in their portfolio
- Created simple, layman’s descriptions of the innovation opportunity
- Invited prominent venture capital firm to come to Washington DC for a 2-day conference full of technology presentations

## Venture Capital Firms Represented

NGP  
ENERGY TECHNOLOGY PARTNERS

khosla ventures  
venture assistance, strategic advice, venture capital

PINNACLE VENTURES

KP  
CB

N<sup>th</sup> POWER  
Energy | Vision | Capital

MASSACHUSETTS  
GREEN ENERGY FUND

ROCKPORT  
CAPITAL  
PARTNERS

MATRIX  
PARTNERS

Good Energies  
POWER FOR A BETTER WORLD

@Ventures

MDV  
MOHR DAVIDOW VENTURES

BATTELLE | VENTURES

FLAGSHIP VENTURES



TCDF is designed to provide funding for highly-focused projects that move early-stage technologies past the R&D stage by removing specific commercialization hurdles.



## Need

- Innovations struggle to find financing post-research and pre-venture capital funding as described by the “Commercialization Valley of Death”

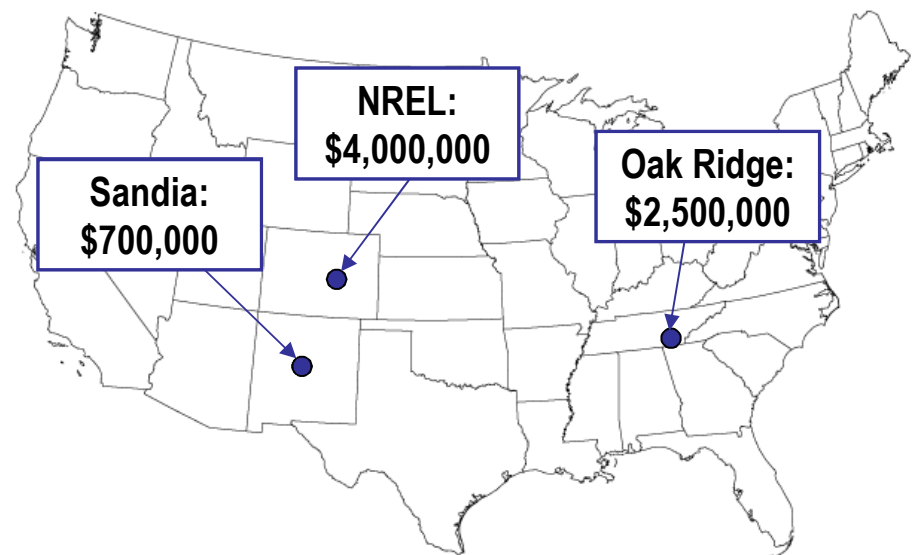
## Structure

- 50-50 industry matched funds required to participate
- Designed to complement angel investment, venture capital series A financings or early stage corporate product development
- Funds restricted to prototype development, demonstration and deployment – not further basic science research
- Rolling basis funding decisions

### FY07 TCDF Funding

## Decision criteria

- Potential market opportunity
- Likelihood of commercial success
- Management team
- DOE priorities
- Private sector partners



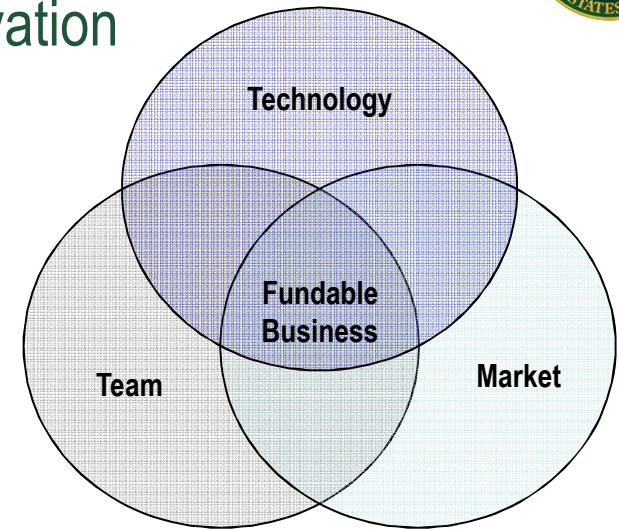


# The Entrepreneur in Residence (EIR) program will bring business talent along side research scientists to amplify and accelerate the market impact of energy innovation



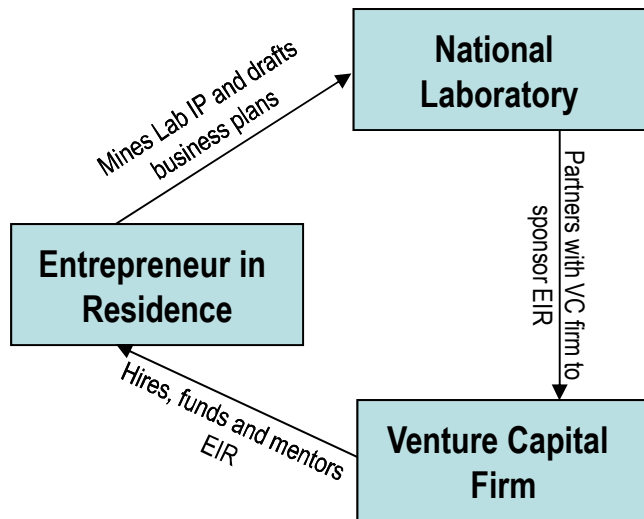
## Need

- Researching innovative technologies requires a vastly different skill set than creating new businesses. National laboratories traditionally employ research scientists who excel at delivering research reports, white papers and patents rather than a business plans.



## Structure

- DOE partnership with Venture Capital Firm
- EERE will provide \$100k and full access to selected labs
- Pre-negotiated standard equity share license agreement
- Venture Capital Firm will identify, hire, manage and mentor “best-of-breed” EIRs
- 2008 EIR Pilot National Laboratories:
  - National Renewable Energy Laboratory (Golden, CO)
  - Oak Ridge National Laboratory (Oak Ridge, TN)
  - Sandia National Laboratory (Albuquerque, NM)



Discover

Evaluate

Plan

Spinout

Build



# Entrepreneur-in-Residence Program

- **Winning VC firms announced Feb 27 by the Ass't Secretary**
  - NREL (Kleiner Perkins Caufield & Byers)
  - Oak Ridge (Foundation Capital)
  - **Sandia (ARCH Venture Partners)**
- **EIR Objective: Identify promising EERE-related technologies and spin out start-up company(ies) to commercialize those technologies**
  - Fairness-of-Opportunity met by competitive solicitation (allowing exclusive licensing)
  - Technologies across the EERE space available to the EIR under terms of the solicitation
  - Direct researcher/EIR interactions on a daily basis



# Entrepreneur-in-Residence Program

- **Extended briefing for ARCH on March 18**
  - Sandia's EERE and Partnerships programs
- **Sandia's EIR is Tom Brennan**
  - Former Sandia Member of Technical Staff (and former EIR)
  - Successfully spun out Sandia technology in the past
  - Started March 31
- **Regular updates with DOE and other labs on EIR Progress**
- **Ancillary benefit for Sandia**
  - Feedback to Sandia's TT programs – what works, what doesn't