# Transmission Research Program

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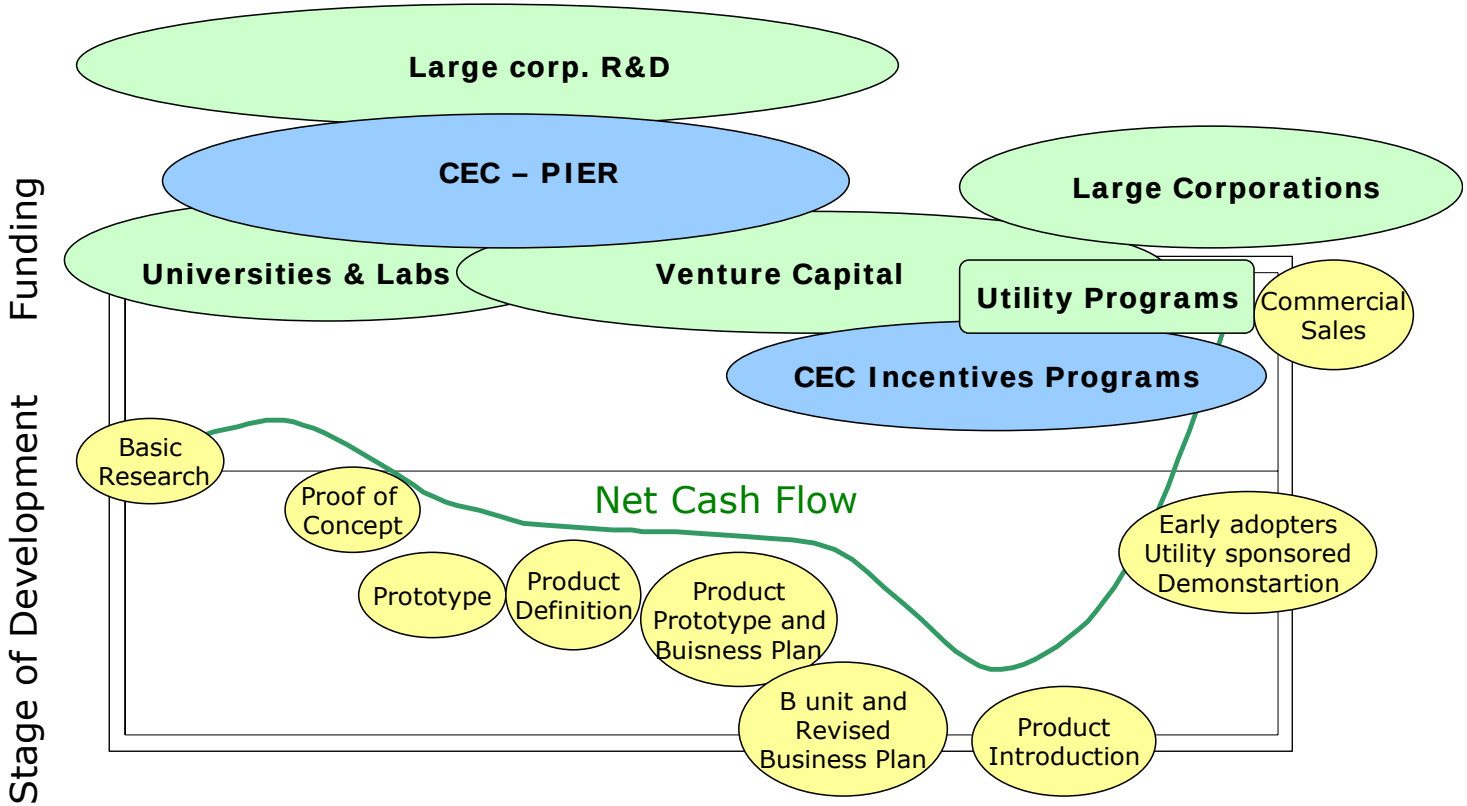
# Public Interest Energy Research (PIER) Program

- IOU Ratepayer-funded program launched in 1997 by AB1890
- Addresses electricity, natural gas, and transportation sectors
- $80M annual budget; nearly $400M in active projects

# The PIER Program Operates in the Context of Public and Private Programs

## RD&D Projects Range from Early Research through Small-Scale Demonstrations



# PIER Funds Provide Financial Benefits in California

| Research Stage | Total | California | % |
|---|---|---|---|
| | Total | | |
| Basic Research | $11,740,821 | $8,273,253 | 70.5% |
| Technology Development | $37,769,414 | $30,749,881 | 81.4% |
| Technology Demonstration | $23,768,826 | $22,197,757 | 93.4% |
| Market Support | $13,846,394 | $11,110,615 | 80.2% |
| Policy/Regulation Support | $8,358,030 | $7,489,028 | 89.6% |
| **Totals** | **$95,483,485** | **$79,820,534** | **83.6%** |

[1] Based on 2-year sample period of activity (July 1, 2004 and June 30, 2006).

# PIER Research Ongoing at all Levels

## Transmission

- Phasor Measurement
- Advanced displays
- Advanced comm & controls
- MRTU interface
- Energy Storage
- Renewables

## Distribution

- Distribution Automation
- AMI
- Advanced C&C
- MRTU
- Energy Storage
- Renewables

## Integration

- Renewables
- Standards
- Protocols
- Reference designs
- Micro Grids
- Automation

## Consumer

- Automating Demand Response
- AMI
- Dynamic Rates
- Home Area Networks
- Plug in Hybrids
- Renewables
- Energy Storage

# Today's Program

- Series of ongoing research projects focused on transmission issues
- Mixture of university, government and industry managed efforts
- Topics:
  - Transmission system operations and planning
  - System models and analysis tools
  - Renewable integration
  - New system technologies

# Follow-up Questions

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