DR ETD Commercialization Plans

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Purpose

- Describe commercialization plans that we hope will engage the private sector in an R&D process that is developing enabling technologies that could help California deal with future energy crises
- Start a commercialization dialog that will lead to new products and services that support dynamic electricity pricing

DR ETD Long-Term RD&D

- 60s ARPA/90s HP applied RD&D model
- Long-term (3-8 year) focus
- Multi-disciplinary, collaborative
- Strategic not tactical
- Leveraged mission-oriented funding
- Looking for huge public interest payoffs
- R&D activities will evolve with market

Background

- **Not traditional technology transfer**
  - Transition partnership not baton hand-off
  - Prototypes not products are being developed
  - Possible reference designs
- **Based on proven private sector models**
  - Partnership between R&D and product teams
  - Technology-driven but market focused
  - Adapted to public sector financing

Traditional Models

- **Write a report at end of R&D**
- **Present R&D at meetings and workshops**
- **It might get into newspapers or certain popular print magazines**
  - MIT Technology Review
  - Scientific American
- **General approach is to passively make R&D information available**

High-tech Private Sector Models

- **Corp funds strategic long-term R&D**
  - Technology to stay ahead of competitors in existing markets (e.g., nanotechnology)
  - Novel uses of domain technology (e.g., ink jets for other organic fluid applications)
- **Divisions fund tactical short-term D&D**
  - Productizing technologies, cost reduction, ..
  - Packaging for market acceptance

DR ETD = Strategic R&D

- **Corporate examples**
  - Not like AT&T 50 years ago (e.g., transistor)
  - More like HP 10 years ago (e.g., ink-jet)
- **Public funding examples**
  - Not like NSF basic research
  - More like 60s ARPA applied RD&D
  - Not like PIER tactical R&D

Example of Corporate R&D

- **Identify promising technologies related to Corp mission statement & strategic plan**
- **Propose R&D projects, describe potential**
- **Team includes marketing/sales influence**
  - Potential champions
  - Team members can change with time
  - Can use results at any time
- **Periodic reviews**

PIER DR ETD Challenge

- **Find equivalent of marketing/sales people**
  - PIER doesn't have them
  - Industry does
- **Maintain PIER (Public Interest Energy Research) focus**
- **Hit a home run, i.e., make sure that the potential rewards match the risks**

The Vision

- **Technology Transfer won't be sufficient**
  - Writing a report is too passive
  - Demonstrations can't replace hands on
  - Workshops attendees don't always get it
- **"Skin in the game" will work**
  - Must be an active participant
  - Must become part of the team
  - Must have a market reason to join

A Useful Paradigm

- **Long-term R&D**
  - Generic goals set direction of activities (RONs)
  - Results dictate steps along the path (flex SOW)
- **Meandering River**
  - Gravity sets direction of the river
  - Topology dictates the specific route of the flow
- **Come along for the ride**

Meandering River

Commercialization Plan

- Join the R&D journey at any time
- Come and go as you please
- Exploit what you see
- If there is IP, license it (we can facilitate discussions with the owners of the IP)

Float Along with the Flow

Private Sector Contributions

- Meet the researchers in their facilities
- Get to know and understand what they are trying to accomplish
- Interactions should influence both sides to better understand R&D potential
- The result is a wider river with less meandering as R&D approaches its goals

Ideas Merge

Don't Limit Creativity

- **The researchers are developing enabling technologies that they will demonstrate with working prototypes (not products)**
- **The private sector must develop the ideas for products that they can sell**
  - Champions to their companies
  - Connection to the market

Pan for Nuggets

Summary

- DR ETD is long-term focused
- Traditional technology transfer is not the proper model for benefiting from R&D that is attempting to change paradigms
- The private sector needs to be involved and immersed in the R&D to understand and influence the process