EE/RE Technology Financing and Investment

Florida Energy Consortium Summit
September 2011
Agenda

- Sources and Stages of Investment
- Overview of Financing and Investing in EE/RE Technologies
- EE/RE Investing in Florida
- Focus: Venture Financing
Sources & Stages of EE/RE Investment
From Seed Capital to Capital Markets
Types of Financing Available for RE/EE Technology

- **Government Grants / Subsidies / Legislation**
  - Created by government legislation; may be finite/non-renewable
  - Federal (e.g. 1603 Program), State (e.g. FECC), or Local (e.g. City of Tallahassee utilities; Gainesville Regional Utilities solar feed-in tariff)

- **Venture Capital / Private Equity / Public Equity**
  - From “angel” or “seed” investments for technology development to later-stage funding for market-accepted technology
  - 1Q11 marked the 4th time in history that quarterly VC investment in EE/RE technology exceeded $1 billion

- **Project Finance**
  - Asset-based financing: project lenders have recourse to the underlying assets of a project
  - Involves both debt and equity, and the debt-to-equity ratio is typically greater than 1:1 (e.g., 70% debt to 30% equity)

- **Customer-Backed Finance**
  - Power Purchase Agreements (PPAs):
    - A long-term (10, 20, 30+ years) contract between a power generator and a power consumer (or distributor)
    - Allows power consumers to purchase power (solar, biomass) from a third-party developer
  - Leasing: Similar model, but shifts power production risk in exchange for lower anticipated cost and greater control

Source: National Venture Capital Association
Stages of Energy Technology Development and Investment

Financing and Investing in EE/RE Technology

A Global and National (U.S.) Perspective
Overview of EE/RE Technology Financing, Globally

- The installed EE/RE capacity in the world and in the U.S. more than tripled from 2000-2009
- In 2009, renewable energy accounted for more than 55% of all new electrical capacity installations in the U.S. vs. only 2% in 2004
- Following the downturn in 2008 - 2009, the global market for EE/RE investments rebounded in 2009 - 2010:
  - **Project Finance** increased 20% to $128 billion
  - **Venture Capital** investment increased 19% to $5.5 billion
  - **Public Market** investment increased 23% to $15.4 billion

Globally, the majority of EE/RE companies are funded through asset ("project") finance (61%), and a much smaller portion of companies receive venture capital (1%).

In the U.S., venture capital & private equity account for almost 20% of EE/RE funding:

A Closer Look at Sources of EE/RE Financing in the U.S.

**Project Finance**
- The U.S. is the second largest provider of project financing for EE/RE deals, behind China.
- The $11.2 billion invested in project finance in the U.S. in 2009 was deployed primarily to wind, solar, and other renewable energy sources.

**Venture Capital / Private Equity**
- North America accounted for $3.7 billion (67%) of global VC/PE investment in EE/RE in 2010 vs. 56% in 2009.
- U.S. VC/PE investment has primarily focused on technologies related to biofuels, solar, energy efficiency and smart grid technologies.

**Government Grants / Stimulus Funds**
- The U.S. ($67 billion) is the global leader in the amount of grant/stimulus funding targeting EE/RE technology, followed by China ($47 billion).
- By 2009, only 9% of existing grants had been invested, with 2/3 expected to be invested during 2010-2011.

EE/RE Investing in Florida

Driving Florida’s Clean Energy Economy
Clean Energy is a Target Industry for Investment in Florida

- **Clean Energy Technology**
  - Solar
  - Biofuels
  - Water
  - Storage / Smart Grid
  - Efficiency

- **Life Sciences**
  - Biotechnology
  - Medical Device Manufacturing
  - Pharmaceuticals
  - Health Care

- **Homeland Security/Defense**
  - Homeland Security
  - Defense

- **Information Technology**
  - Simulation & Training
  - Photonics/Optics
  - Digital Media
  - Software & Computer
  - Telecommunications

- **Aviation/Aerospace**
  - Aviation
  - Aerospace

- **Financial/Professional Services**
  - Financial Services
  - Banking
  - Professional Services

Source: Enterprise Florida
Investments in FL’s EE/RE Sectors

- **SOLAR**
  - Darden Restaurants announced investment in a 1.1 MW solar panel roof at its Restaurant Support Center (Aug. 2011)
  - FP&L developed 3 solar plants in 2009-10 (DeSoto Next Generation Solar Energy Center in Arcadia; Martin County; & NASA Space Center), totaling 110MW and making FL one of the largest solar power-producing states in the U.S.
  - Mustang Solar, a subsidiary of Mustang Vacuum Systems, produces vacuum deposition equipment for industrial applications, including advanced, highly efficient, high yield PV production; Mustang won a $2 million grant from FL's Renewable Energy and Energy-Efficient Technologies Grant Program in Feb. 2010 and completed a $5+ million financing in May 2011

- **BIOMASS / BIOFUEL**
  - LS9, which converts plant-based materials into fuel and chemicals, established a new facility in Vero Beach and completed a $30 million Series D in Dec. 2010, bringing its VC funding to $75 million. It rec’d a $9 million DOE grant in July 2011
  - American Renewables (a Mass.-based private biomass developer) and Gainesville Regional Utilities (GRU) began construction in March 2011 on a 100MW biomass plant 8 miles northwest of Downtown Gainesville, to be completed in 2013

- **OTHER EE / RE**
  - Siemens Energy received a $4.1M grant from the DOE to improve wind turbine aerodynamics (Sept. 2011)
  - MaxWest Environmental Systems raised $32.5 million in Series C financing to implement its MaxWest Gasification System at new facilities in Florida, in addition to its Sanford facility that converts wastewater treatment solids into thermal energy (April 2011)
Why Investment Matters: Financing FL’s Clean Energy Economy

- **Job Creation:**
  - FL’s clean energy jobs (2010): 102,967; FL added 28,298 clean jobs 2003-2010 (4.7% growth)
  - FL ranked 7th among the 50 states and D.C.
  - If FL generated 30% of its power from renewable energy sources by 2020, it would create 37,000 new jobs and generate $16 billion in economic activity by 2025 (FL Dept. of Envir. Protection)

- **Venture Capital Investment:**
  - From 2008-2009, FL’s EE/RE companies attracted $21 million in venture capital and private equity (Bloomberg New Energy Finance)

- **Government Stimulus/Grants:**
  - The DOE, through the American Reinvestment & Recovery Act (AARA), allocated Florida in excess of $1 billion to fund state-level energy efficiency and renewable energy priorities via rebates, tax credits, grants, and investments (www.energy.gov)

Focus: Venture Financing

Early Stage Investments
U.S. VC and Private Equity Investment in RE/EE Technology