



Pennsylvania's Energy Financing

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Agenda

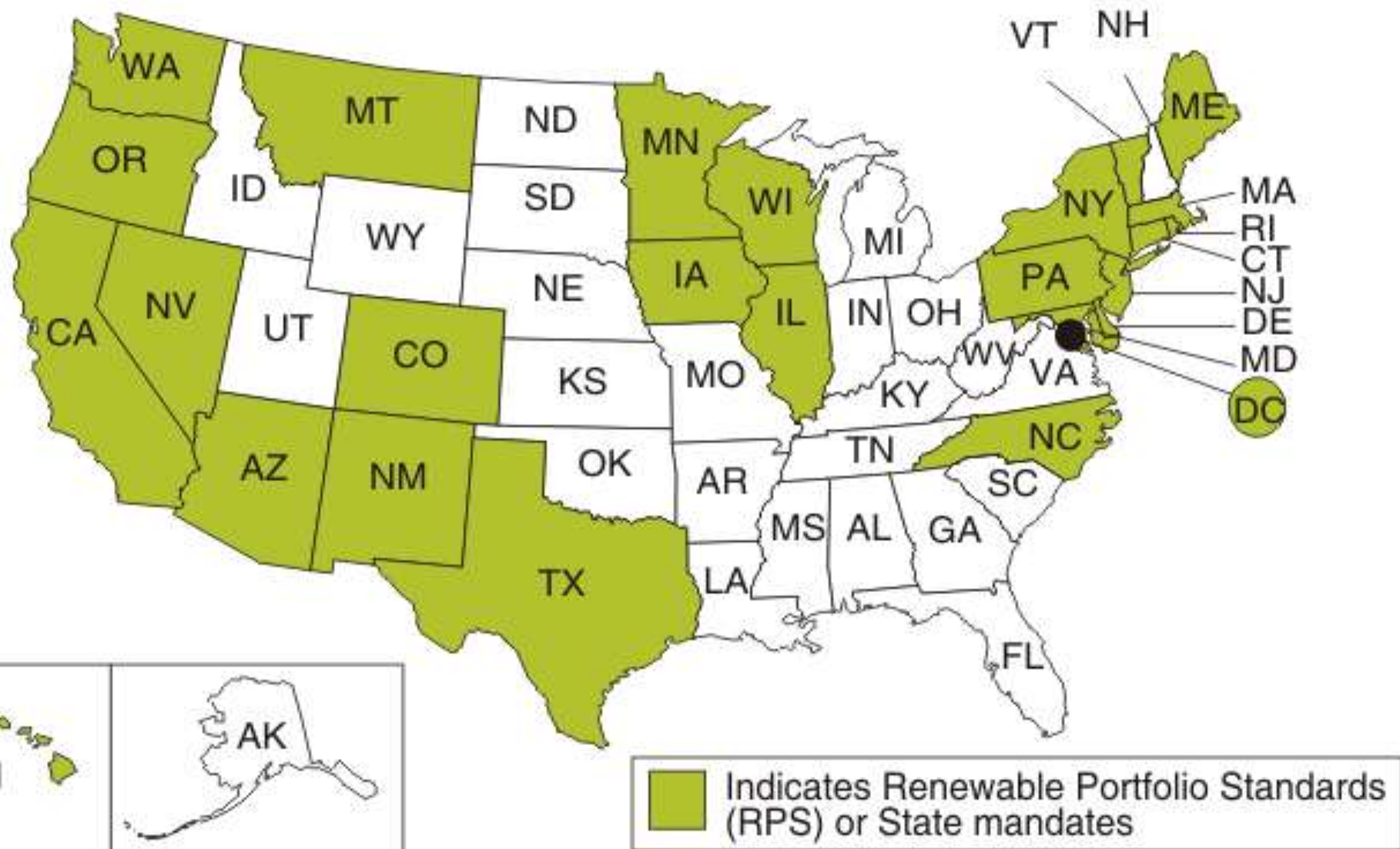
- Why is energy financing needed now?
- What has Pennsylvania already done in the sector in recent years?
- What is included in the Alternative Energy Investment Fund?

Pennsylvania's Alternative Energy Portfolio Standard

- Pennsylvania's Alternative Energy Portfolio Standard of 2004 requires electric distribution companies and electric generation suppliers to provide 18 percent of electricity using alternative energy resources by 2021

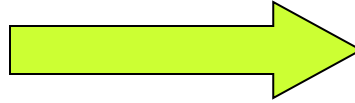


About Half of States Have RPS and Renewables Mandates, 2007



Sources: Energy Information Administration, *Renewable Energy Annual 2005* and Database of State Incentives for Renewables & Efficiency, <http://www.dsireusa.org/>, accessed March 13, 2008.

‘Envirotech’ or ‘Greentech’ 1970s to mid 1990s



Cleantech Late 1990s – Today

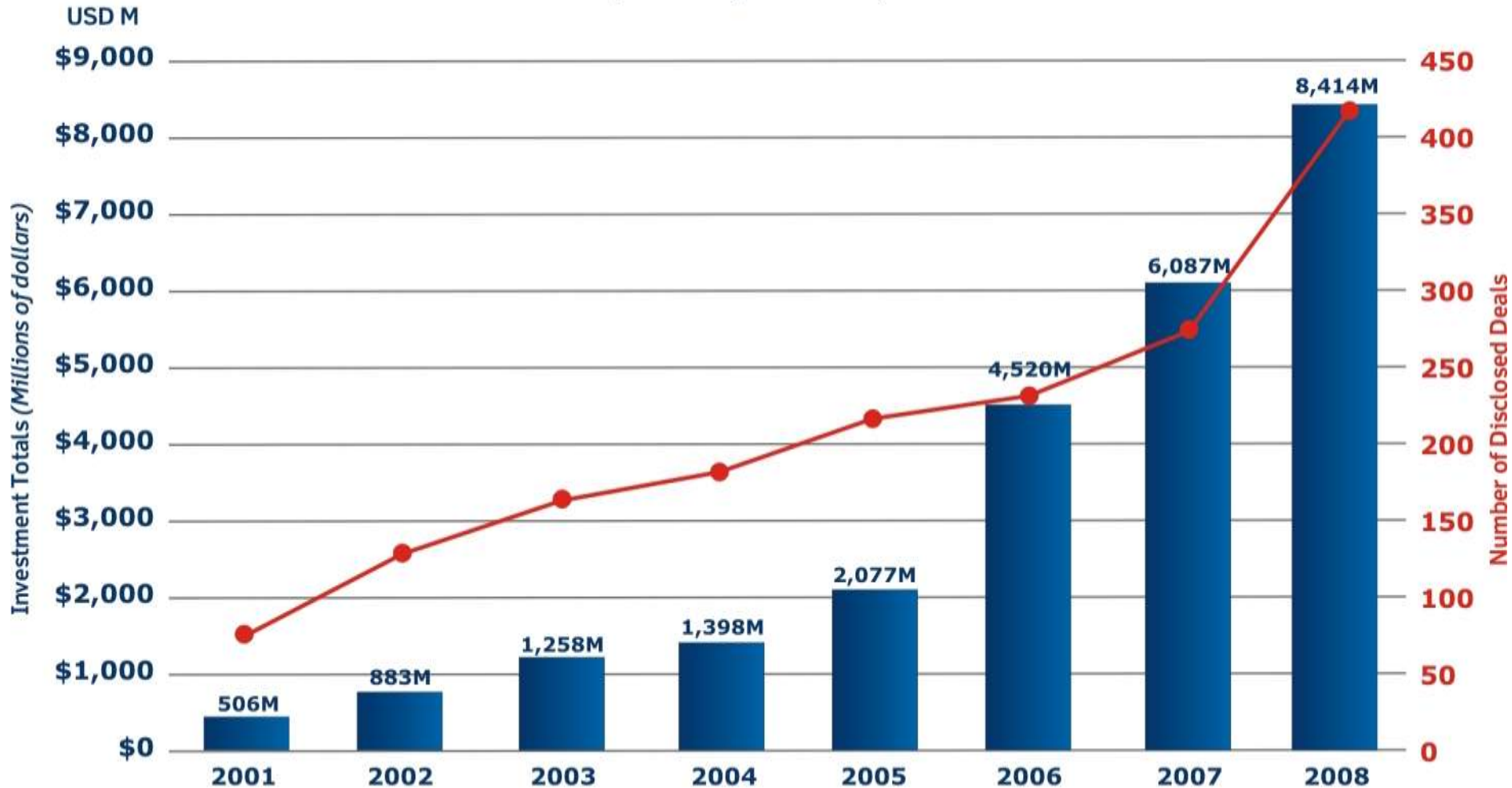
- Regulatory-driven, regional markets
- Compliance-based purchasing
- “End-of-pipe” tech, e.g. stack scrubbers, remediation
- Chemical science
- Traditional construction engineering
- Slow growth markets, e.g. waste management
- “Save the world/touchy-feely” mentality
- Low use of IT

- Increasingly a market-driven trend
- Global market in \$ *trillions*
- “Front-of-pipe” tech e.g. zero-emission plants
- Biological & materials science
- Systems design & engineering
- Rapid growth markets, solar, wind, desalinization
- “Entrepreneurial” mentality
- High use of IT (*repeat what IT did for telecom*)

Source: Cleantech Venture Network

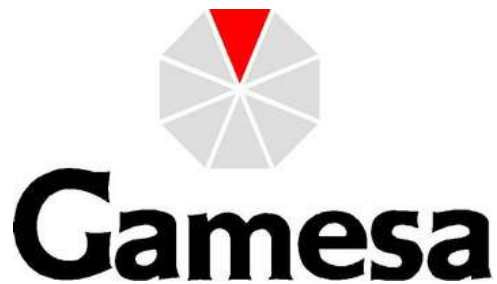
Annual Global Cleantech Venture Capital Deals and Investment Totals 2001 - 2008

(Millions of US Dollars)



Wind Energy

Pennsylvania is expected to have between 3,000 and 4,000 megawatts of wind energy installed by 2021, enough to power 850,000 homes



Solar Energy

Pennsylvania is expected to add 850 megawatts of clean, renewable solar energy capacity by 2021, enough to power almost 80,000 typical homes



CONERGY



***AE* Polysilicon Corporation**



EPURON
POWER FOR PORTFOLIOS



Biomass-based fuel

Pennsylvania has the manufacturing capacity to provide at least 85 million gallons per year of biomass-based fuel



Other Pennsylvania Initiatives for Energy

Pennsylvania Initiative for Energy and the Environment

PIEE provides financial resources through the BFTDA University research grant program involving university, government, and industry partnerships:

- (1) to increase commercialization of renewable and non-renewable energy and environmental applications and processes,
- (2) to enhance university-based energy and environmental resources and skills, and
- (3) to accelerate technology transfer of new energy and environmental technologies for licensing and forming new spin-off companies.

Alternative Energy Investment Fund

Of the \$650 million fund, approximately \$335 million is being managed by DCED and will focus on investing in:

- Infrastructure
- Economic development projects
- Alternative energy companies
- Early-stage activities

These investments can create thousands of jobs in a rapidly growing industry.

Ben Franklin Technology Partners

The Ben Franklin Technology Partners will receive \$40 million in assistance for energy-related investments to support early-stage activities including:

1. Company Investment
2. Translational research
3. Management Support
4. Incubator Support Services





pennsylvania
STATE OF INNOVATION

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