Emerging Drivers for Cleantech Investments: An EPA-Investor Roundtable

September 24, 2009 10 a.m. – Noon

U.S. Environmental Protection Agency 77 W. Jackson Blvd., Room 1932 Chicago

10:00 – 10:10 Opening and Introductions
Walter W. Kovalick Jr., Acting Deputy Regional Administrator

10:10 – 10:25 EPA's Role in Fostering Technology

10:25 – 10:40 Discussion of EPA's Assets for Investors and Entrepreneurs

- EPA's Small Business Innovative Research Program: Special Opportunity to Leverage National Science Foundation SBIR funding, December '09, **Jim Gallup & April Richards**
- Environmental Technology Verification (ETV) Program: EPA Verification of Technology Performance, **Teresa Harten**
- Supplemental Environmental Projects: Opportunities to deploy Novel Technologies through EPA Enforcement, **Alan Walts**

10:40 – 10:50 EPA Regional Technology Needs: Addressing Emerging Environmental Challenges

10:50 – 11:05 EPA's Semi-Annual Regulatory Agenda: Signals for the Cleantech Marketplace

11:05 – 11:25 Initial Responses to EPA Information Related to Demand for Cleantech

- Robert Savage, Fund Manager, Rocket Ventures; Managing Partner, CoreNetwork, Toledo, OH
- Ira Weiss, Associate Clinical Professor of Accounting, University of Chicago Booth School of Business; Faculty Director, Hyde Park Angels; Managing Director, RK Ventures, Chicago, IL
- Keith Crandell**,** Co-founder, ARCH Venture Partners, Chicago, IL

11:25 – 11:55 Roundtable/Across Web Discussion of On-Going Dialogue with EPA about Cleantech

11:55 – 12:00 Wrap Up and Next Steps

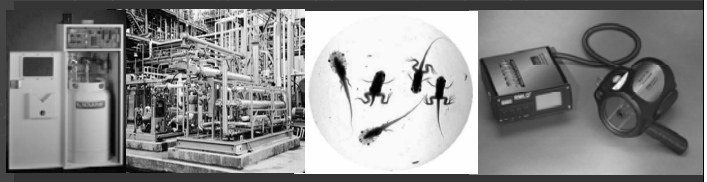
1

United States Environmental Protection Agency

EPA's Small Business Innovation Research (SBIR) Program

Jim Gallup and April Richards

EPA Investor Roundtable



EPA United States Environmental Protection Agency

SBIR Phase I Overview

- In 2009, EPA received 500 SBIR Phase I proposals and we expect about 100 “Highly Rated” ready for award. EPA plans to fund about 40 technologies.
- NSF received 1740 Phase I proposals and will fund 250 – 350 technologies. NSF is expected to fund many of the Highly Rated projects EPA cannot fund.
- EPA Phase I award: $70,000; NSF award: $150,000
- Next SBIR Phase I Solicitations:
  - NSF Phase I: Closing December 2009
  - EPA Phase I: Closing May 1, 2010
  - NSF Phase I: Closing June x, 2010
- GOAL: Double Number of Environmental Awards in 2010

EPA
United States
Environmental Protection
Agency

EPA Collaboration with NSF

- All EPA Topics in National Science Foundation (NSF) SBIR Solicitations
- NSF Budget: $175+ Million in 2009
- Phase II Awards
  - NSF awards $500,000 over 2 years
  - EPA increases to $300,000 (in 2010) over 2 years
- Supplemental Funding
  - NSF Phase 2B open to all Phase II winners
    - Up to Additional $500,000
    - $1 for every $2 from VC, angels, partner investors
  - EPA Phase II Options up to $120,000
- GOAL: Commercialize more Environmental Technologies

4

EPA
United States
Environmental Protection
Agency

SBIR VC Opportunity

- SBIR (EPD08-062): LeskTech Ltd, Upper Michigan
- Copper Mine Tailings used in Asphalt Shingles
- Tailings on Shore of Lake Superior
  - Cheaper materials, 50 year supply, easy to ship
  - Coating developed for better adherence to shingles
- Shingle Manufacturers already Interested:
  - Replace Calcium Carbonate
  - Add anti-algae properties
  - Use on shingle butt/lap surfaces and as filler
- Angel Investors funding Development Plans
- Opportunity for VC investment in Processing Plant

EPA United States Environmental Protection Agency

For More Information…

- NCER SBIR website: www.epa.gov/ncer/sbir
  - 2009 Phase I Solicitation (now closed)
  - Searchable database of all funded projects
  - SBIR Success Stories
- Contacts
  - Jim Gallup, Program Manager (202) 343-9703
  - April Richards, Deputy Program Manager (202) 343-9836
  - James Gentry, Program Specialist (202) 343-9798

EPA United States Environmental Protection Agency

Environmental Technology Verification Program

ETV

- **Credible 3rd party performance testing of commercial-ready technology**
- **Helps…..**
  - **Purchasers – deciding to buy**
  - **Policymakers and Regulators – permitting and regulating**
  - **Vendors/Developers – selling new technologies**
  - **Financiers – invest in tech RD&D**

Contact: Teresa Harten, Director, ETV harten.teresa@epa.gov

EPA United States Environmental Protection Agency

ETV at a glance

ETV

- **407 technologies tested, 90 protocols completed since 1995**
- **Over 300 stakeholders active in advisory groups and technical panels**
- **Collaborations and vendor cost-sharing leverage ETV, generating 50% of total funds in 2004-7; 80% in 2008**
- **2006 case studies document and project outcomes for 15 technology categories verified**
- **www.epa.gov/etv … >1.5 M hits/year**
- **Global recognition - ETV international approach sought with Canada, European Union, Philippines, possibly others**

EPA United States Environmental Protection Agency

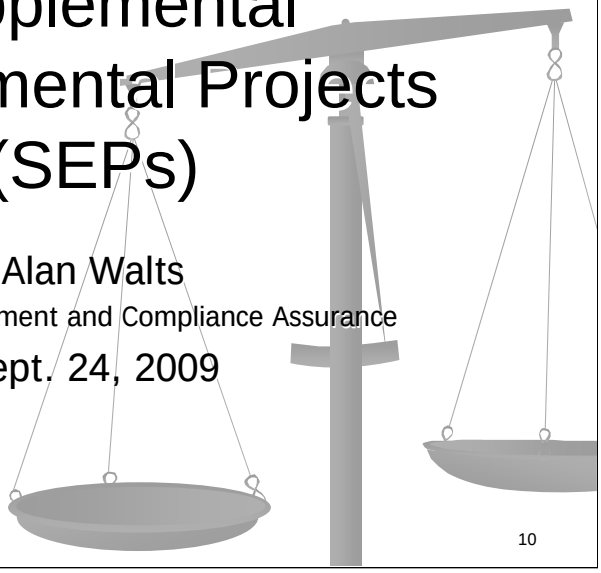
Case Study for Drinking Water Treatment: Verify new membranes (microfiltration and ultrafiltration) for removal of microbials

- Up to 2,200 small drinking water systems need options to meet EPA's Long Term 2 Enhanced Surface Water Treatment Rule; conservative estimate.
- 3 microfiltration and 6 ultrafiltration membranes were verified.
- City of Pittsburgh used ETV results to purchase full scale system and declared savings of $5M over conventional treatment.
- At 25% market penetration (550 systems) of ETV verified membranes:
  - Save $1 to 8M in pilot testing
  - Prevent 2,700 to 13,000 cases of cryptosporidiosis/yr and 0.3 to 2 deaths/yr
  - Realize economic benefits from health savings of $2 to 19M/yr.
- Verifications to be complete for 4 new membranes in Fall, 2009.

Technology Innovation in Enforcement: Supplemental Environmental Projects (SEPs)

Alan Walts
Office of Enforcement and Compliance Assurance

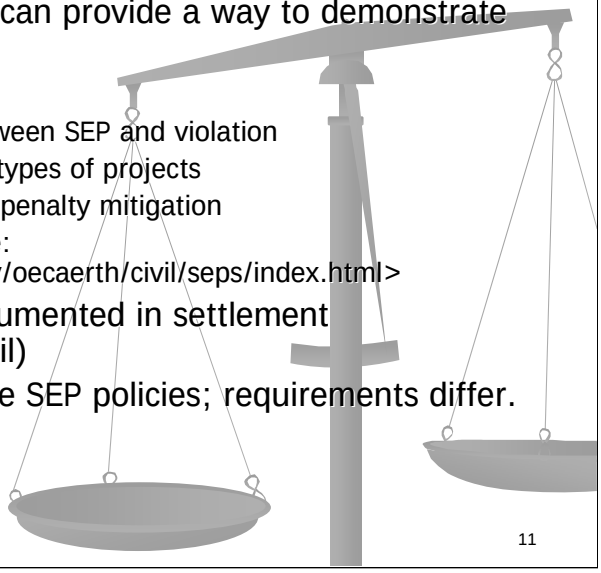
Sept. 24, 2009



10

SEPs: Why and When

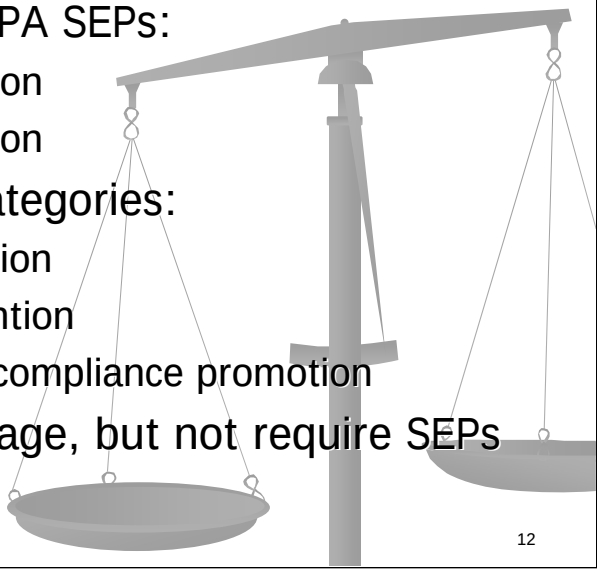
- Enforcement actions can provide a way to demonstrate new technologies.
- EPA's SEP policy:
  - Requires "nexus" between SEP and violation
  - Identifies acceptable types of projects
  - Determines extent of penalty mitigation
  - Policy available online: <http://www.epa.gov/oecaerth/civil/seps/index.html>
- Agreed SEPs are documented in settlement (administrative or civil)
- Many states also have SEP policies; requirements differ.



11

Use for innovative technologies

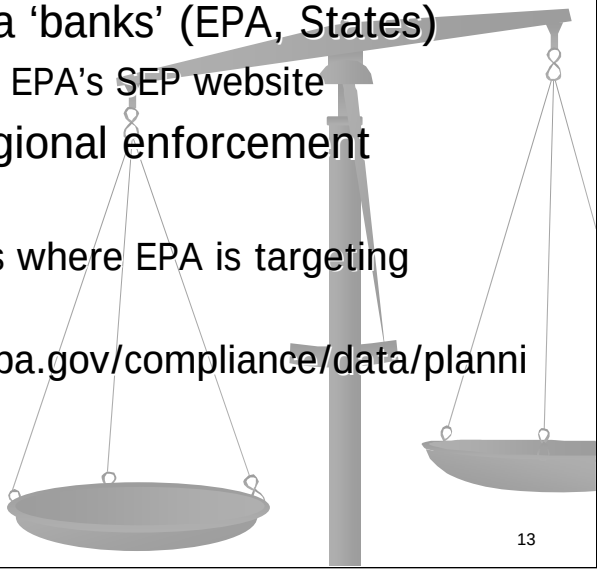
- Total value of EPA SEPs:
  - 2007: $30 million
  - 2008: $39 million
- Relevant SEP categories:
  - Pollution reduction
  - Pollution prevention
  - Environmental compliance promotion
- EPA can encourage, but not require SEPs



12

Where is the market?

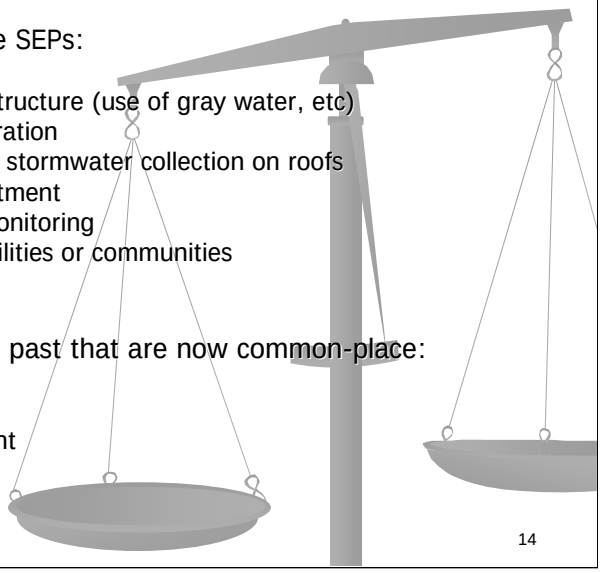
- SEP Project Idea 'banks' (EPA, States)
  - List available at EPA's SEP website
- National and regional enforcement priorities
  - Indicate sectors where EPA is targeting enforcement
  - <http://www.epa.gov/compliance/data/planning/priorities/>



13

Examples of innovative technology SEPs

- Some ideas for innovative SEPs:
  - green building practices
  - sustainable water infrastructure (use of gray water, etc)
  - carbon capture/sequestration
  - solar roofs, green roofs, stormwater collection on roofs
  - wind/solar energy investment
  - continuous emissions monitoring
  - pollution sensors for facilities or communities
  - water filtration
- Innovative SEPs from the past that are now common-place:
  - Diesel retrofits
  - wood stove buy-backs
  - small engine replacement



14