ICAT

INNOVATIVE CLEAN AIR TECHNOLOGIES

February 2005

Grants for Promising Technologies

California Environmental Protection Agency

Air Resources Board

Overview

- Background on ICAT
  -- function and benefits
- Example projects
- Recommended new grants

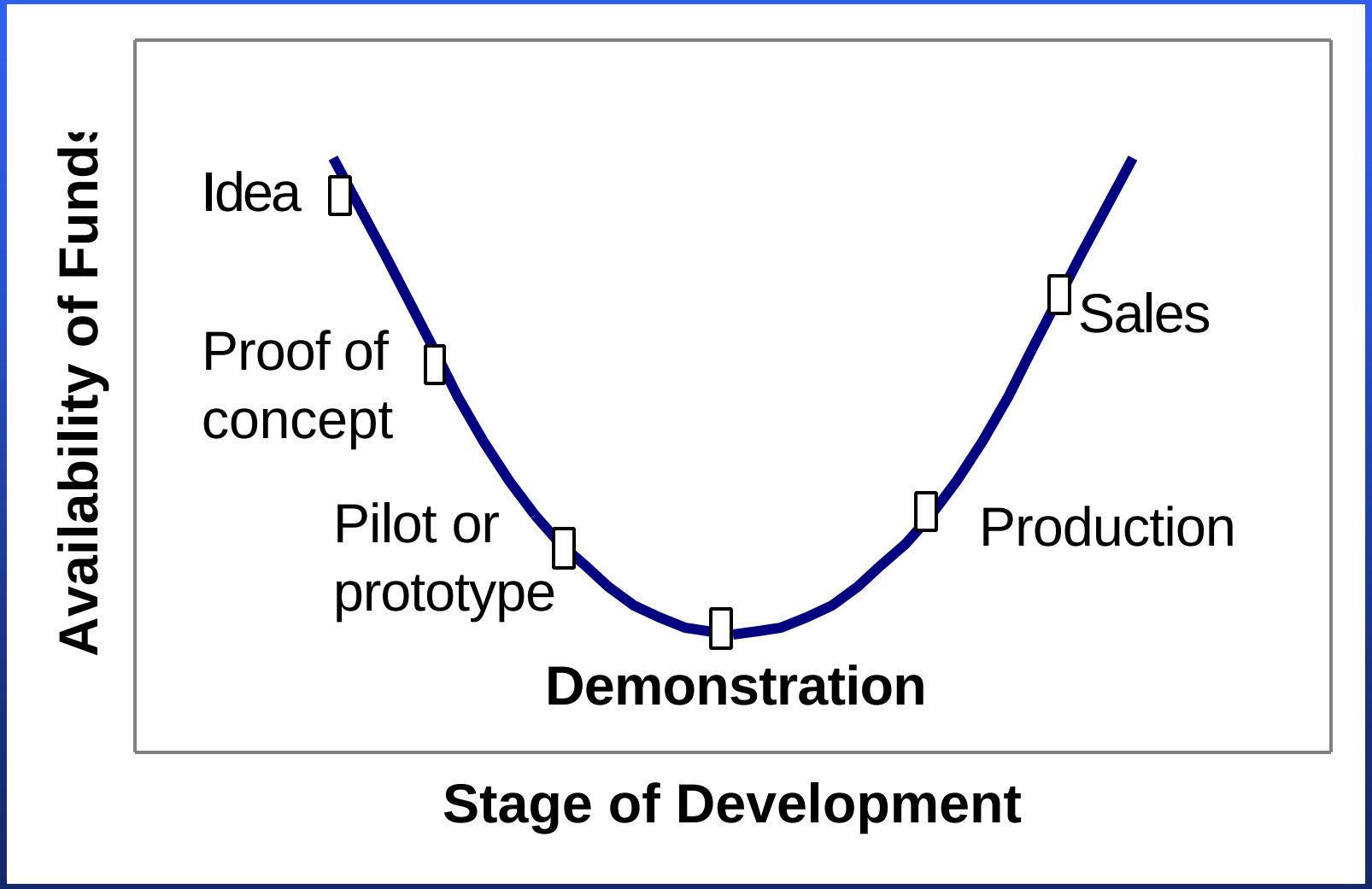
Why was ICAT Established?

To promote:

-- emission reductions
-- ARB initiatives
-- California economy

By: co-funding field demonstrations of new, beneficial technologies

Funding Problem



ICAT Grants

- ICAT funds up to 50% of project costs
- ICAT does not pay for hardware
- Conditions on payments to grantee

ICAT History

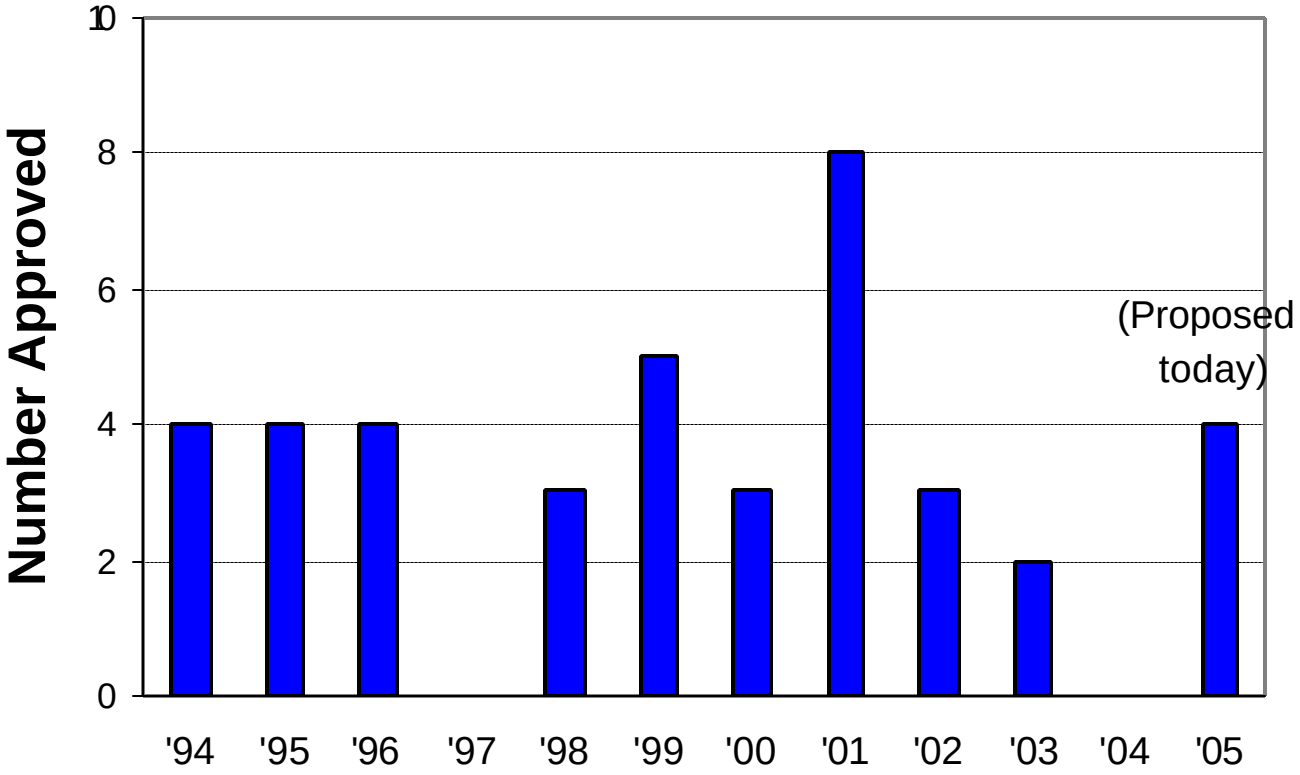
- 36 projects approved since 1994

  -- technologies for mobile, area, & stationary sources

  -- fine PM measurement

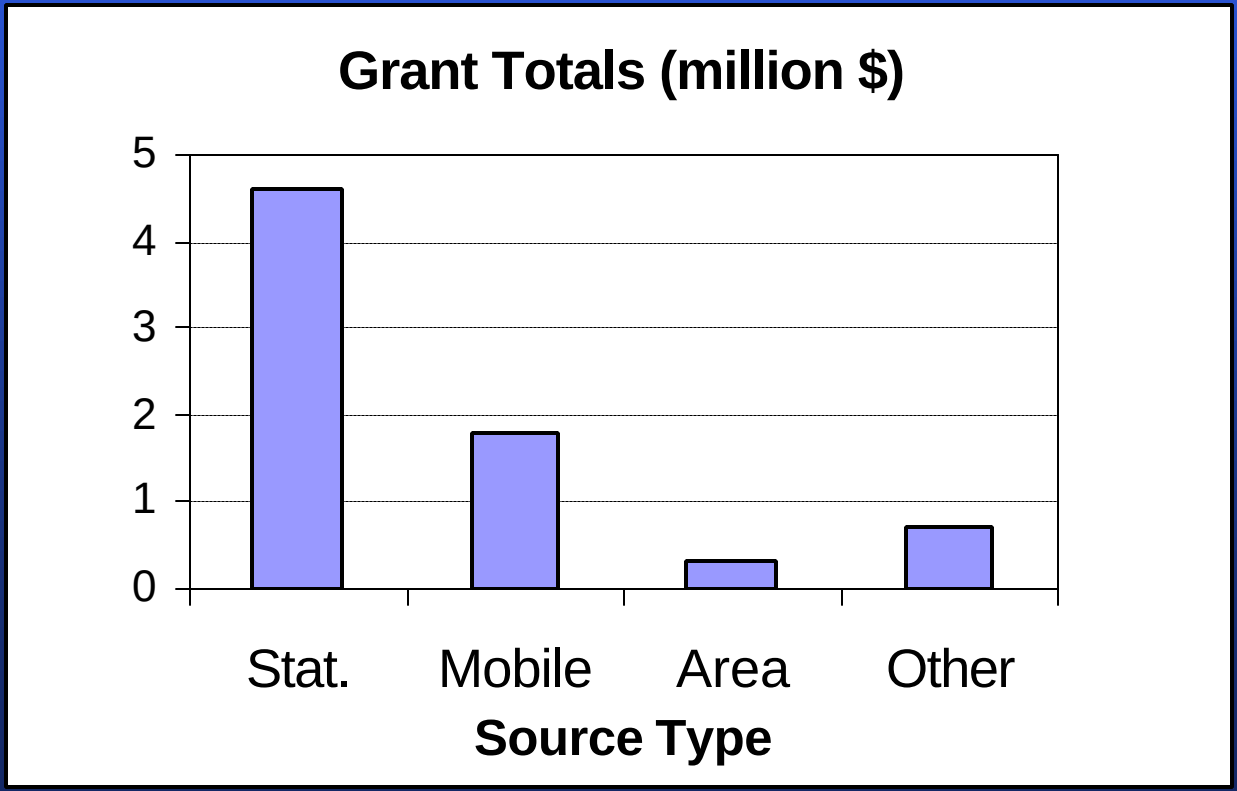
- 20 complete; 7 in progress
- All selected in competitive reviews

ICAT History



Grant Characteristics

- Avg. project budget -- $688,000
- Avg. ICAT grant -- $209,000



ICAT Benefits

Survey of Past Grantees

- 80% had commercialized
- 55% had revenue
- Projected: 300+ new jobs
- Projected: $2 - $7 annual new tax revenue per ICAT $

Recent Successful Project

S.T. Johnson Co: *Ultra-Low-NO_x Burner in a Firetube Boiler*

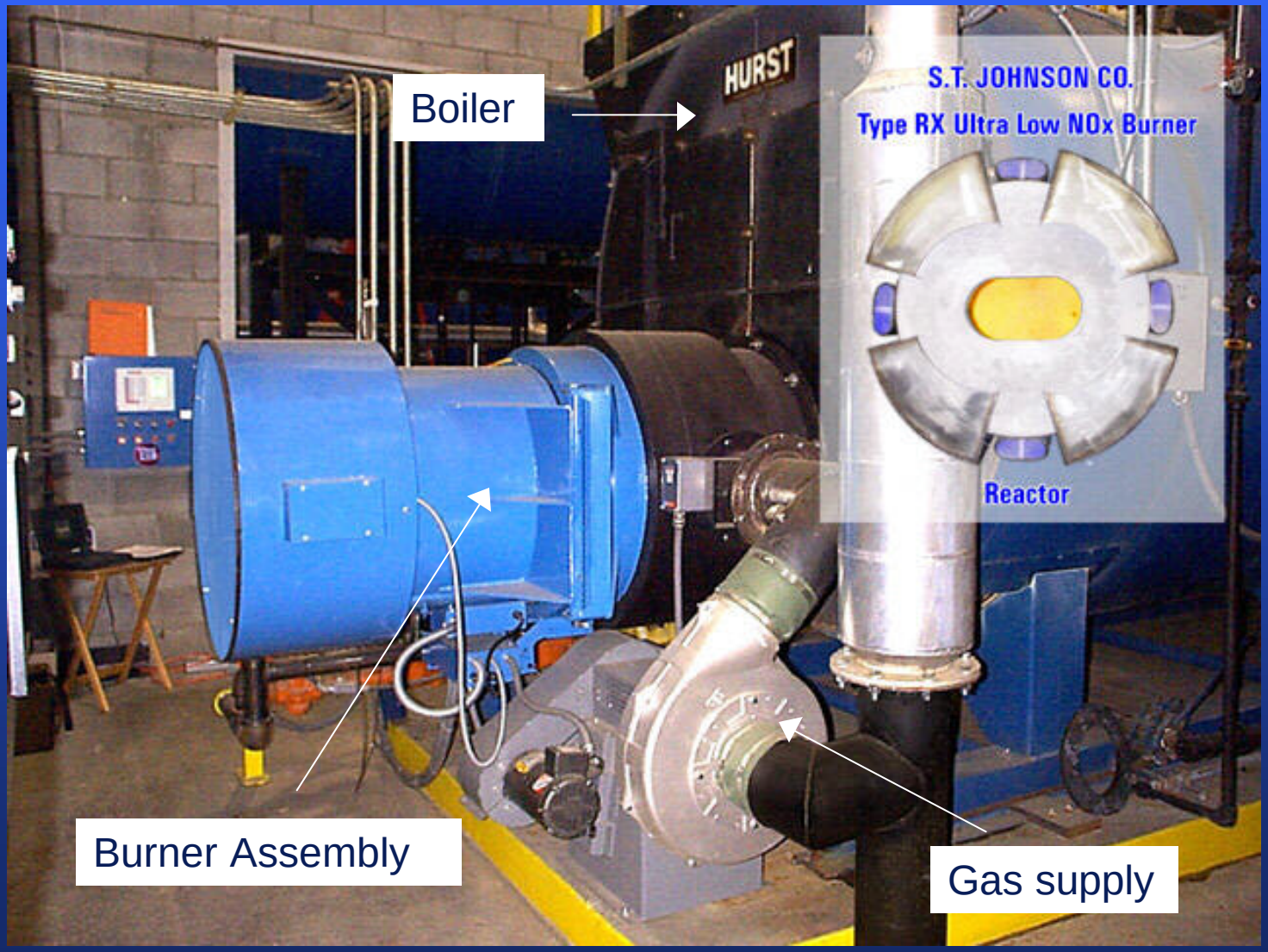
Demonstrated:

- 17 ppm w/o FGR* / 5 ppm w. low FGR
- Lower installed cost, fuel savings

Burner now offered for sale

* flue gas re-circulation

Ultra-Low-NOx Burner



Another Example

ADCO: *Zero-VOC Industrial Maintenance Metal Coatings*

- ICAT funded zero-VOC coating project
- R&D company became producer, licensor, vendor of coatings
- Attributed success to ICAT support

Selecting 2005 Grantees

- General solicitation
- Received 76 “pre-proposals”
- Invited 24 full proposals, received 14
- Reviews by ARB staff, SCAQMD, academic reviewers

Review Criteria

- Solvency of applicant and co-funders
- Technology -- new, workable, ready for demonstration
- Potential for emission reduction
- Project -- well described & worthwhile
- Commercial & economic potentials

New Grants Recommended

- 4 new grants
- ICAT support: $512,000
- Project values: $1.1 million

Aerosol Dynamics, Inc.
New Condensation Particle Counter

- Well-known operating principle
- Innovations:
  -- Safe, innocuous working fluid
  -- Improved cost, size, ease of use
- Useful research tool
- ICAT grant: $80,000 (field testing)

Gas Technology Institute
"Super Boiler" Demonstration

- Completely redesigned industrial boiler
- 5 ppm NO_x (better than BACT) w/o after-treatment or FGR
- Better fuel efficiency --> 3-yr pay-back
- Co-funded by SoCal Gas
- ICAT grant: $240,000 (fab., install., testing)

Cleaire Advanced Emission Controls
Electrically Regenerated DPF

- Retrofit technology for trucks that can’t use verified PM filters
- Established with stationary engines
- Supported by SMUD
- ICAT grant: $71,000 (emission testing)

ETEC
Power Supply for EVs at Airports

- Enables converting push-back tractors to battery power
  - -- Supports MOU with airlines
  - -- Eliminates NO_x and PM from diesel
- Shares existing power supply with the passenger bridge
- ICAT grant: $120,000 (installation, monitoring)

Summary

- ICAT supports useful technology
  -- advances in emission control
  -- economic benefits
- 4 projects recommended
  Total request -- $512,000

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