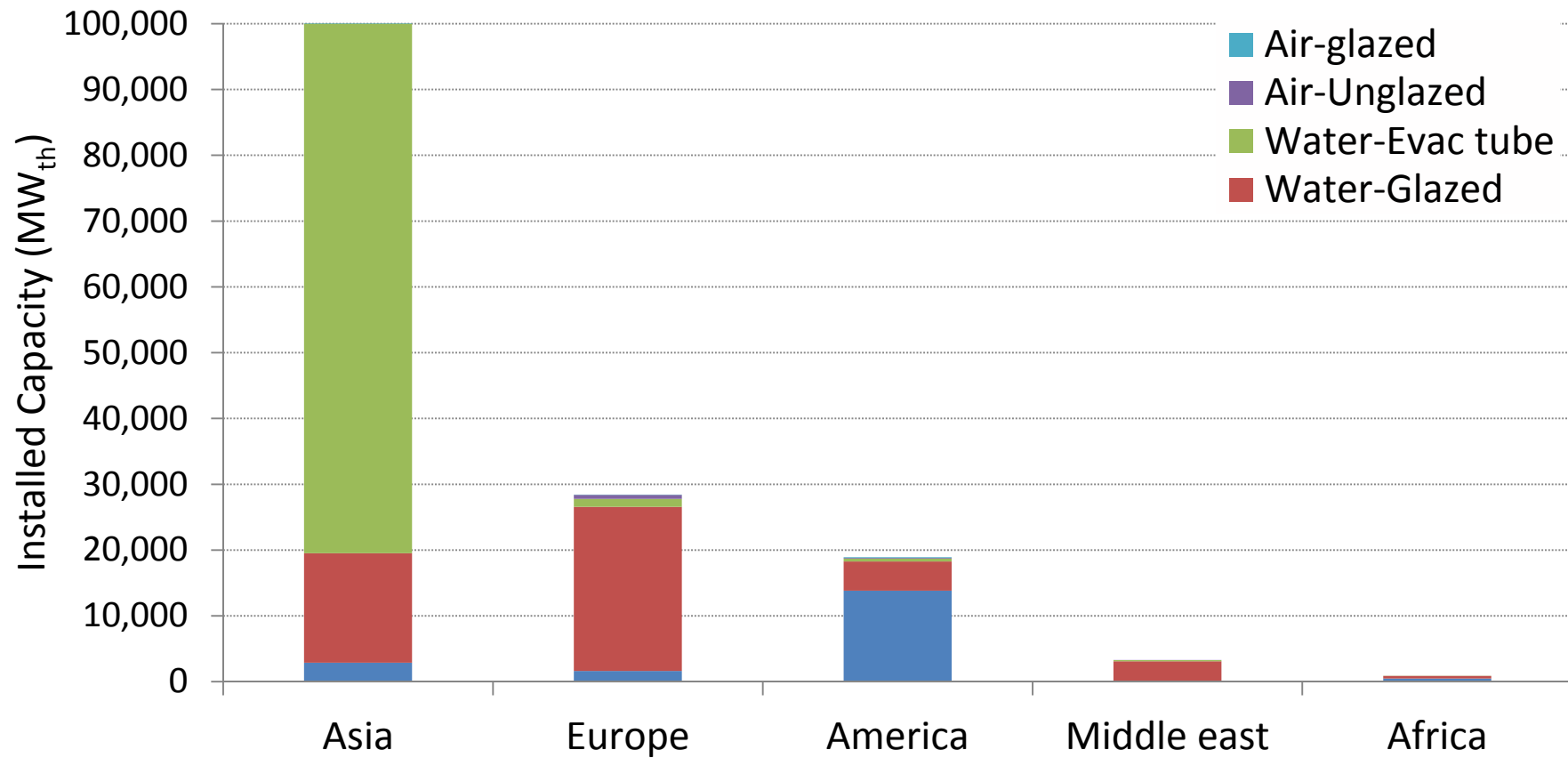


# Solar Thermal Promoting Adoption

Nov 9, 2010  
Jacques Roeth

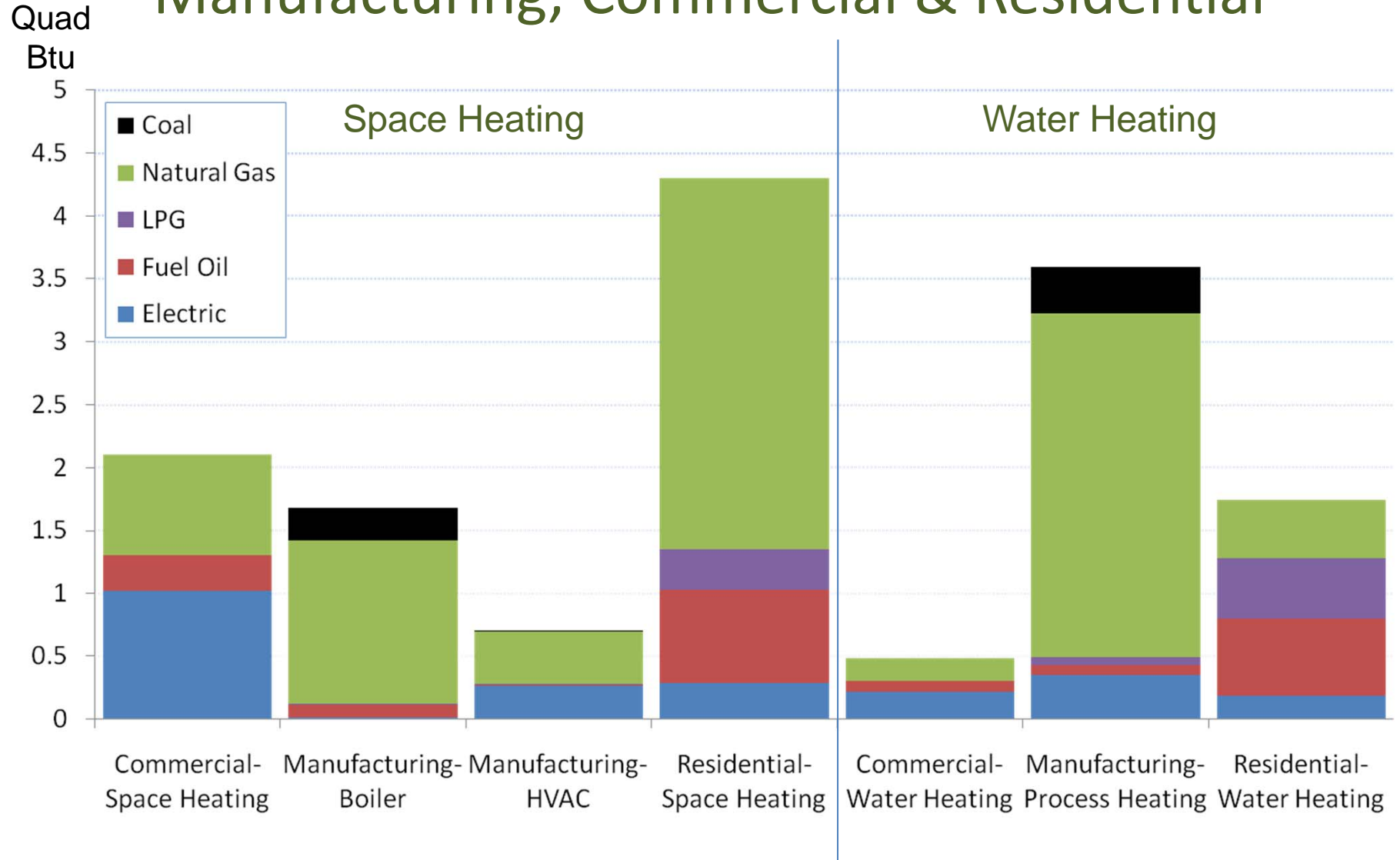
# World Solar Thermal Capacity (2008)



IEA-SHC 2010

# US End – Use by Fuel type

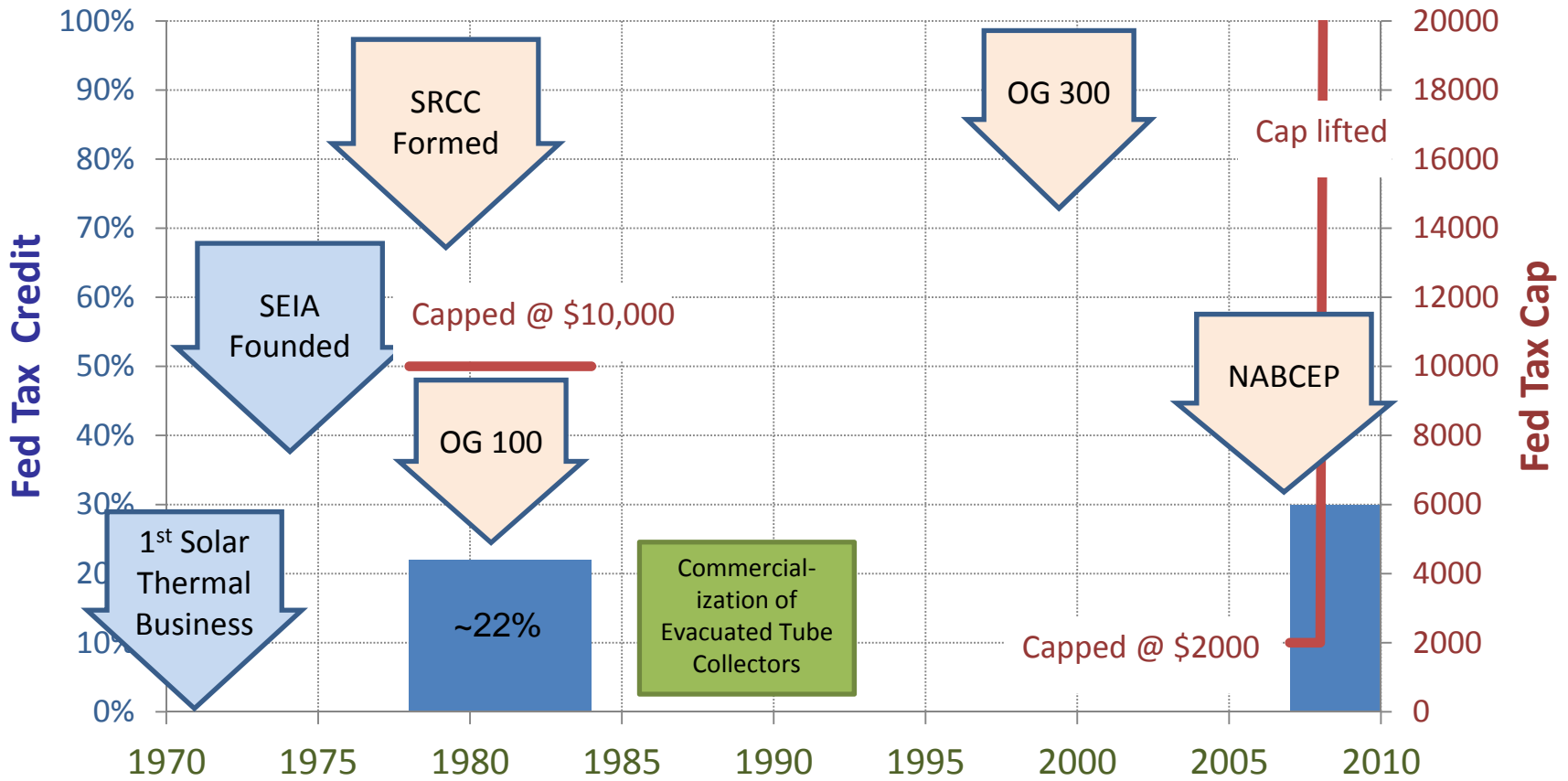
## Manufacturing, Commercial & Residential



Sources: EIA -2002 MECS, 2005 RECS, 2003 CBECS

Total: 15.25 Quad Btu/year

# US Solar Thermal Timeline



# Solar Thermal – What’s changed

- *How has marketplace **changed**?*
  - Solar Fed tax incentives Jan 1, 2009; Fed & NYS tax reduce installed cost by ~50%
  - Solar thermal systems DHW systems on a pallet, pricing dropping
- *What are significant marketplace **barriers** to overcome?*
  - Solar Thermal for heating is still not “top of mind” to homeowners as a reliable technology. Not yet cost competitive with natural gas in NE.
- *What has **happened** in past year?*
  - Solar Thermal training in NYS universities & colleges
  - NAPCEP Solar Thermal certification - up to 7 in NYS
  - Many new solar thermal systems , influx of Asian collectors
- ***Priorities** for new year.*
  - NYS Solar thermal incentives to displace electrical (RPS funding)

# Solar Thermal Roadmap – Understanding what is needed

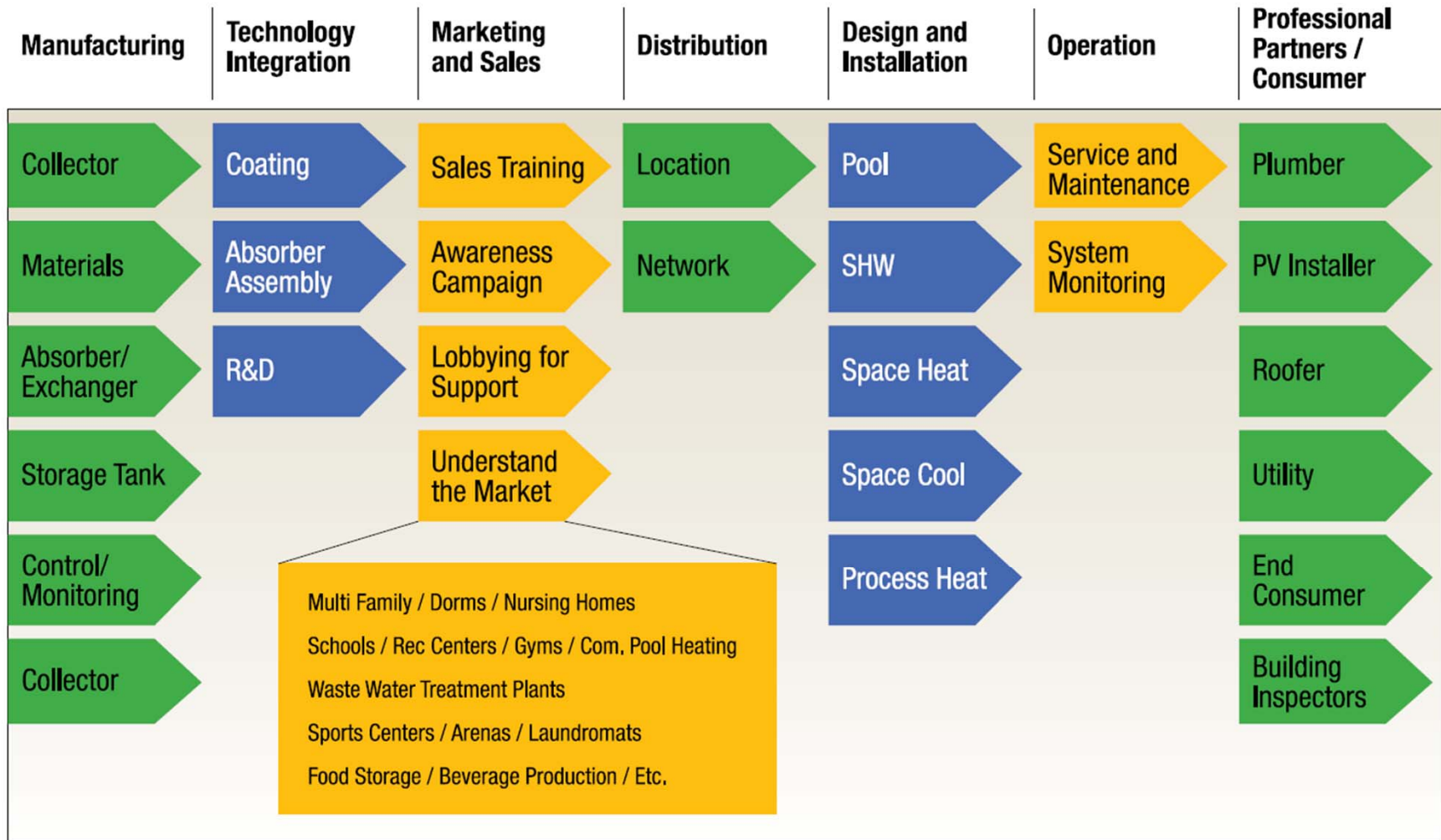
## Problem Statement

- The viability, reliability, and cost/ benefits of solar thermal are not widely known by purchasers.
- Sufficient and certified industry knowledge to support successful installations is lacking.
- Gaps in the value chain from materials to end-user are not clearly known

## Goals/Objectives

- Identify effective mechanisms to educate target constituencies of ST investment benefits that will create market demand from potential customers.
- Create a thriving solar thermal industry & establish ST manufacturing in NY State that can provide high quality & reliable installations.
- Identify marketplace barriers and the decision makers affecting them.

# Solar Thermal Value Chain



Sebastian Gores, Droege & Co.

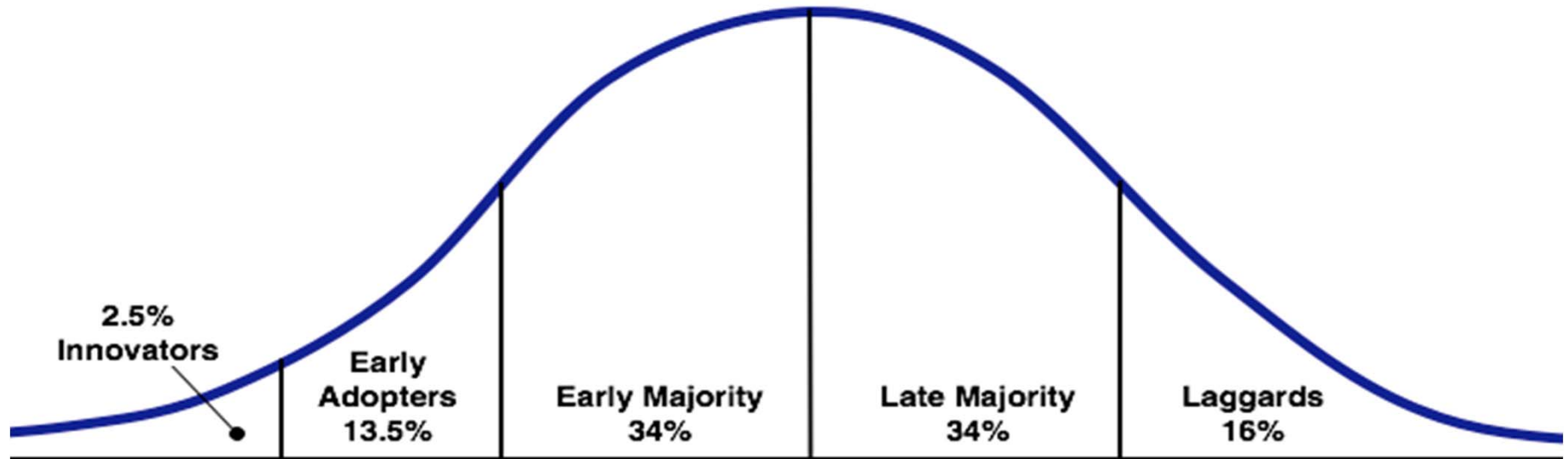
# Solar Thermal Roadmap

## Recommendations

- 1. Create a statewide Educational Campaign and Electronic Resource to inform consumers about Solar Thermal
- 2. Initiate a Solar Thermal financial incentive program to encourage installations.
- 3. Promote New York State as a location for Solar Thermal manufacturers.
- 4. Invest in Research and Development to create a scientific base to develop next generation Solar Thermal technologies.
- 5. Clarify permitting procedures and union jurisdiction to simplify Solar Thermal installations.



# Adoption of Innovation



Source: Everett Rogers, *Diffusion of Innovations* model

- Tend to be experimentalists
- "Techies" interested in technology itself

- Technically sophisticated
- Interested in technology for solving professional & academic problems

- Pragmatists
- First part of the mainstream

- Less comfortable with technology
- Skeptical second half of the mainstream

- May never adopt technology
- May be antagonistic & critical of its use by others

# 5 Steps to Accepting Solar Thermal

- **Knowledge**– customer hears about product
- **Persuasion**– customer seeks information to form opinion
- **Decision** – customer weighs advantages/disadvantages
- **Implementation** – customer determines usefulness
- **Confirmation**- customer evaluates results of the system

# Solar Thermal organizations

- NY Solar Energy Industries Associations [www.NYSEIA.org](http://www.NYSEIA.org)
- North American Board Certified Energy Practitioners [www.NABCEP.org](http://www.NABCEP.org)
- IRECUSA [www.irecusa.org](http://www.irecusa.org)
- Solar Rating and Certification Corp. [www.solar-rating.org](http://www.solar-rating.org)
- American Solar Energy Society [www.ases.org](http://www.ases.org)