

The background of the slide is a photograph of a large body of water, likely a lake or reservoir, with a forested mountain range in the distance under a clear blue sky. The water in the foreground shows some ripples and reflections.

# **Sustainable Local Water Supply Policy, Innovation, and Decision-Support Tools**

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**Stanford Woods Institute for the Environment**

# Imported Supplies





# Local Options

- **Technology-Derived Supplies**
  - Recycling
  - Desalination

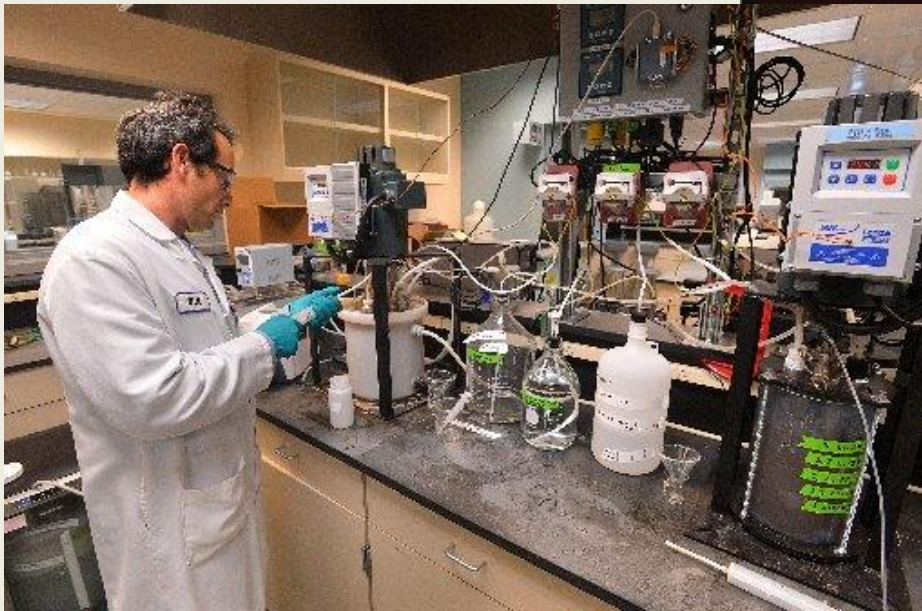
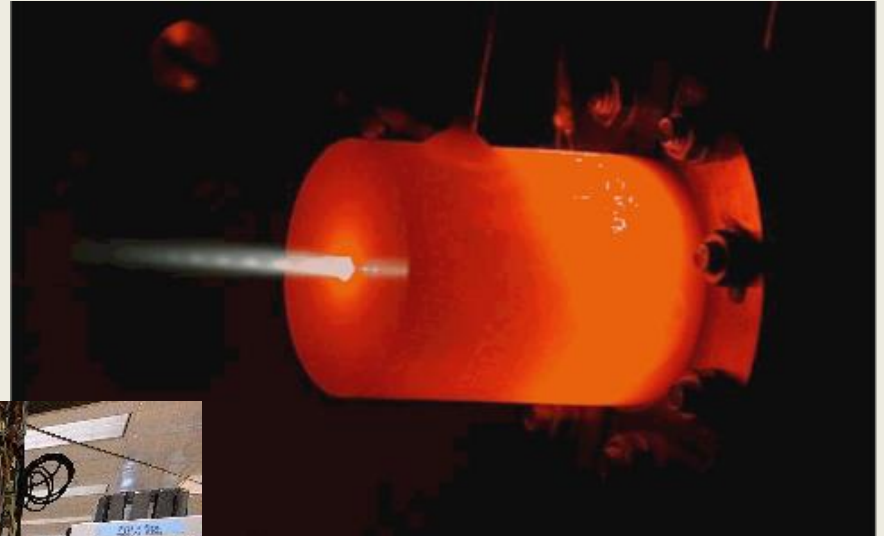
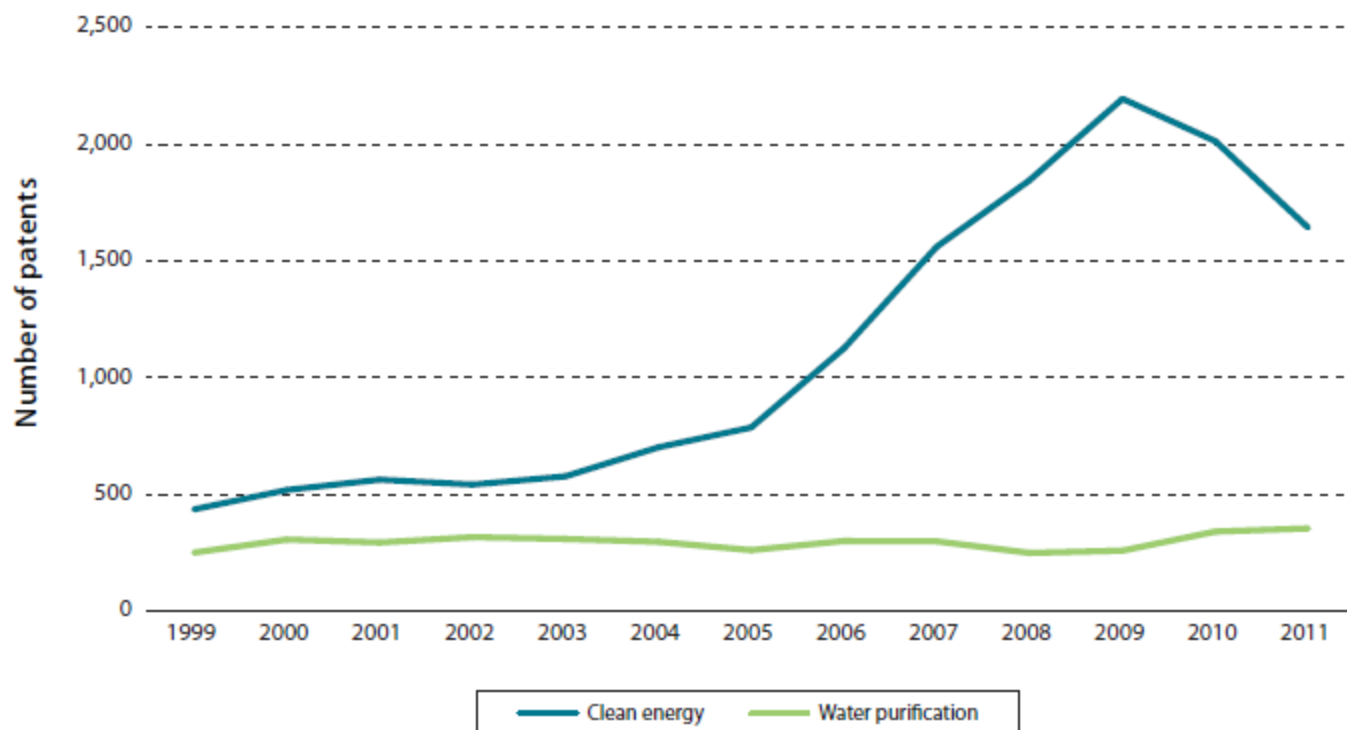


FIGURE 2.

## Comparison of U.S. Patents Filed under the Patent Cooperation Treaty for Clean Energy and Water Purification, 1999–2011



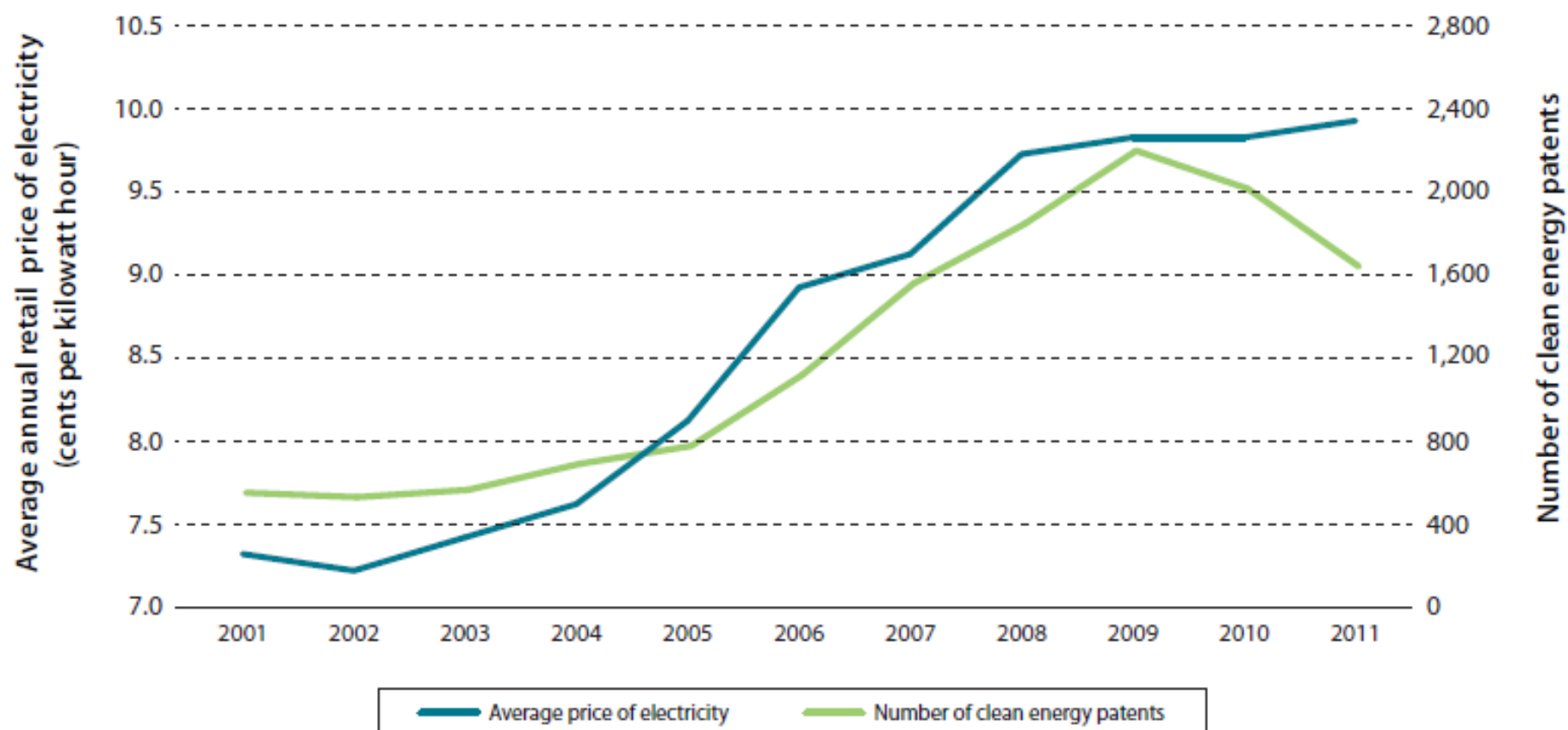
Source: Organisation for Economic Co-operation and Development (OECD) 2014.

Note: Clean energy = biomass generation + energy efficiency + energy storage + geothermal + hydro & marine power + solar + wind; and water purification is the primary contributor to patent filings in the water sector.

# Pricing

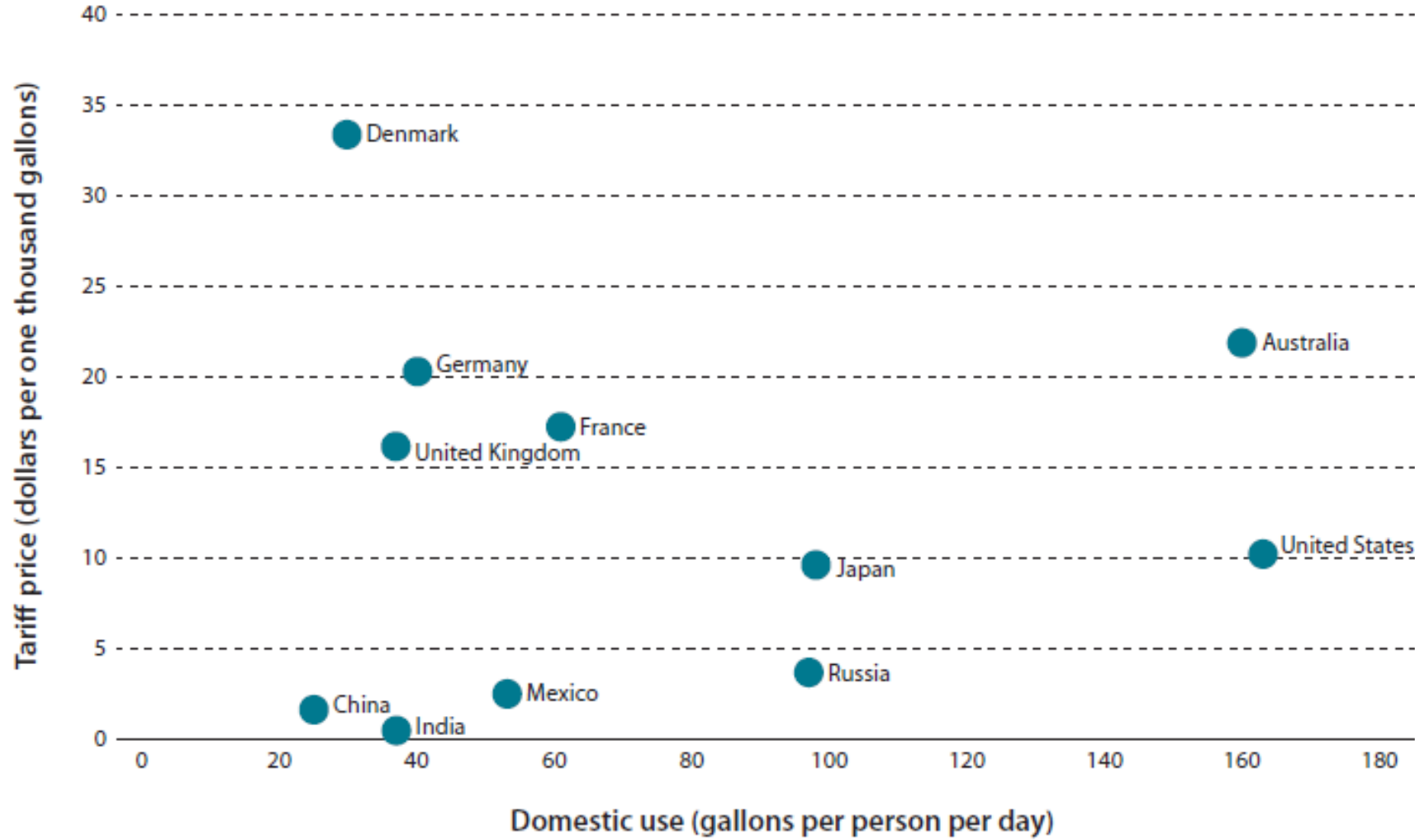
FIGURE 13.

## Number of Clean Energy Patents and Price of Electricity, 2001–11



Sources: Energy Information Administration 2014; Organisation for Economic Co-operation and Development 2014.

FIGURE 10.  
Tariff Price and Domestic Use per Capita, 2012



Source: Standard & Poor's 2012.  
Note: The tariff price includes water and wastewater tariffs and it is the average price among cities in that country.

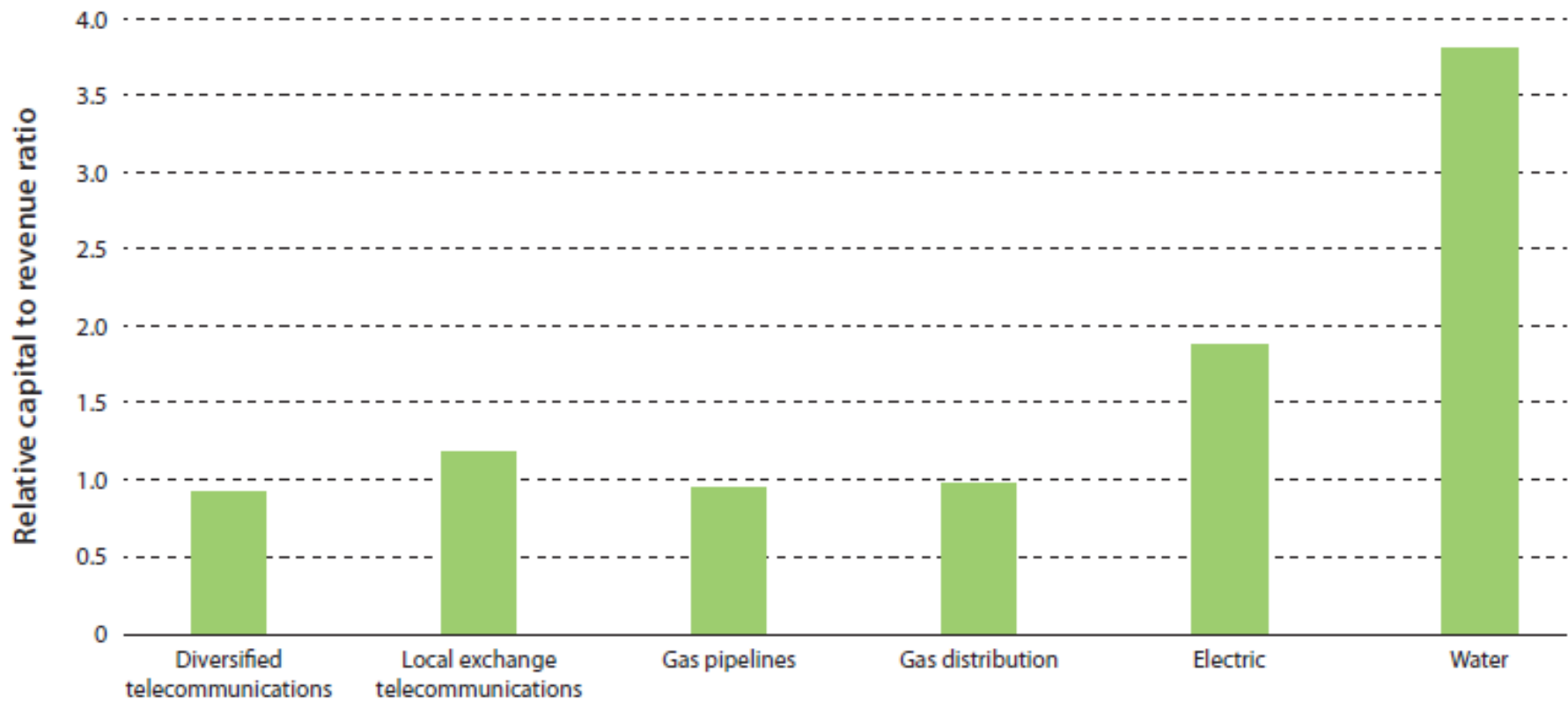
**Pricing**

**Financing**



FIGURE 11.

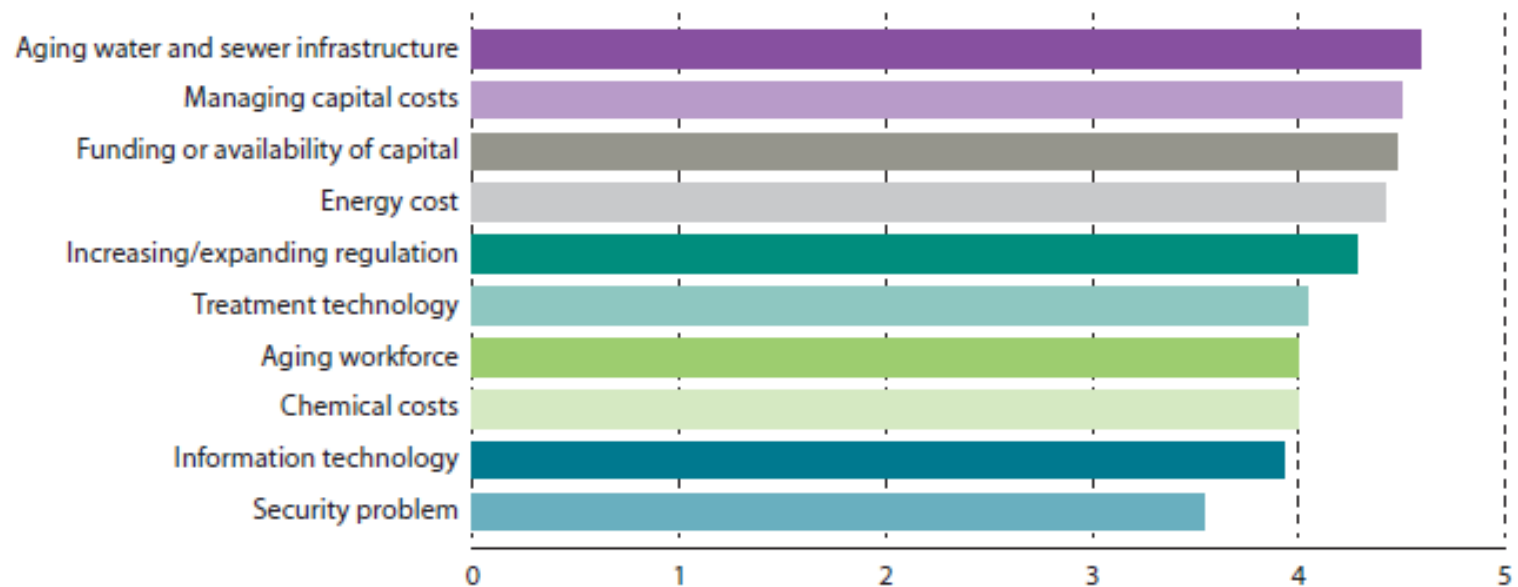
# Relative Capital Investment to Revenue Ratio for Several Utility Services



Source: Global Water Intelligence 2010.

FIGURE 12.

## Importance of Industry Issues, 2012



Source: Black and Veatch Corporation 2012.

Note: Survey participants were asked to rate the importance of each of the above referenced issues to the water industry based on a scale of 1 to 5, where 1 indicates "very unimportant" and 5 indicates "very important." The results above show the average response for each issue.

**Pricing**

**Financing**

**Regulations**

**Pricing**

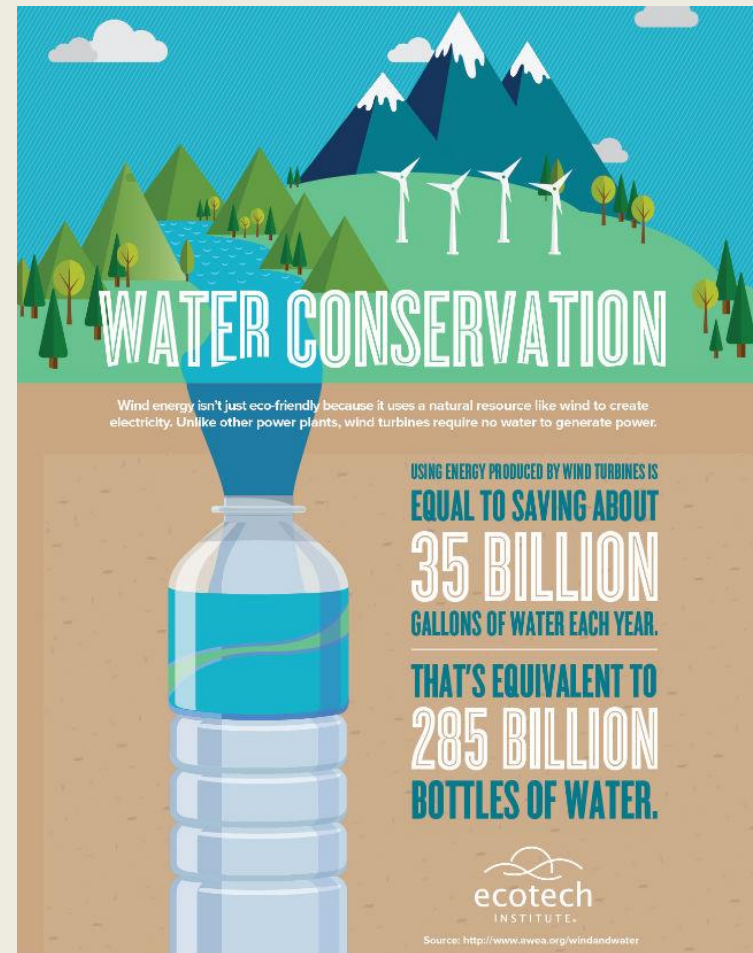
**Financing**

**Regulations**

**Office of Water  
Innovation**

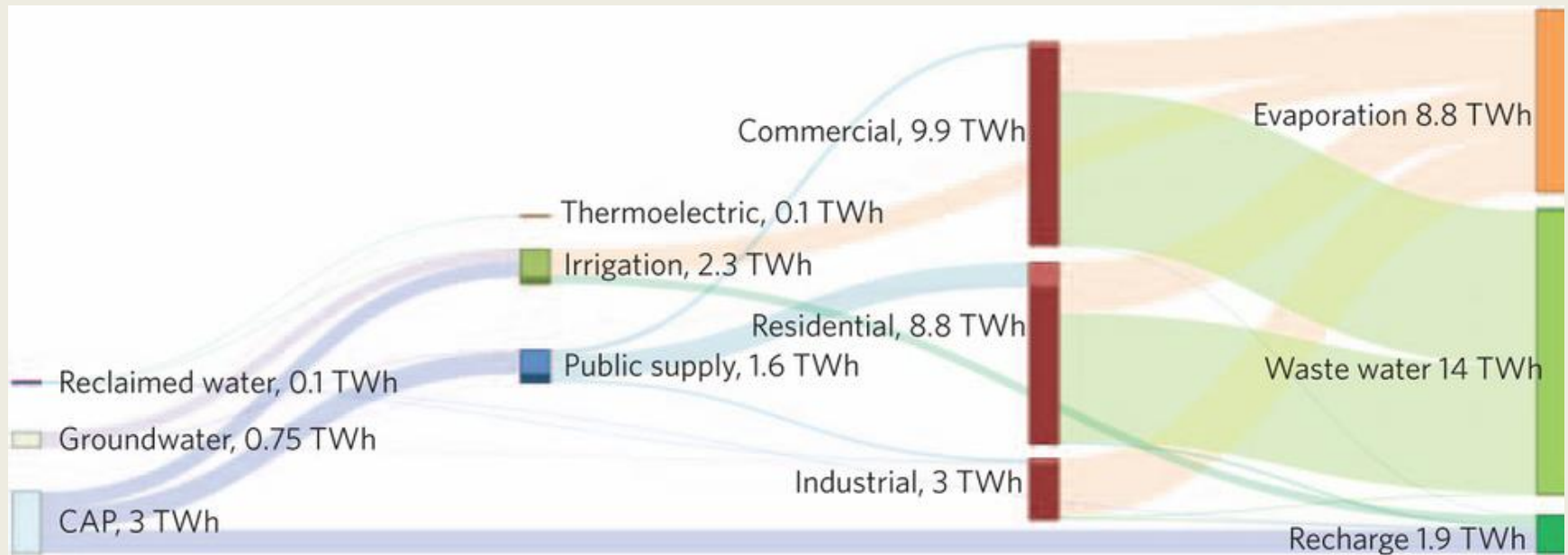
# Local Options

- **Technology-Derived Supplies**
  - Recycling
  - Desalination
- **Conservation & Waste Reduction**
  - Gross versus net conservation





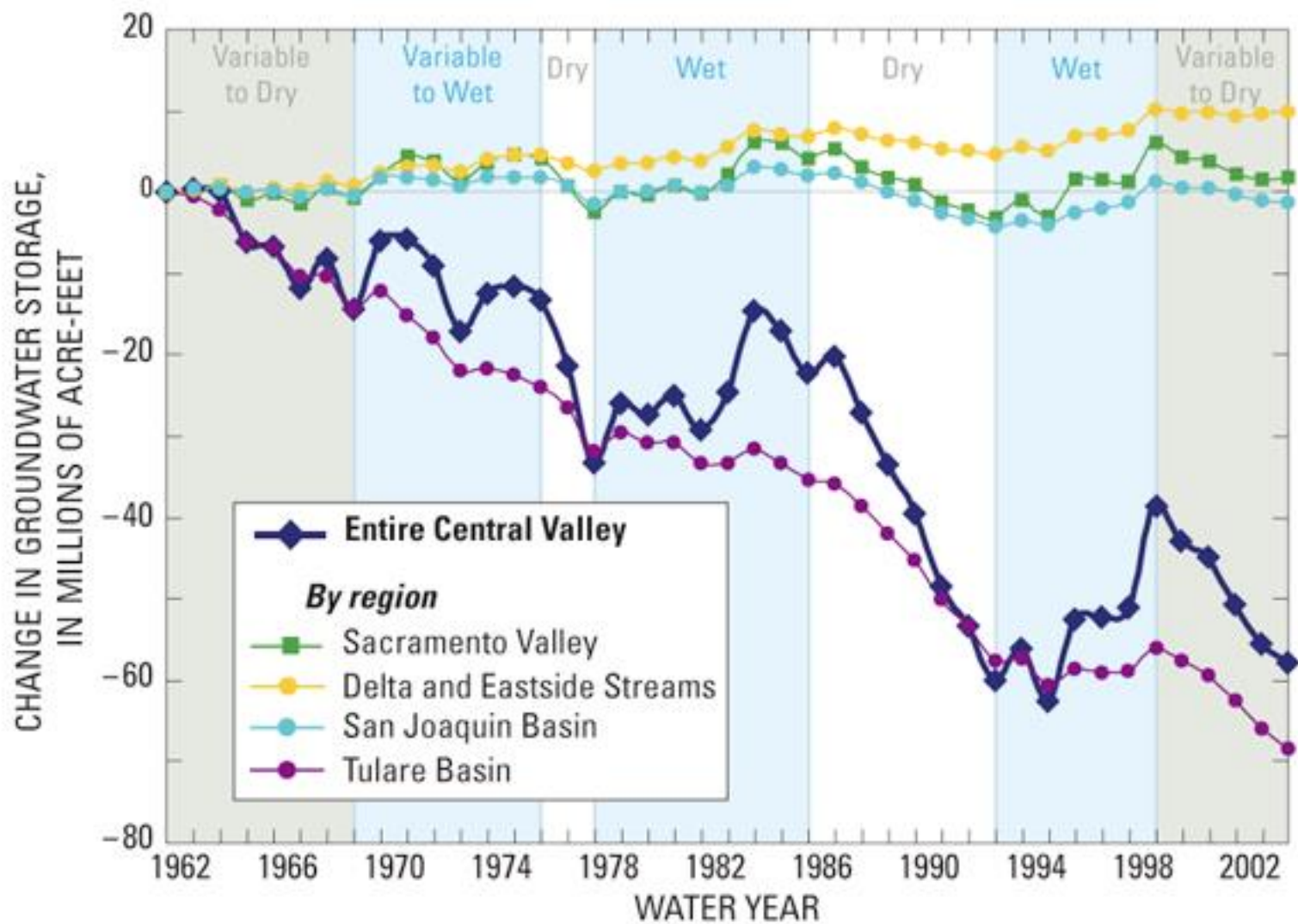
# Embedded Energy



**Howells & Rogner (2014)**

# Local Options

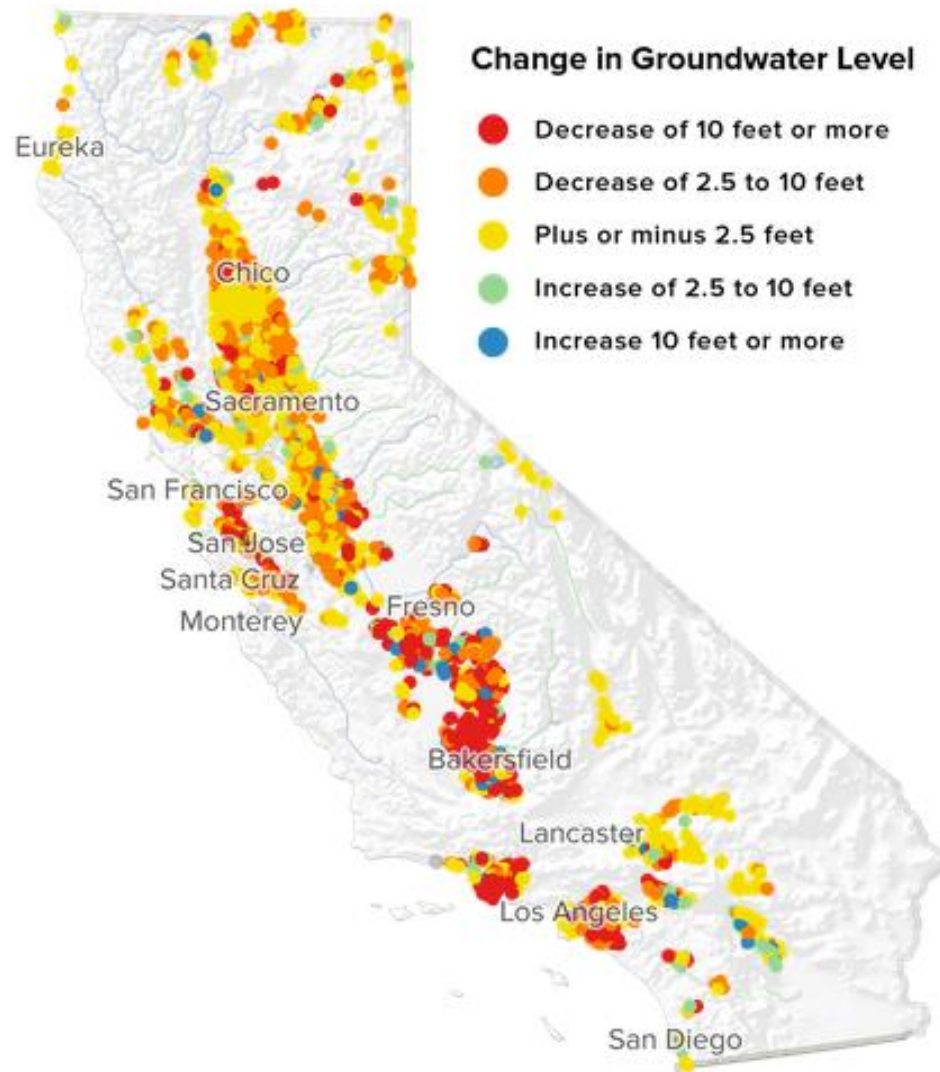
- **Technology-Derived Supplies**
  - Recycling
  - Desalination
- **Conservation & Waste Reduction**
  - Gross versus net conservation
- **Groundwater**
  - Including aquifer storage



## Change in Groundwater Levels During the...

PAST DECADE

PAST YEAR



Source: Department of Water Resources

# Groundwater Adjudications



- 24 adjudicated basins in California
- Courts determine water rights and extractions
- Often involve active watermarkets

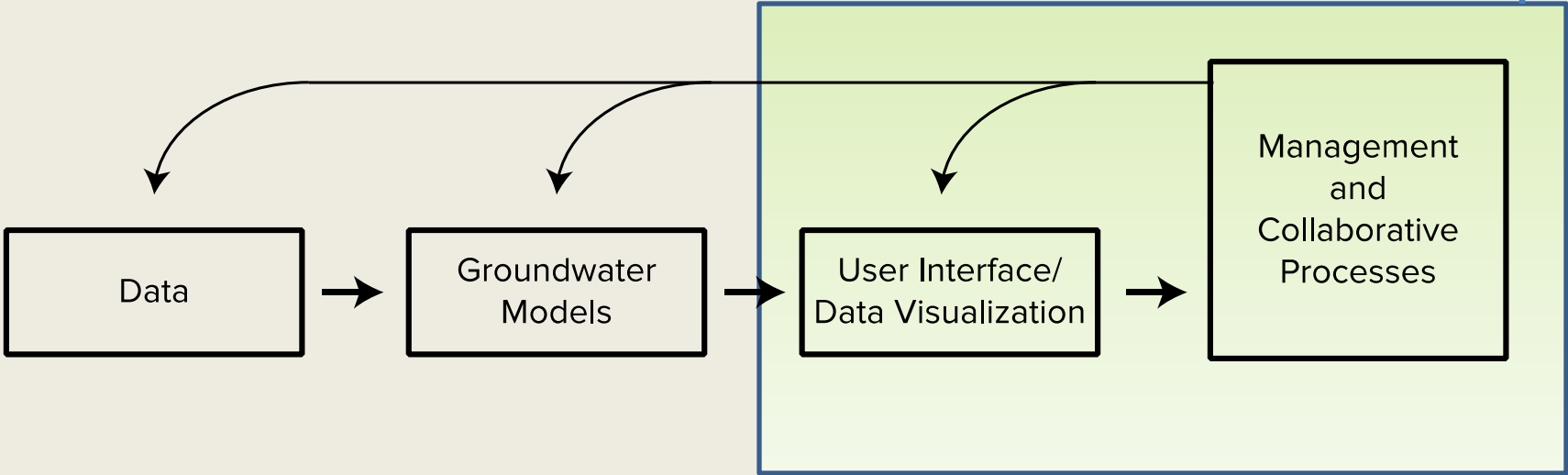


# Sustainable Groundwater Management Act of 214



## Adjudications

## Sustainable Groundwater Plans



# Regionalization

