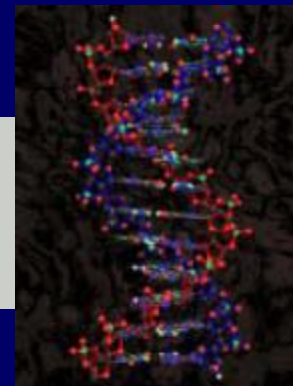




*U.S. Environmental Protection Agency  
Characterizing Chemicals in Commerce  
December 13, 2006  
Austin, Texas*

*Michael P. Wilson, Ph.D, MPH  
Center for Occupational and Environmental Health  
University of California, Berkeley  
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# UC Center for Occupational and Environmental Health

Est. 1978 (AB 3414)



Berkeley, Davis, San Francisco (northern California).

- Toxicology
- Epidemiology
- Industrial hygiene
- Environmental health policy
- Occupational and environmental medicine
- Occupational health nursing
- Ergonomics
- Labor Occupational Health Program (LOHP)
- Continuing professional education

UC Report: *Green Chemistry in California: A Framework for Leadership in Chemical Policy and Innovation.*

- Assesses problems and opportunities in chemicals policy
- Proposes broad policy goals

Commissioned January 2004 by:

- Byron Sher (Chair, SEQC)
- John Laird (Chair, ACESTM)

Released to Legislature March 14, 2006 to:

- Joseph Simitian (Chair, SEQC)
- Ira Ruskin (Chair, ACESTM)

Download:

[http://coeh.berkeley.edu/news/06\\_wilson\\_policy.htm](http://coeh.berkeley.edu/news/06_wilson_policy.htm)

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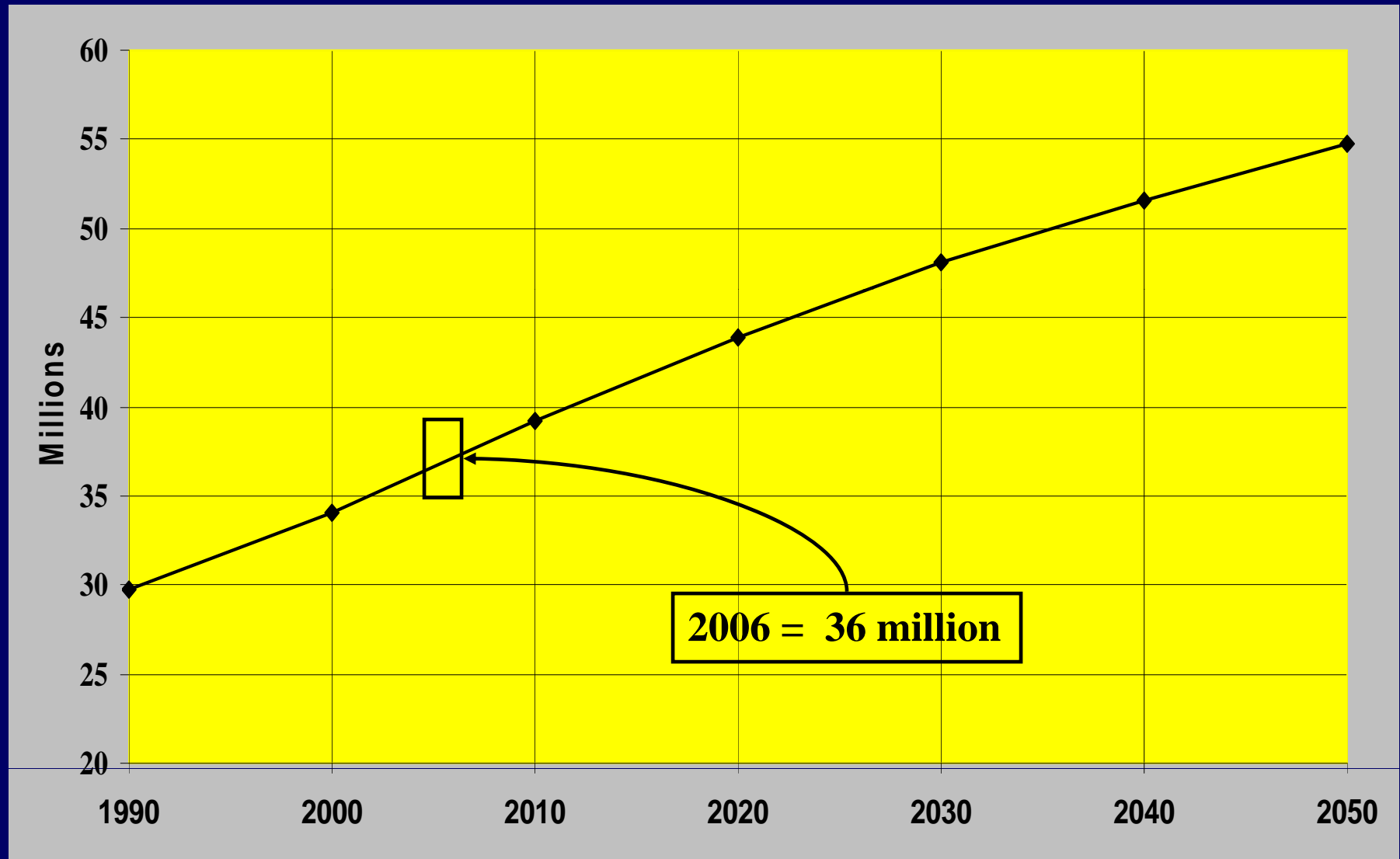
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Haas School of Business, UC Berkeley

David J. Vogel, PhD  
Haas School of Business, UC Berkeley

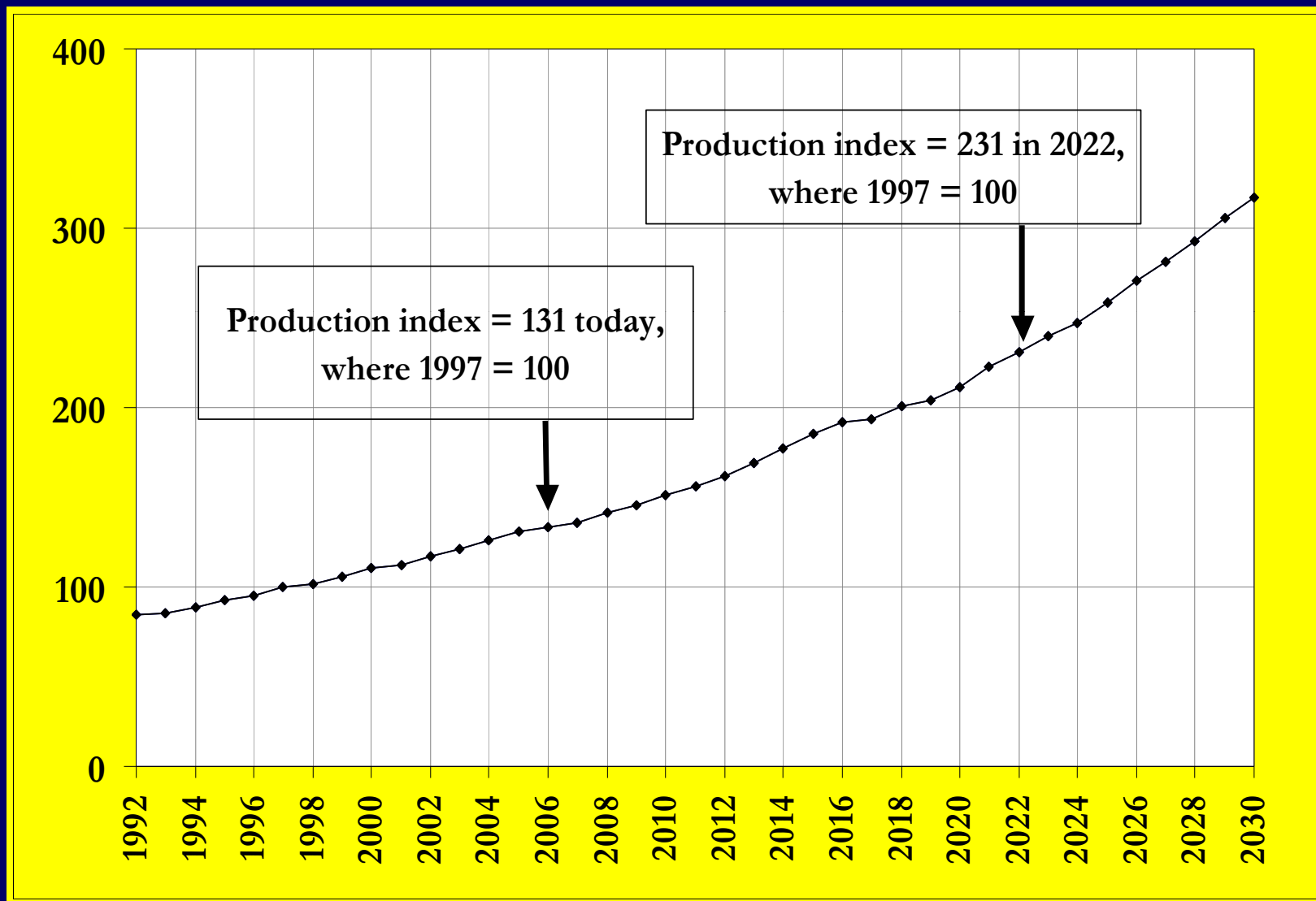
## Report's findings similar to those of:

- National Academy of Sciences 1984
- U.S. General Accounting Office 1994
- Congressional Office of Technology Assessment 1995
- Environmental Defense 1997
- U.S. EPA 1998
- former EPA officials 2002
- RAND Science and Technology Institute 2003
- U.S. Government Accountability Office 2005
- National Academy of Sciences 2005

# California's expected population growth, 1990-2050



Global chemical production is doubling every 25-years.



Key finding: TSCA goals:  
(1) Assess risks of 62,000 existing chemicals  
(2) Control those of greatest concern.

Procedural & legal burdens,  
data gaps (GAO, 2005)

1. Provide REACH data to EPA
2. Formalize consent agreements
3. Address CBI issue (GAO, 2005)

Voluntary approaches

HPV chems

Non-HPV chems

Meeting TSCA goals?

No action

No

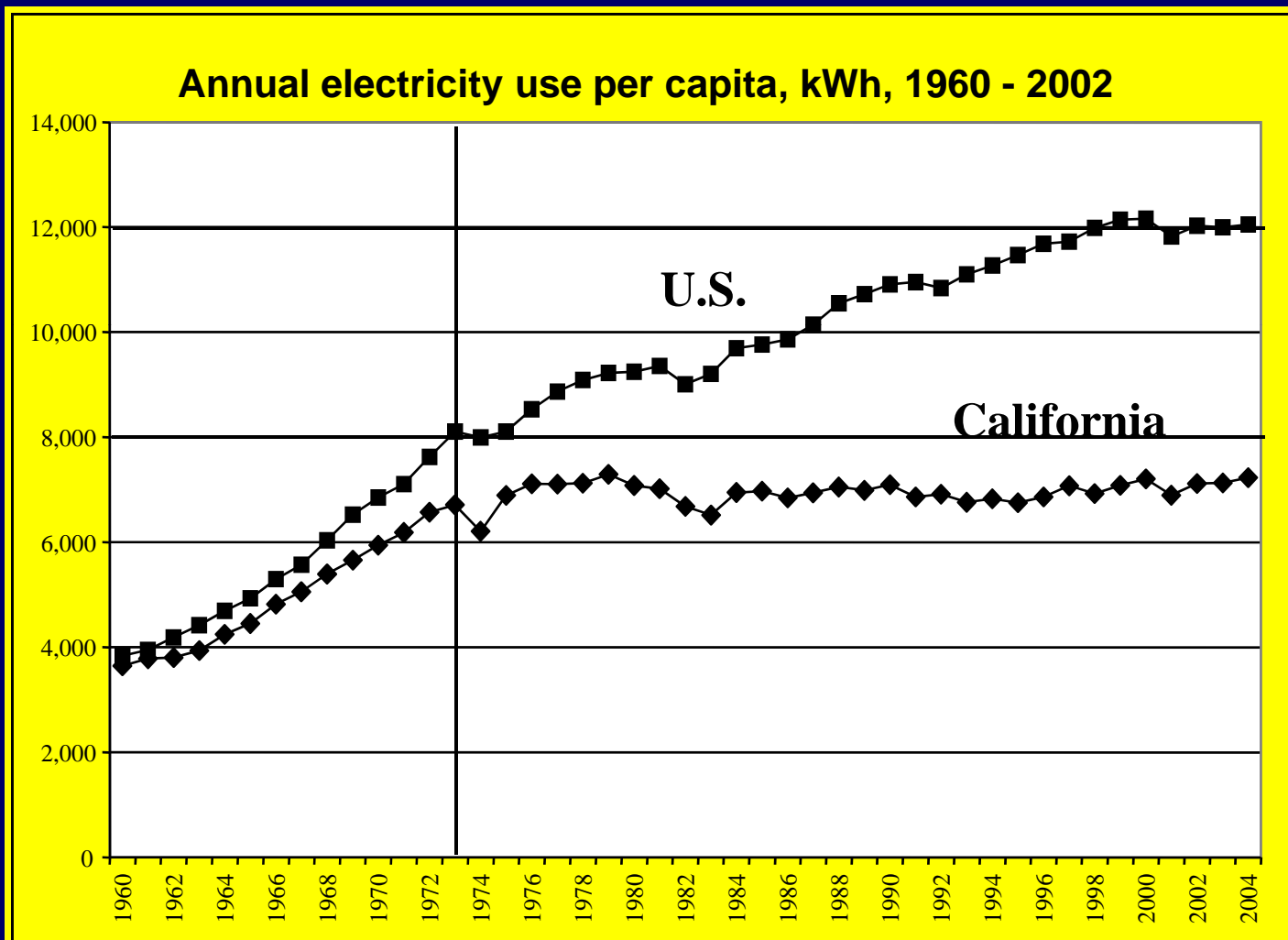
Yes

1. EPA needs more than HPV data to meet burdens
2. Is post-market, not preventive = ↑ commercial value
3. Ongoing barriers to test rules & to controlling hazards

1. Beginning to fill data gaps for high volume substances.



UC report: A systems approach is needed to produce enduring changes in the chemical sector. Example: per capita electricity use.



Courtesy John Wilson, CA Energy Commission 9



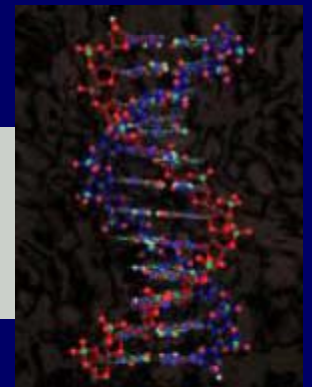
The design of chemical products and processes to reduce and/or eliminate substances hazardous to human health and the environment.

12 principles proposed by Anastas & Warner.

Anastas, P.T. and J. Warner. 1999. Green Chemistry Theory and Practice



Thank you!



# UC chemicals policy report

## Barriers to green chemistry

TSCA, other statutes

Data Gap

Safety Gap

Tech. Gap

Markets

Government

Buyers: weak haz data  
Sellers: weak case for GC

Barriers to assess haz  
Barriers to control haz

- "Hazard" undervalued against price, function
- Hazardous chemicals competitive in market
- Green chemistry innovation impeded

## Drivers of green chemistry

E.U. policy initiatives

Downstream users

Industry leaders

NGO activity

Green chem. entrepreneurs

Public opinion

California Legislature

Government procurement

Climate change

National Academy<sub>2</sub>