Water, Energy, and Climate
Critical Links

State Water Resources Control Board
Hearing
Sacramento, California

PACIFIC
INSTITUTE

Research for People and the Planet

Dr. Peter H. Gleick

www.pacinst.org

August 23, 2007

Conclusions

- Water use and energy use are closely linked.
- Energy production uses and pollutes water.
- Water use requires significant energy.
- Energy and water issues are rarely considered together, at either the personal level or the policy level.

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Summary

- Proper energy and water planning require integrating the two.
- Several water policy actions can save substantial amounts of energy (and greenhouse gas emissions).
- This kind of work requires actions at the federal, state, and local levels.

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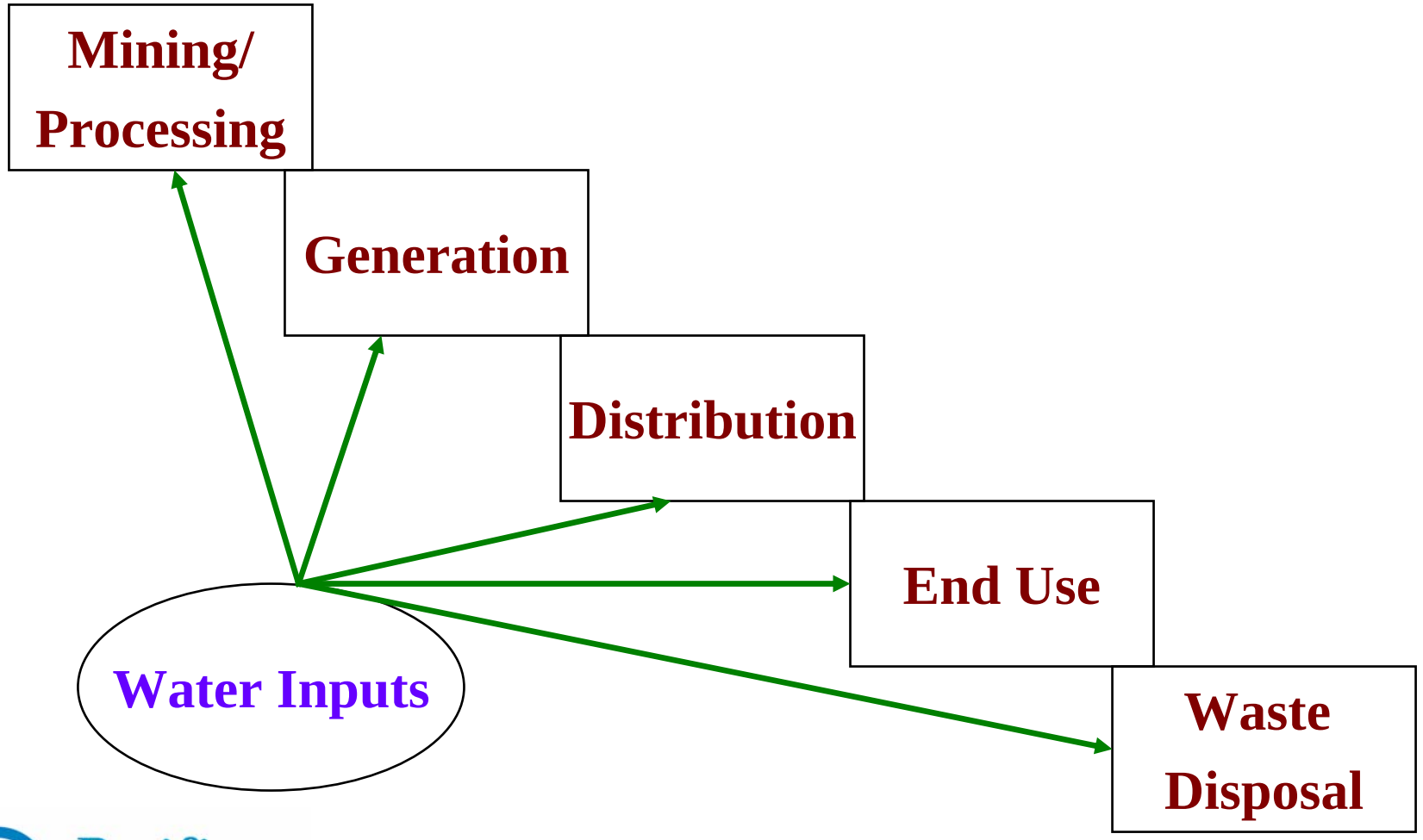
The Energy Fuel Cycle Requires Water



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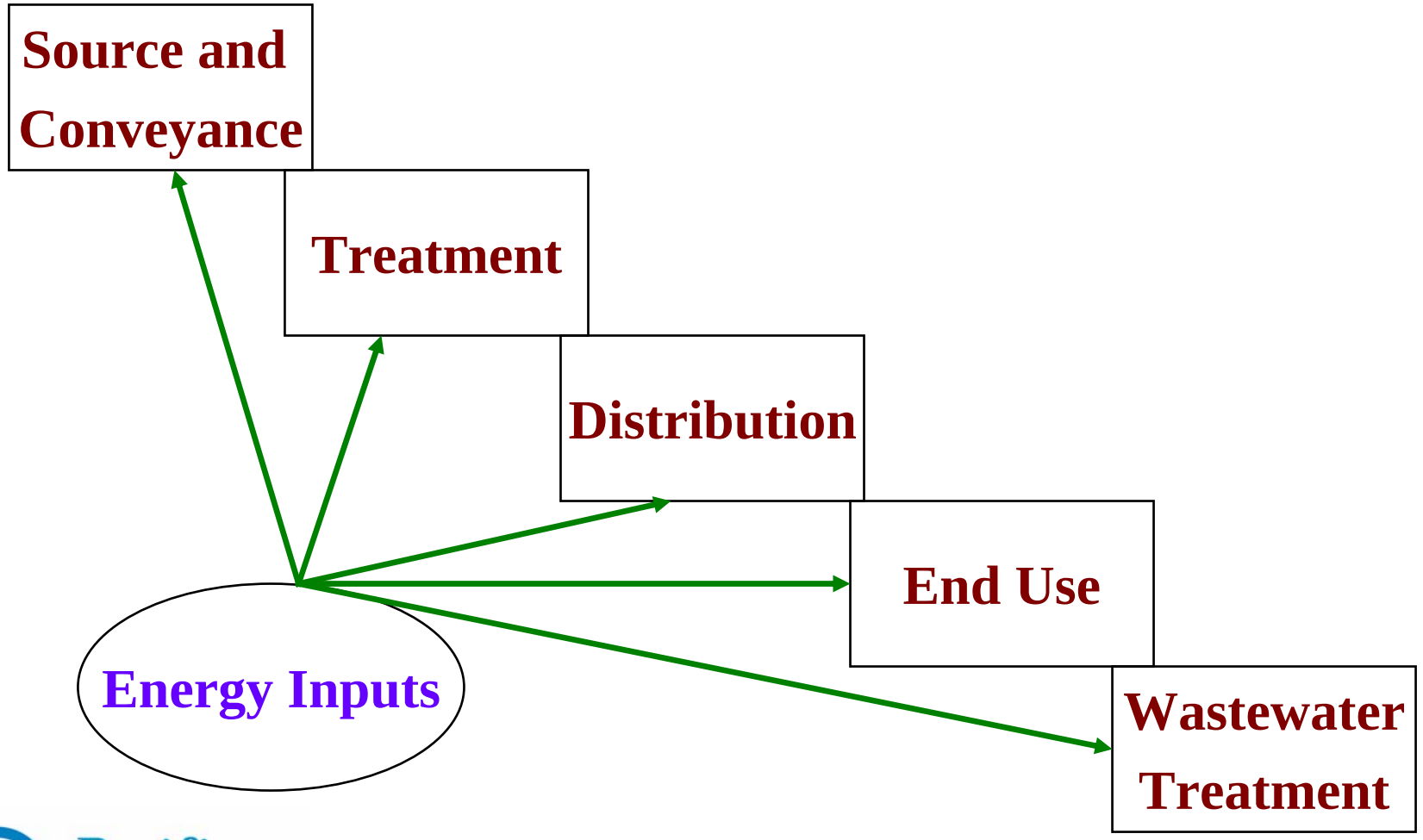
Water Supply – Use – Disposal
All Require Energy



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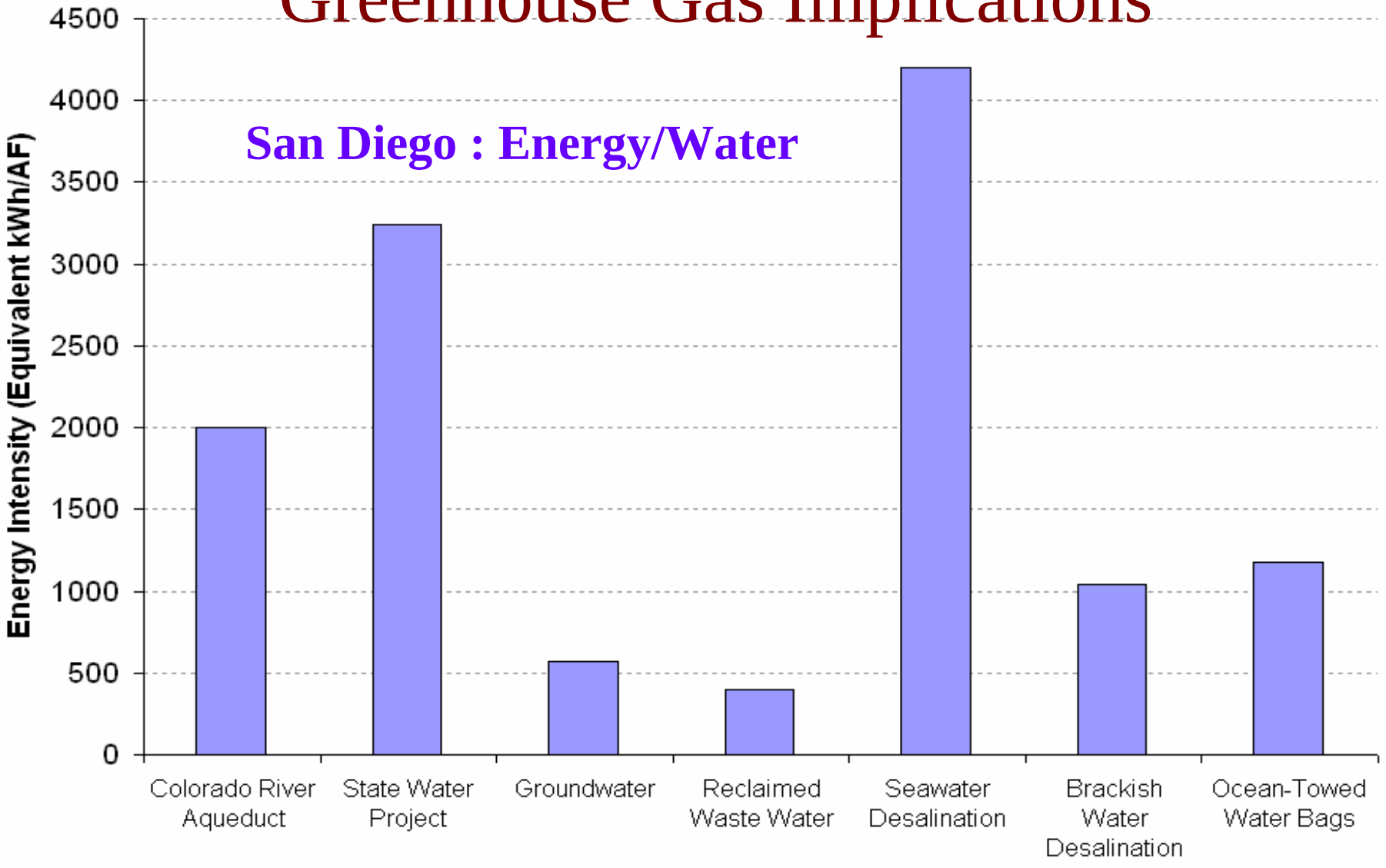
Water Policy Choices Have Energy and Greenhouse Gas Implications



Source: Pacific Institute, 2004

The Potential for Water Efficiency Improvements is Large

The Pacific Institute's efficiency analyses, and the new California Water Plan both identify millions of acre-feet of untapped, cost-effective conservation and efficiency potential.

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Saving This Water is the Cheapest Way to Save Energy

According to the CA Energy Commission:

- If the water savings identified by the Pacific Institute's urban efficiency study could be achieved, the energy savings would capture 95 percent of the savings expected from the 2006-2008 PUC energy efficiency programs, at 58 percent of the cost.

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Estimated Energy Use of Clothes Washers

Year	Energy Use kWhr per Load	Energy Use per Household (kWhr/year)
1980 to 1990	3.9	1,540
1990 to 1998	3.0	1,185
New Washers	1.6	632

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Accounting for Energy Benefits of Water Conservation

Efficiency Device Installed	Cost of Conserved Water (water only) $/AF	Cost of Conserved Water (water and energy) $/AF
2.5 gpm Showerhead	320	-740
Efficient Washing Machines	870	-180
Efficient Dishwasher	860	-100

Source: Pacific Institute, 2004

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Overall Recommendations

- Decision makers should better integrate energy issues into water policy.
- Water conservation and efficiency should be given a higher priority by both water and energy planners.
- The greenhouse gas implications of both water and energy policy may be significant, with opportunities for fast, cost-effective reductions.

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State and Local Recommendations

- Implement water efficiency programs at all levels designed to capture multiple benefits.
- Phase out irrigation, energy, and crop subsidies that promote wasteful use of water and energy.
- Pursue smart labeling of water efficient appliances that also save energy. Pursue new appliance standards.

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Pacific Institute
654 13th Street
Oakland, California 94612