

completing the energy sustainability puzzle



ENERGY *and* **WATER**

**Sustainable Water Resources Roundtable
Water Issues in the West - Produced and Brackish Water Panel**

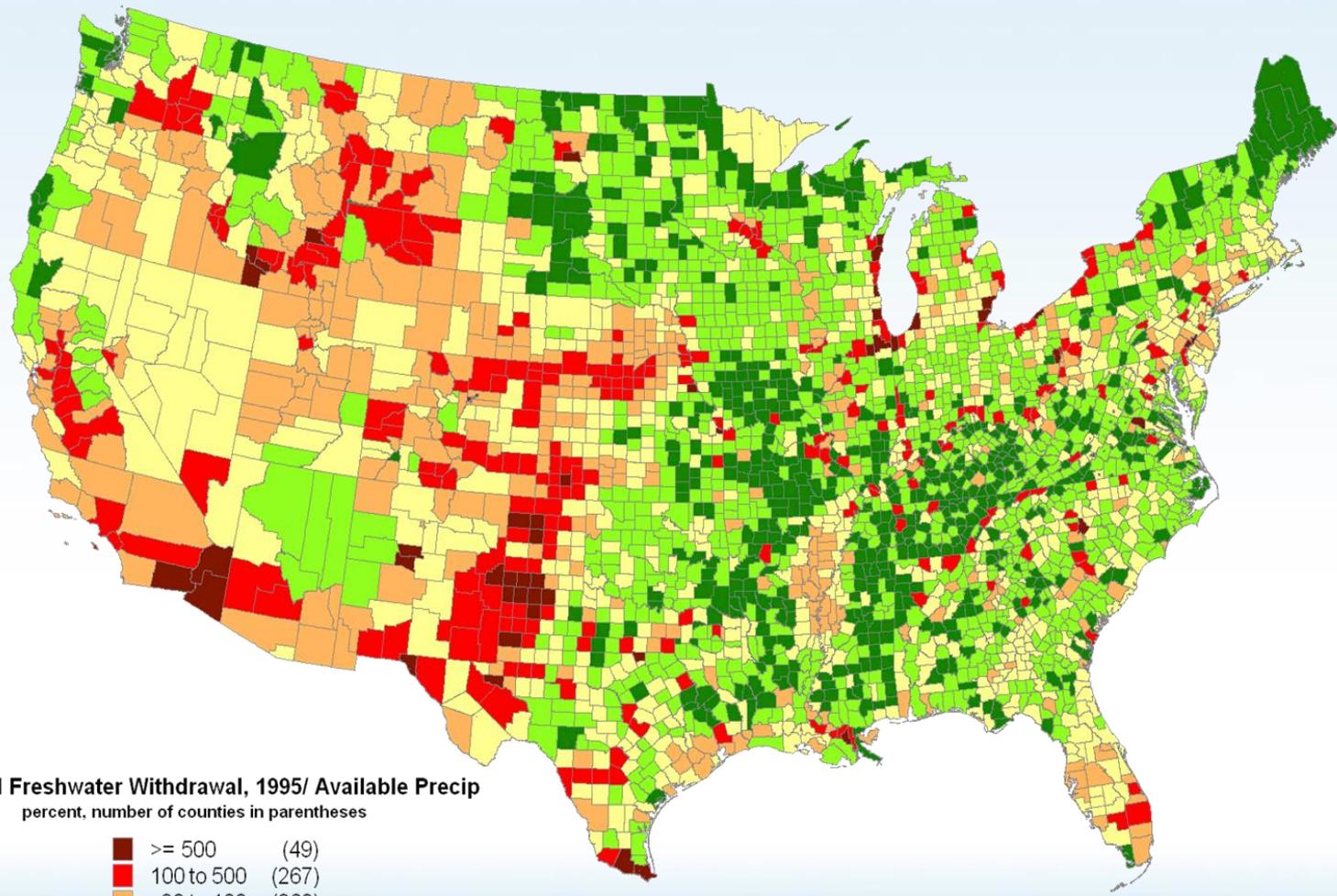
National Renewable Energy Laboratory – July 19, 2016

US Energy Sustainability

A critical piece is missing



Water sustainability is a nationwide challenge



Total Freshwater Withdrawal, 1995/ Available Precip
percent, number of counties in parentheses

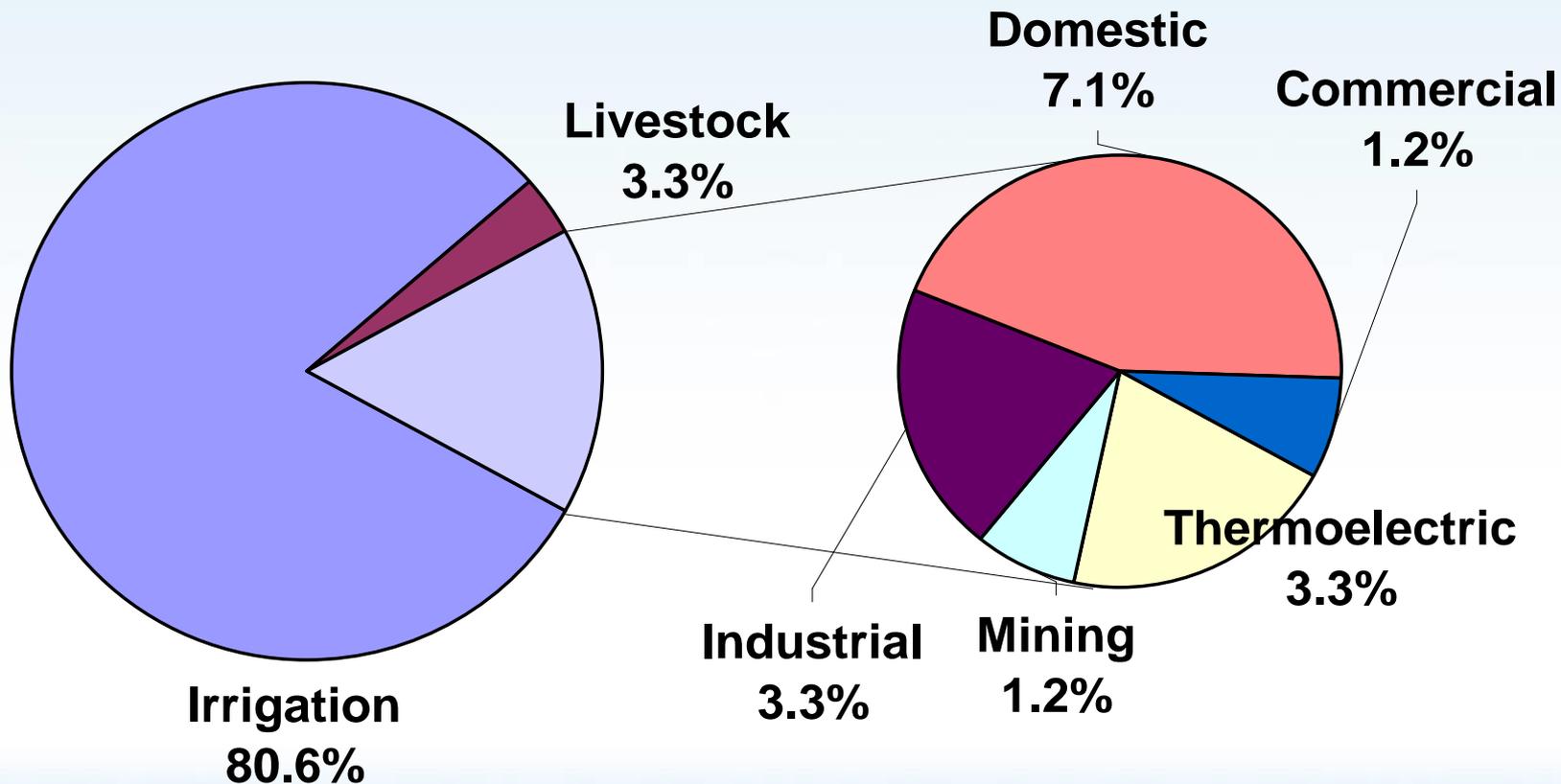
Dark Brown	>= 500	(49)
Red	100 to 500	(267)
Orange	30 to 100	(363)
Yellow	5 to 30	(740)
Light Green	1 to 5	(1078)
Dark Green	0 to 1	(614)



Water Consumption by Sector

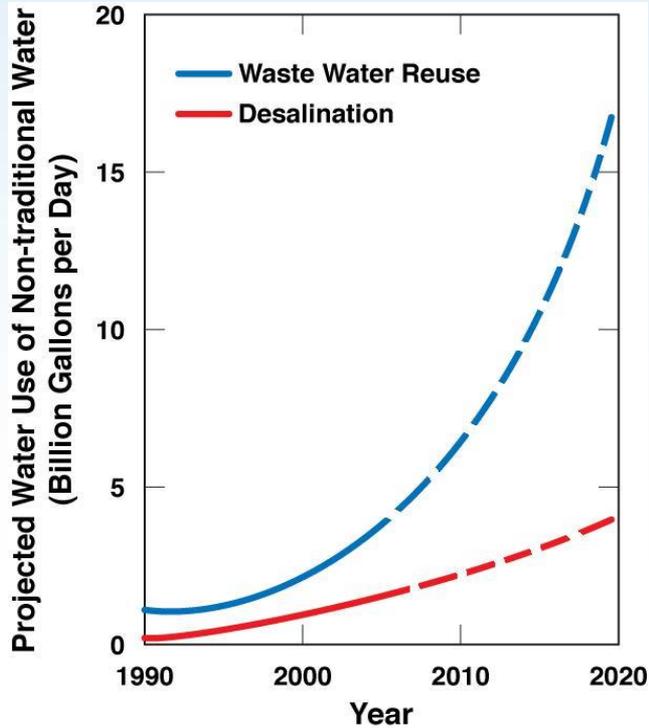


U.S. Freshwater Consumption, 100 Bgal/day



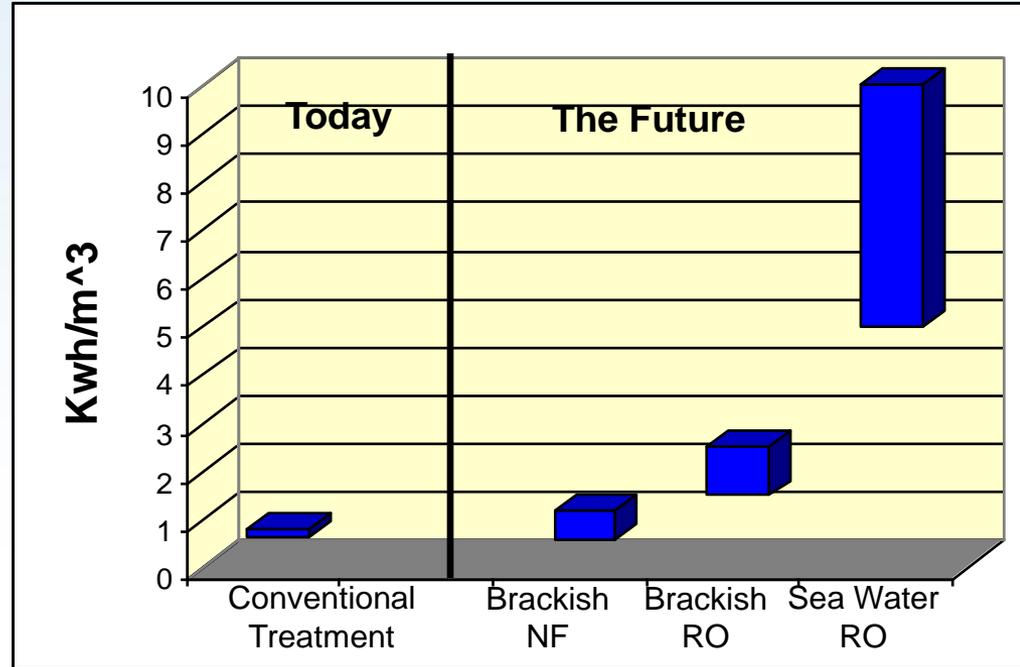
[USGS, 1998]

Growing Use of Non-traditional Water Resources



(From EPA 2004, Water Reuse 2007, Mickley 2003)

Power Requirements For Treating



(Einfeld 2007)

Desal is growing at 10% per year, waste water reuse at 15% per year

Panel on Produced and Brackish Water



Moderator - Mike Hightower, Sandia National Laboratories

- **Energy Industry Perspectives - Jill Cooper, Anadarko**
- **Advanced Water Treatment - Yuliana Porras, US BoR**
- **Water Utility Use of Brackish Water – Rob Renner, Water Research Foundation**
- **Brackish Water Assessment - Pete McMahon, USGS**
- **Brackish & Produced Water Utilization in New Mexico - Jeri Sullivan Graham, Los Alamos National Laboratory**

