

Group E, Energy Problems

- **Extraction**
 - Treatment/disposal of produced water
 - Water rights conflicts (impairment of existing senior rights) **5**
 - Collection/transmission of produced water—costly, requires energy and infrastructure **5**
- **Electricity Generation**
 - Current thermoelectric cooling technologies are still water intensive **7**
 - Water quantity (temperature) is impaired
- **Renewable Sources**
 - Production of biomass/fuels requires large water supply **2**
 - Solar and wind require storage that uses water
 - Hydrogen energy production is not energy/water efficient **1**
 - Hydropower is impacted by climate change **4**
- **Regulatory and Economic**
 - Cross-boundary regulatory conflicts impede water transfer and use **8**
 - Externalities: benefit and burden are remote **2**
 - Lack of water valuation and regulatory treatment of water costs **11**
 - Water quality and discharge requirements impact cost and supply of water and energy **3**

Group E, Water Problems

- **Transportation**
 - Getting available water to where it's needed 2
- **Urban**
 - New water permits protested
 - Pumped groundwater not sustainable 2
 - Lots of non-regulated groundwater pumping and use 1
 - Rate structures don't properly value water 6
 - Unmanaged riparian vegetation uses water
 - Urban uses are wasteful and contaminate water
- **Agriculture**
 - Non-point source pollution of ag. not regulated 2
 - Unsustainable groundwater pumping 2
 - Evaporative losses are significant in center-point irrigation
 - Ag efficiencies not well understood by public and have unintended consequences 2
- **Recreation/Environmental**
 - Habitat protection conflicts with human use (e.g., recreation of historic flow regimes competes with all other uses and thus is difficult to protect ecosystems) 4
 - Rivers are being dried up for human use with significant ecosystem implications 1
- **Water Policy**
 - Institutions don't match changing demands 7
 - Lack of public knowledge leads to poor policy decisions regarding water use and supplies 2
 - Lack of interdisciplinary knowledge 2
 - Unresolved tribal claims 2
 - Fragmented ground and surface water management/lack of regional planning for integrated water use 9
 - Need for response to climate change 3