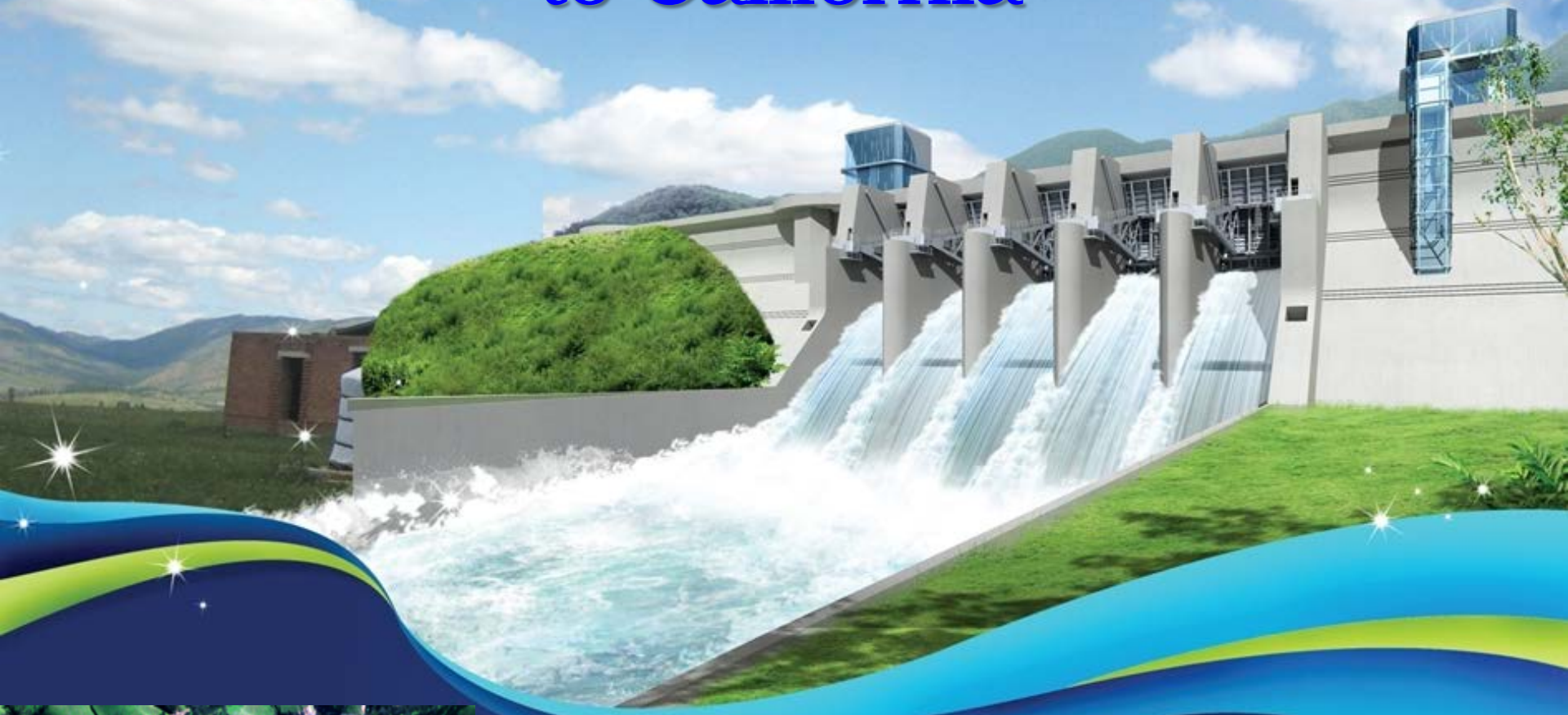


Water Pricing Reforms – Relevance to California



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Discussion Points

- California Context
- Lessons (key takeaways)
- Relevance to California
- Conclusion

California Context

- California Department of Water Resources (DWR)
 - manages & operates the State Water Project (SWP)
- SWP water rate structure
 - Fixed rate (Delta charge/conservation) + variable rate (O&M, transportation)
- Economic incentives (e.g., water pricing) – resource management strategy in the California Water Plan
- “Water tariff” – an international term
 - California & U.S. - water rate, water charge or water price; Tariff has tax connotation in the U.S.

Lessons from Chile

- Granted permanent, transferable water-use rights to facilitate water markets
- Successful privatization & decentralization
 - Improved cost recovery & affordability of water tariffs
- New challenges – extreme climatic events, groundwater extraction, deteriorating ecosystems
- Water markets' challenge - ensure optimal water use without compromising sustainability

Lessons from Chile (cont'd)

- Chile is an illustrative example of a successful transition from command-and-control to market-based approach
- Questions:
 - How transparent is the market transactions for water use rights?
 - How was this market set-up?
 - Any lessons learned that you can share?

Lessons from Israel

- Combination of quantitative and pricing tools
- The problem is the same – water scarcity
- Increased scale of seawater desalination
 - Desalinated seawater is a significant source
- Increased urban water demand
- Increased allocation of water delivered to neighboring countries

Lessons from Israel (cont'd)

- Most of the country – single water system
- Portfolio of actions helped Israel address water scarcity (associated with droughts).
- By law, a quota system is set for agriculture water use. While urban and industrial water are not.
- Fair argument that price mechanism may achieve efficiency gains at lower cost than a quota system.
 - Use of quota may inhibit competition directly if quotas are allocated to individual contractors or indirectly if they are fixed *en bloc*.

Lessons from China

- Five water pricing structures:
 - Water resources fees
 - Water supply tariffs from hydraulic engineering
 - Urban water supply tariffs
 - Wastewater collection and treatment tariffs
 - Pollution discharge fees
- Water pricing is very complicated issue – affected by many external factors
- “The costs and expenditures with public interest could be covered by government resources, while non-public interests should be covered by tariffs.”

Lessons from Western Municipal Water District

- Real good example of sustainable water rate design or water budget rate (also called allocation-based rate) from a California context
 - Achieves stable revenues
 - Meets conservation goals, and
 - Accepted by customers
- The rate is composed of fixed service and variable charge
 - May need to account for uncertainties
- DWR is looking at this pricing option

Relevance to California

- Price is an essential tool for addressing scarcity
- “Double dividend” instrument – achieves conservation goals and generates revenues
- If demand exceeds supply, then price must be too low – current pricing system may need revisiting
 - Need to account for externalities and uncertainties (e.g., climate risks)
- Barriers to market-based water rights system

Accounting for Climate Change & Variability

- Governor's Executive Order B-30-15 mandates that state agencies account for climate risks in planning and investment decisions
- Need to examine the nexus between water pricing, water infrastructure investments and climate change (and other uncertainties)
 - How do we consider climate change in water pricing?
 - To account for seasonal variability, do we set differential pricing for wet years and dry years?

Criteria-based assessment of pricing

- Economic efficiency
- Effectiveness
 - Cost effectiveness and environmental effectiveness (conservation goal)
- Financial & Economic Contribution
 - Financial & economic impact analyses – revenues for public agencies; broader economic impact at the local, regional & state levels
- Equity and fairness
- Sustainability

*In theory there is no difference
between theory and practice. In
practice there is. – Yogi Berra*





Thank you



DEPARTMENT OF
WATER RESOURCES

STATEWIDE INTEGRATED WATER MANAGEMENT