WATER MARKET INSIDER

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COLORADO RIVER SHORTAGE IMPACTS IN ARIZONA

& THE LONG-TERM STORAGE CREDIT MARKET

The first-ever Colorado River shortage declaration will drive up market demand and price of Long-Term Storage Credits in Arizona

As we enter 2022, Colorado River water users are enduring the first-ever shortage operations on the river, following declaration of a Tier 1 shortage by the US Bureau of Reclamation. Shortage operations have been coordinated and agreed upon among the seven basin states and the Bureau of Reclamation through the 2019 Drought Contingency Plans and 2007 Interim Operating Guidelines. In Arizona, a Tier 1 shortage declaration means a 512,000 acre-foot (AF) reduction in Colorado River supplies delivered via the Central Arizona Project canal. Under non-shortage conditions, the Central Arizona Project delivers approximately 1.6 million AF of Colorado River water annually to Tribes, municipal, industrial, and agricultural users in Central Arizona.

One impact of the Colorado River shortage declaration in Arizona will be heightened market demand for supplemental water supplies to make up for shortage, including demand for Long-Term Storage Credits (LTSC).[1] The total volume of recoverable LTSC across the Arizona's Active Management Areas exceeds 12.8 million AF. In the Phoenix Active Management Area alone, the balance of recoverable LTSC is over 7.5 million AF. The Phoenix Active Management Area also has the most active LTSC transfer market, with nearly 1 million AF of LTSC transacted since 2008.

[1] LTSC are accrued by storing renewable water supplies at a permitted underground storage facility or groundwater savings facility and represent a water supply that can be recovered in the future to meet demands.

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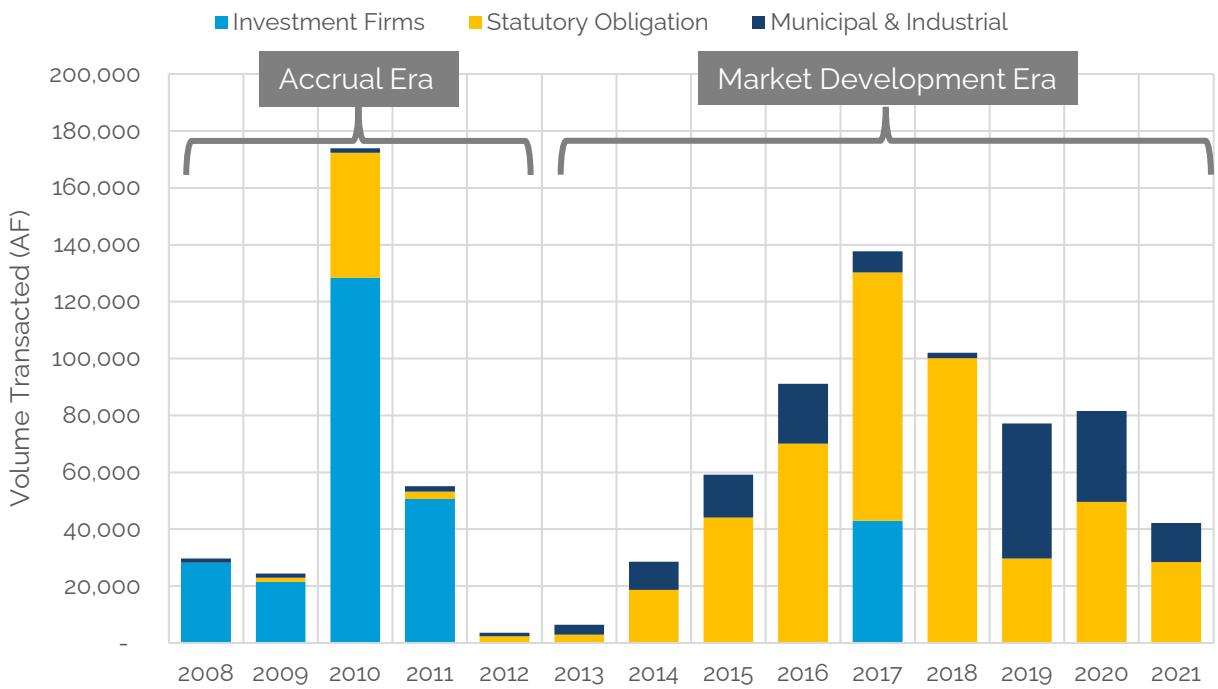
Figure A: Annual Volume of LTSC Transacted in the Phoenix Active Management Area by Buyer Sector



Large Volumes of 'Excess' Defined the Long-Term Storage Credit Accrual Era

Prior to 2012, annual deliveries of Central Arizona Project supplies through the Excess pool were between 300,000 to 550,000 AF per year.[2] Supplies available through the Excess pool were primarily directed to storage facilities for accrual of LTSC. During this period, the market price for LTSC tracked closely with the cost to accrue LTSC. Acquisition of LTSC in the market during this period was dominated by investors, who purchased LTSC at the cost of storage anticipating future appreciation of LTSC.

[2] Excess pool is any available supply after satisfying delivery requests of all other contracts and the Agricultural pool.

Reductions in Excess Supply Availability Led to Era of Market Development

Beginning in 2012, Tribal contractors increased delivery requests to maximize use of their Central Arizona Project contract volume for the first time and began storing surplus supplies to accrue LTSC. This shift substantially diminished the volume of available Excess pool supply. Between 2013 – 2021, the limited Excess pool led to an increase in participation in the LTSC market. Municipal and industrial entities entered the market to acquire LTSC as a means of securing long-term supply reliability. The Central Arizona Groundwater Replenishment District and Arizona Water Banking Authority began purchasing LTSC in the market at an increasing frequency to meet long-term statutory obligations. Growth in market participation led to price dispersion and shifted the market for LTSC to an era of price discovery, with a realization of market value for LTSC beyond the cost to develop the supply.

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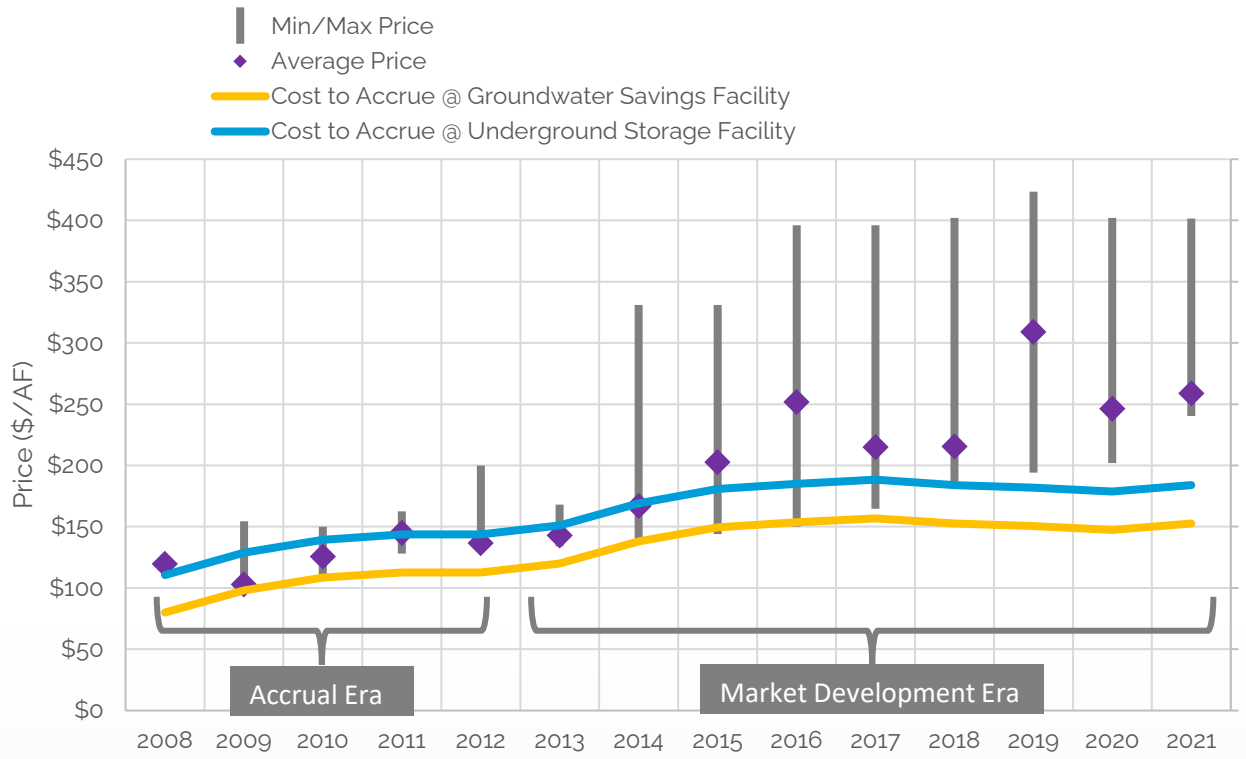
Figure B: Cost to Accrue[3] and Market Prices for LTSC in the Phoenix Active Management Area.



The Long-Term Storage Credit Market Will See Increased Competition and New Participants Under Shortage Operations

Based on recent modeling forecasts, the Colorado River is expected to be under shortage operations through at least 2026. Central Arizona Project rates are scheduled to increase based on cost impacts of reduced delivery volumes, which will drive up the cost to accrue LTSC. Not only are surplus supplies no longer available through the Excess pool, but Central Arizona Project contractors facing delivery reductions due to shortage will look to the market to acquire alternative supplies, including recoverable LTSC. With this increase in demand for LTSC, it is expected that the LTSC market will transition to a new era of consumption causing the value of recoverable LTSC in the Phoenix Active Management Area to continue to climb above the cost to accrue.

3 Cost to accrue LTSC is based on Central Arizona Project rates and storage rates.

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Arizona's Long-Term Storage Credit Market Outlook

The compounding effect of the elimination of the Excess pool and reductions in contract deliveries caused by Colorado River shortage operations will result in a new era of upward pressure on prices in the LTSC market in the Phoenix Active Management Area. The maximum prices paid for LTSC during the investment era averaged 34% above the cost to accrue, while the market development era saw maximum LTSC prices averaging 134% above the cost to accrue. As the Phoenix Active Management Area LTSC market enters a third era defined by the first-ever shortage declaration on the Colorado River, the divergence of LTSC prices beyond the cost to accrue will continue to expand. Lack of alternative supplies and increased market demand, compounded by rising cost to accrue LTSC, will result in a continued and amplified increase in the market price for LTSC in the Phoenix Active Management Area.

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