

July 2021

Looking at the evening sky last week in New York, one would think from the red-orange hue of the moon that it was autumn. However, it was just the Dixie fires. The smoke from California’s and Oregon’s fires has been so intense that it can be seen and felt across the United States, adding to thicker than usual haze here in NY and giving the moon its recent orange hue. The site is a reminder of the “inconvenient truth” and the now immediate impact that drought and water scarcity (compounded by anthropogenic climate change) is having on our environment and markets.

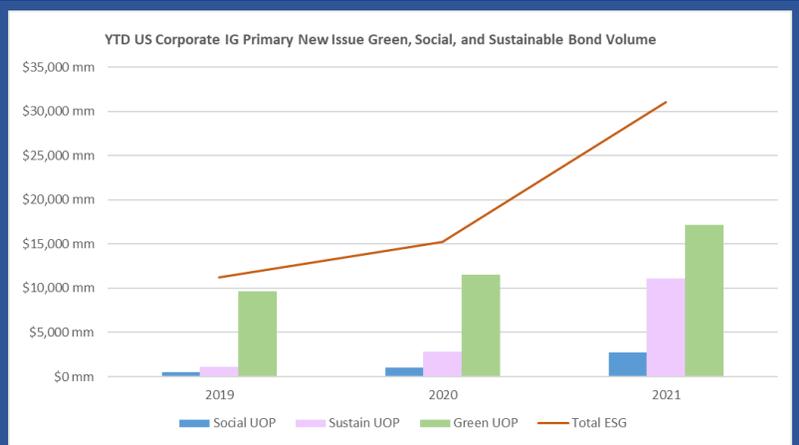
In this month’s report, we examine water risk, drought, wildfires, and the impact they are having on US markets as well as geopolitics.

While drought and water scarcity are issues we have been contending with for thousands of years, rising global populations, demographic changes, technological advancements, and the impact climate change has on water resources is starting to have financial market participants [concerned as to how the water risk is being managed & reported](#). With the exception of certain industries like utilities and water management, the impact (until recently) has been relatively overlooked by investors, but this is changing as drought continues to affect supply chains and even commodity prices. Water futures are +20% since March 2021!

[Water & North America](#)

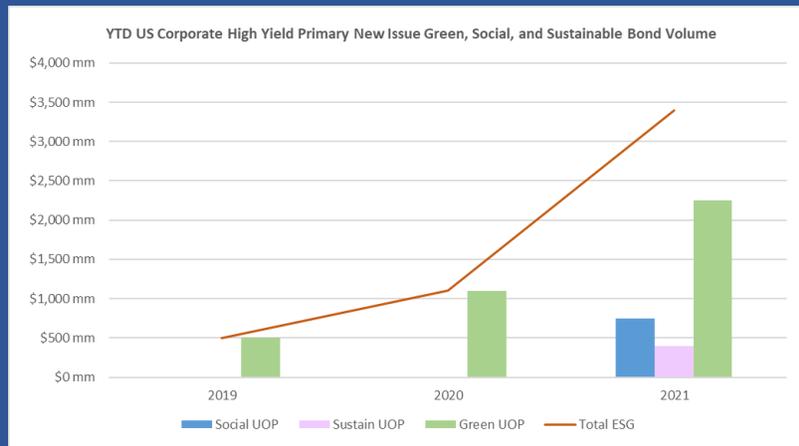
Here in North America where water is relatively accessible, it is still a fragile resource that is subject to drought and capable of impacting markets. In the United States over 50-60% of the landmass at the start of 2021 has been either abnormally dry or in a period of exceptional drought (as of July 20th over 25% of the country was in extreme or exceptional drought). It’s not just a “one off” year event either, as 12 of the past 22 years exceeded the yearly national average of the percent of the nation [experiencing drought and/or abnormally dry conditions](#).

Drought and the magnifying effects climate change has cannot be ignored as it is making noticeable impacts on markets and stakeholders. For instance, [since 2013](#) over 11mm acres in CA have been burned or destroyed, damaging 51k+ structures and leading to 199 fatalities. The damages from the CA 2018 fires alone were estimated at [\\$148bn](#), forcing [PG&E to file Chapter 11 \(\\$25.5bn\) bankruptcy](#) to finance the settlement claims. Utilities are not alone either as drought and wildfire pose real risks across sectors. This summer Canadian wildfires caused rail delays resulting in a logjam in lumber supplies that spiked lumber futures. There is also the real risk that drought and climate change can also effect home valuations. Places like Arizona, which has experienced a [hot real estate](#) market, has also been subject to not just exceptional drought conditions but also recent [flash flooding](#)!



Investment Grade: July 2021 ESG themed IG primary debt issuance volume exceeded July 2020 by +500%. Realty Income came to market with a Sterling Green Bond (Academy served as co-manager). PacifiCorp along with MidAmerican Energy (BRKHEC) also printed Green UOP bonds. Oberlin College, Century Housing, and Citigroup all came to market as well with non-index eligible EGS debt offerings (above).

High Yield: No new offering to report (below).



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Water & Geopolitics

In Asia, drought is real. Taiwan this year is experiencing a 50 year drought. It is also home to TSMC, the globe’s largest semi-conductor producer. Conditions this year have forced [TSMC to design and build an industrial waste water treatment center](#) to be used in chip fab, which is expected to come into operation later in 2021. Higher temperatures are also resulting in power rationing in China, which is expected to impact manufacturing and possibly economic output. A similar event occurred almost 4+ years ago in Venezuela, where droughts forced the nation to ration power (a majority of Venezuela is powered by hydroelectric) resulting in massive economic losses that have since led to the now volatile political and economic environment there.

In the Middle East and Africa, dry and water scarce conditions are causing increasing tensions. Iran recently has been host to weekslong water protests centering on accusations that petrol producers are diverting water to extract and refine oil. A number of protesters have been arrested with 8 reported killed. Africa too, has seen tensions resulting from water issues as Ethiopia and Egypt square off regarding the [Grand Ethiopian Renaissance Dam](#).

Water stress poses a real risk for future enegy transition. As the globe looks to shift from ICEs to EVs, lithium is set to play a critical role in battery manufacturing. However, [extracting and refining lithium is water intensive](#), requiring on average 500,000 gallons of water to produce 1 ton of lithium. Parts of South America where lithium is mined have reported groundwater depletion and soil contamination as a result of this mining, highlighting the challenges organizations will face as they look to reconcile choices on clean water and sanitation ([UNSDG 6](#)) with affordable and clean energy & climate action (UNSDG 7 & 13).

Bottom Line

- *Water discharge and management are no longer issues the utility, industrial, and agricultural industries can ignore (i.e. they need to start finding ways to track and monitor, including assessing risk and impact)*
- *Hedging Water Risk: Water futures, non-water intensive industries, or investments with less geospatial exposure to water risk*
- *Future energy and current technology is not safe from water supply chain risk!*

Further Resources

US Drought Monitor: <https://droughtmonitor.unl.edu/DmData/DataTables.aspx>

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