

Take a Walk on the Wild Side

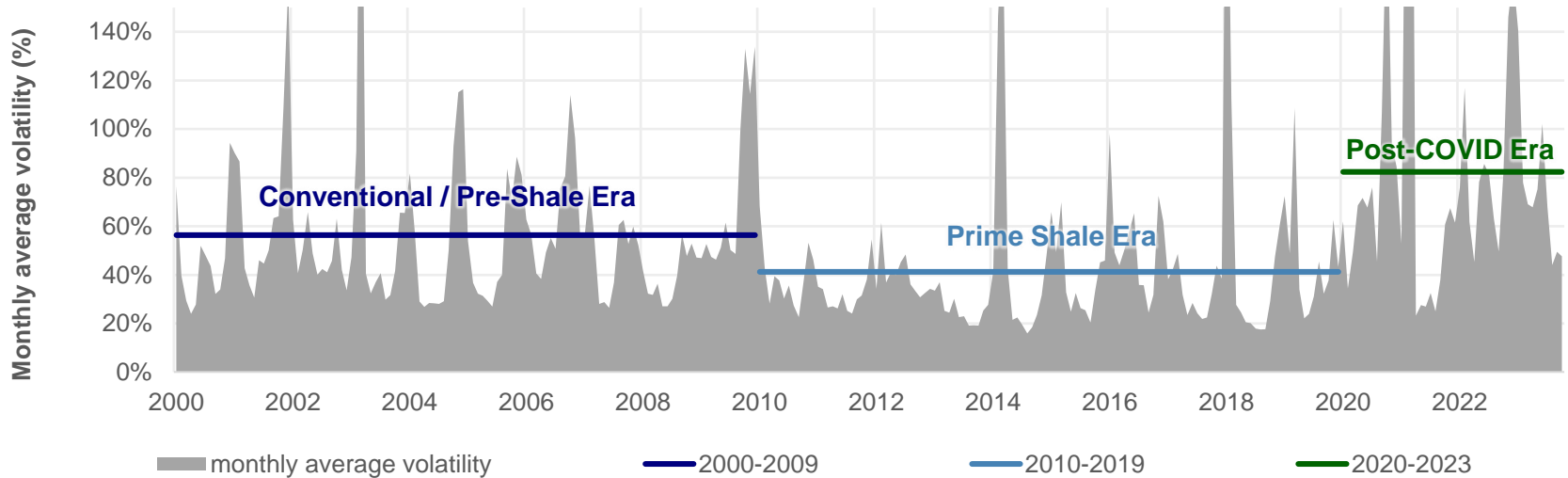
Managing risk in an era of high interest, wild volatility, and geopolitical uncertainty (while giving trading groups the leeway, they need to succeed).

Energy Trading Week Americas
October 26th, 2023

Presenter: **Stephen Freeman**
Chief Risk Officer
JERA Americas

Low interest rates and aggressive shale drilling muted volatility for over a decade, but both are now in new paradigms

Henry Hub volatility and pricing

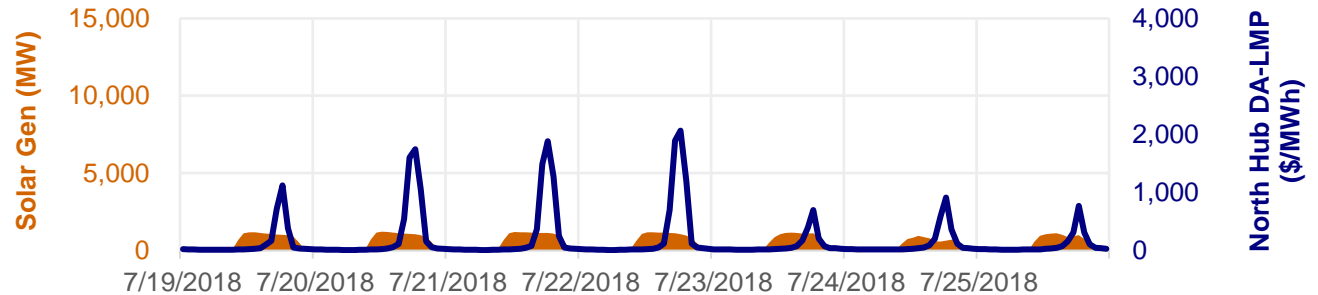


How do you assess risk on long-term assets / PPAs when markets are moving at incredible speeds – ERCOT’s rapid evolution in only five years

	Peak Load	Max Solar Gen (Jul-Aug)	Max Wind Gen (Jul-Aug)	SARA Report Estimated Reserves
2018	73,259 MW	1,257	15,863	~7.5%
2023	85,435 MW	13,577	24,179	~23%

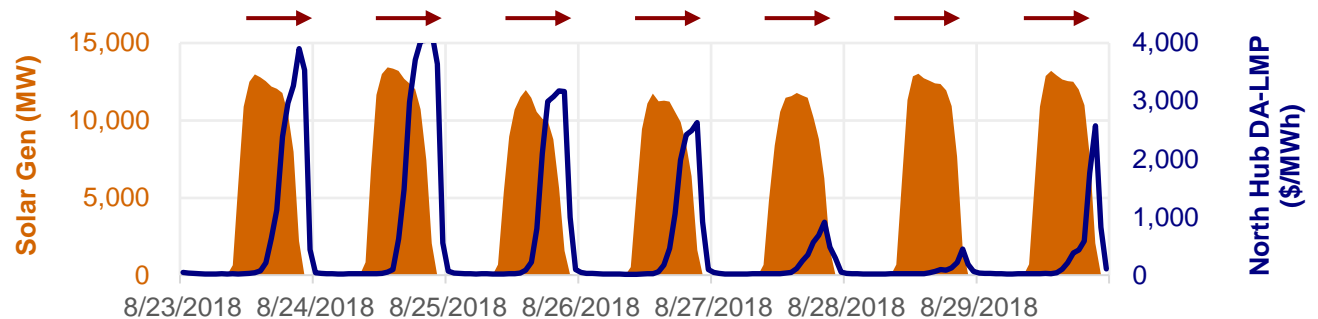
2018

- Very tight reserve margins
- Very nascent solar fleet that captures highest-priced hours 4-5 PM



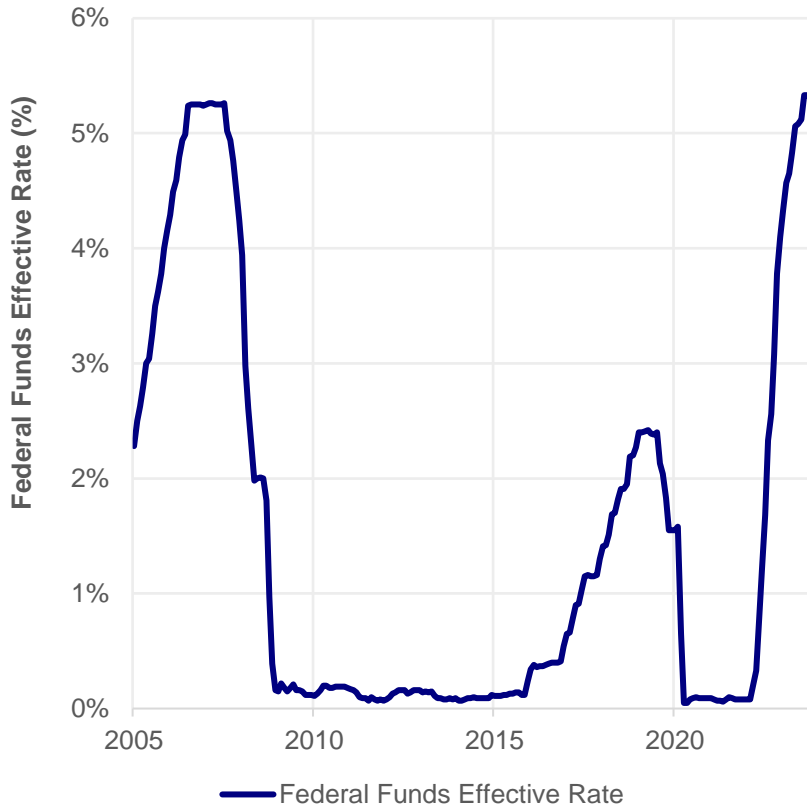
2023

- Healthy reserves “on paper”
- Price spikes are now at 7-8 PM sunset as fossil plants ramp up to backfill solar

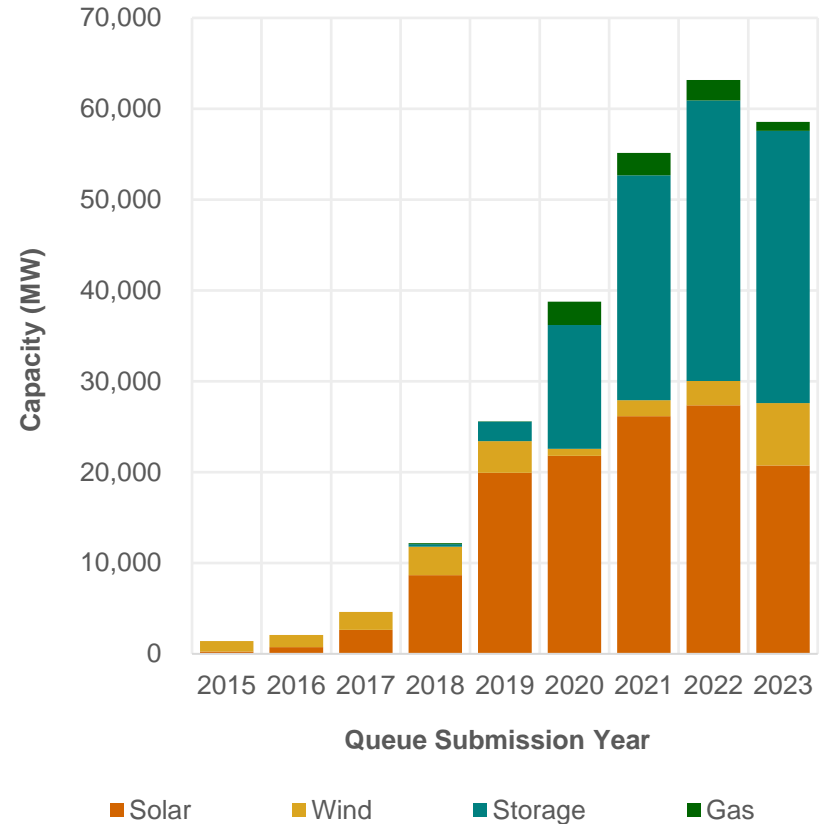


Renewable projects are underpinned by long-term PPAs but face a more immediate challenge: The Era of Free Money is over for now

Fed Interest Rate



ERCOT Generator Interconnection Queue



- ❑ As a singular example, ERCOT has 260+ GW of queue projects... in an 85 GW peak demand market
- ❑ We are now seeing many projects facing delays measured in “years” from a host of reasons