



CFTC Energy & Environmental Markets

Advisory Committee Meeting

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President

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Transforming global markets

Intercontinental Exchange (NYSE: ICE)

builds, operates and transforms
global markets through information,
technology and expertise



Macro energy trends

An overview

Energy transition

- Decarbonization
- Desulfurization

Changing global energy trade flows

- A global gas market
- Shale revolution

Energy trends

Decarbonization



- Reducing the carbon footprint of the energy sector has increased adoption of renewables in electricity generation and transportation fuels.
- ICE offers a growing suite of North American & European carbon allowance and renewable energy futures.
- Intermittency in renewable electricity does require alternative fuel sources to provide security in supply, natural gas is the cleanest and most versatile fossil fuel to partner.
- Market based mechanisms in environmental markets are an important catalyst in supporting the energy transition.

Desulfurization



- In 2015 we transitioned ICE gasoil futures from 1,000 ppm to a 10 ppm sulfur specification – now the benchmark in middle distillates.
- IMO 2020 0.5% sulfur cap, is the next catalyst in this shift and will drive global LS marine gasoil demand from 700kb to 3.4m a day starting Jan 1, 2020.
- ICE offers a wide range of low sulfur gasoil futures and a global complex of derivatives based on local assessments which clear on ICE.
- ICE has listed a suite of IMO 0.5% sulfur instruments to supplement our fuel oil derivatives complex as hedging needs change and customers try to manage this price risk.

Energy trends

Global gas market

- Managing global risk has never been more important, natural gas is transforming as pricing is increasingly global and commercial participants seek to manage risk as close to the source of consumption or production.
- Underpinned by the liberalization of LNG, North America, Europe and Asia are becoming interconnected.
- Our global infrastructure is built for commercial end users who choose to hedge their exposure to risk using regional and local locations.

Shale revolution

- Asia and Europe are driving demand for a high quality U.S. crude that isn't blended.
- Working with physical participants, we have developed mechanisms that meet the quality, delivery and storage infrastructure needed.
- Permian WTI futures provides delivery in Houston, as crude prices shift from Cushing to the waterborne U.S. Gulf Coast.

Global oil benchmarks



Global crude benchmarks

Brent

Brent is the price barometer for up to two-thirds of global crude, with broad accessibility as its waterborne supply is easily transported around the world. ICE's Brent complex has expanded to more than 500 related hedging instruments, since the contract launched 30 years ago.

Dubai Platts

As the principal for the Middle Eastern and Asian crude oil markets, Platts Dubai futures provides critical price discovery and risk management.

U.S. Shale Revolution

Permian WTI

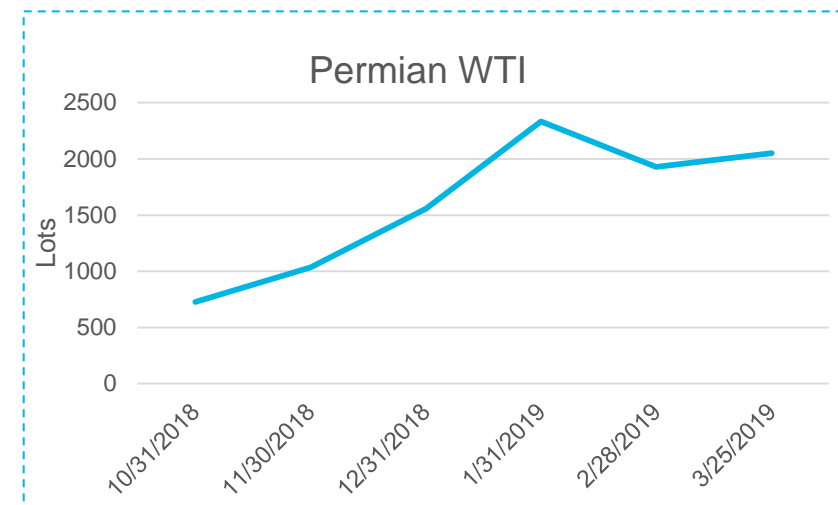
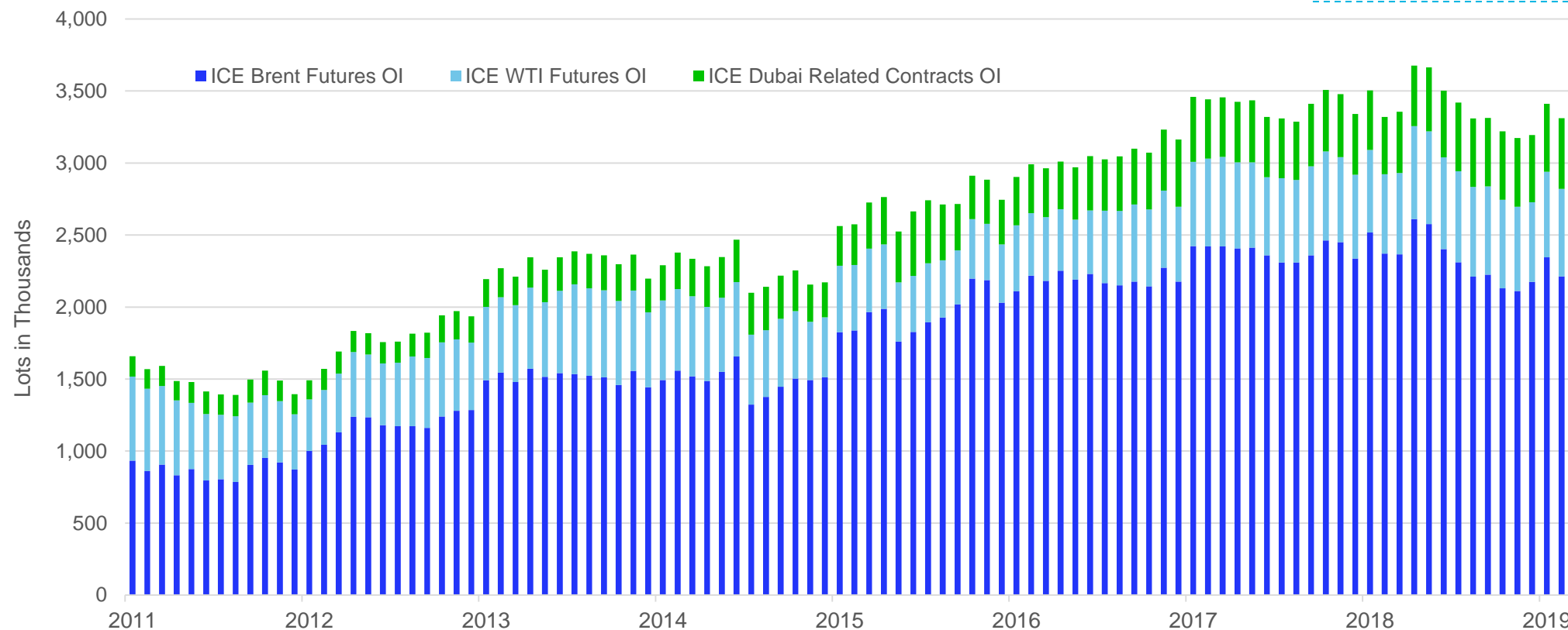
Permian WTI futures contract brings a light sweet U.S. crude to the global market, with delivery and storage in Houston enabling efficient transportation to domestic and foreign buyers.

New Mexico
Cushing
Oklahoma
Texas
Permian Basin
BridgeTex & Longhorn Pipelines
Magellan East Houston

Global crude

Open interest climbs as participants increase their hedging

Brent, WTI and Dubai



Global natural gas complex

The background of the slide is an abstract composition of flowing, wavy lines. On the left side, there are broad, soft-edged shapes in shades of orange and red. These transition into more complex, multi-colored patterns in the center and right, featuring deep blues, purples, and hints of white. The overall effect is one of dynamic movement and depth, with the lines appearing to swirl and flow across the frame.

Global gas benchmarks

58 basis markets

Europe

Northwest Europe's natural gas markets are a crucial driver for balancing the LNG market, with their diverse energy supply and flexible infrastructure. ICE's **NBP** and **TTF** are the most liquid natural gas trading hubs in Europe.

North America

The Shale revolution has amplified the importance of **ICE's basis markets** as Henry Hub prices diverge from key Shale basins. Our 58 basis markets trade at prices reflective of regional supply and demand dynamics. North America's status as a key exporter of natural gas continues to strengthen.

Key

**ICE's Key NA Basis Markets**
TETCO M3
Dominion South
Chicago Citygates
MI Consolidated Citygates
Houston SC
Henry
AECO
NWP Rockies
SoCal Border

**ICE's Key LNG Contracts**
Gulf Coast Marker (GCM)
TTF and NBP First Lines
JKM

Global Gas Trade Flows

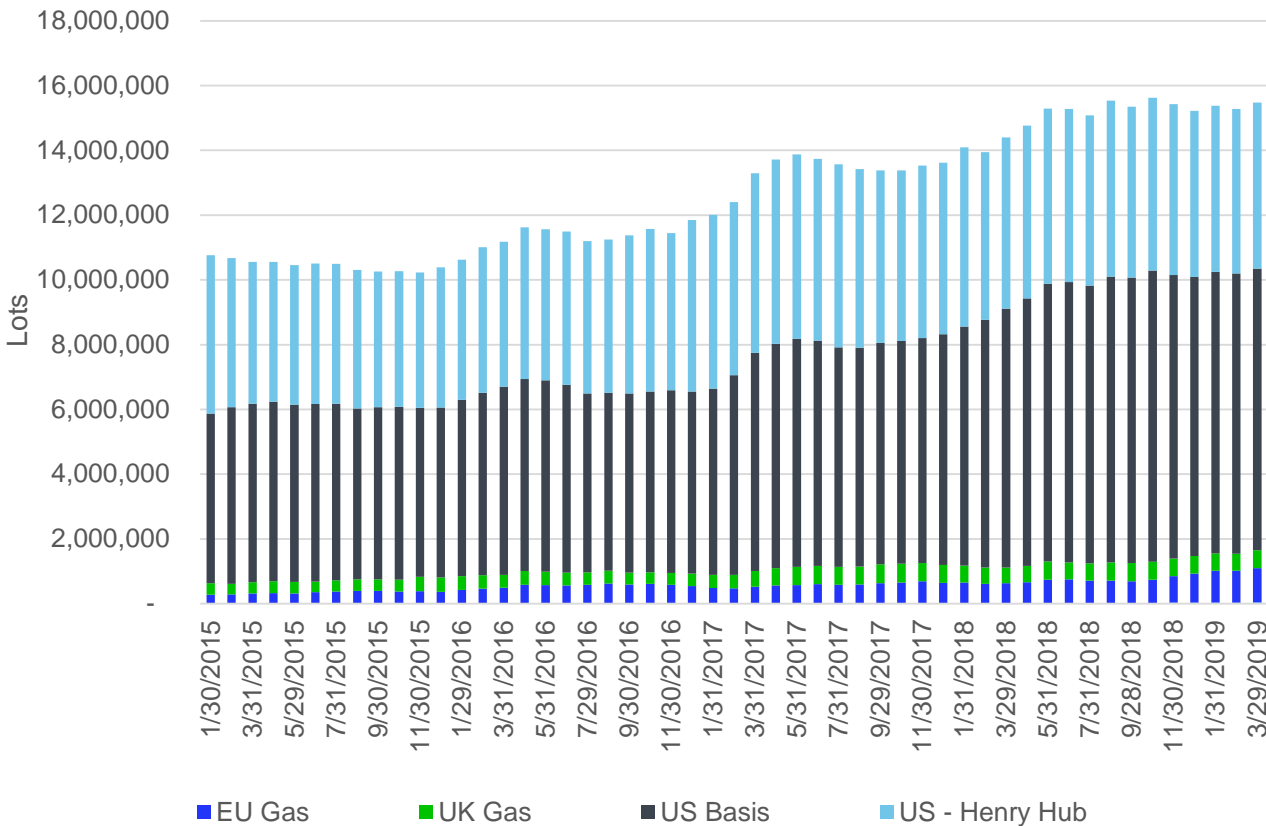
Asia Pacific

Asia is driving global gas demand due to its fast-growing economies and environmental concerns. Our **JKM LNG** contract is the benchmark for natural gas across the region.

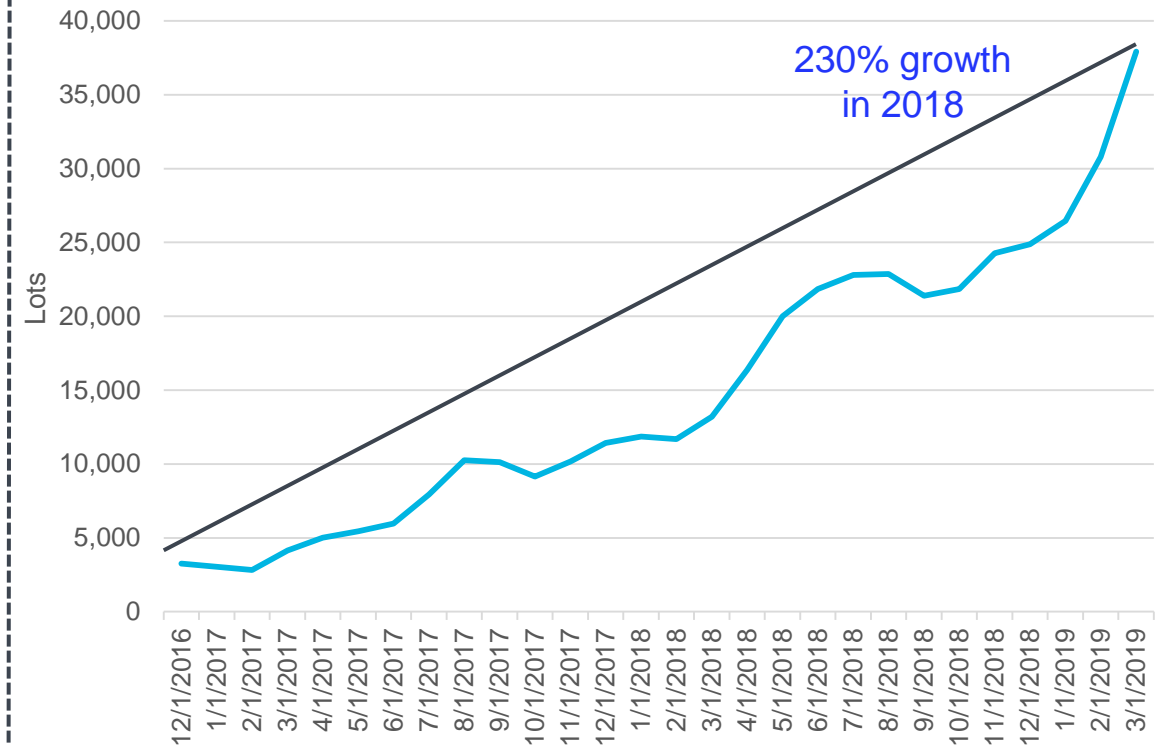
Managing global gas risk

Open interest continues to grow as participants look for hedging opportunities

European and US markets



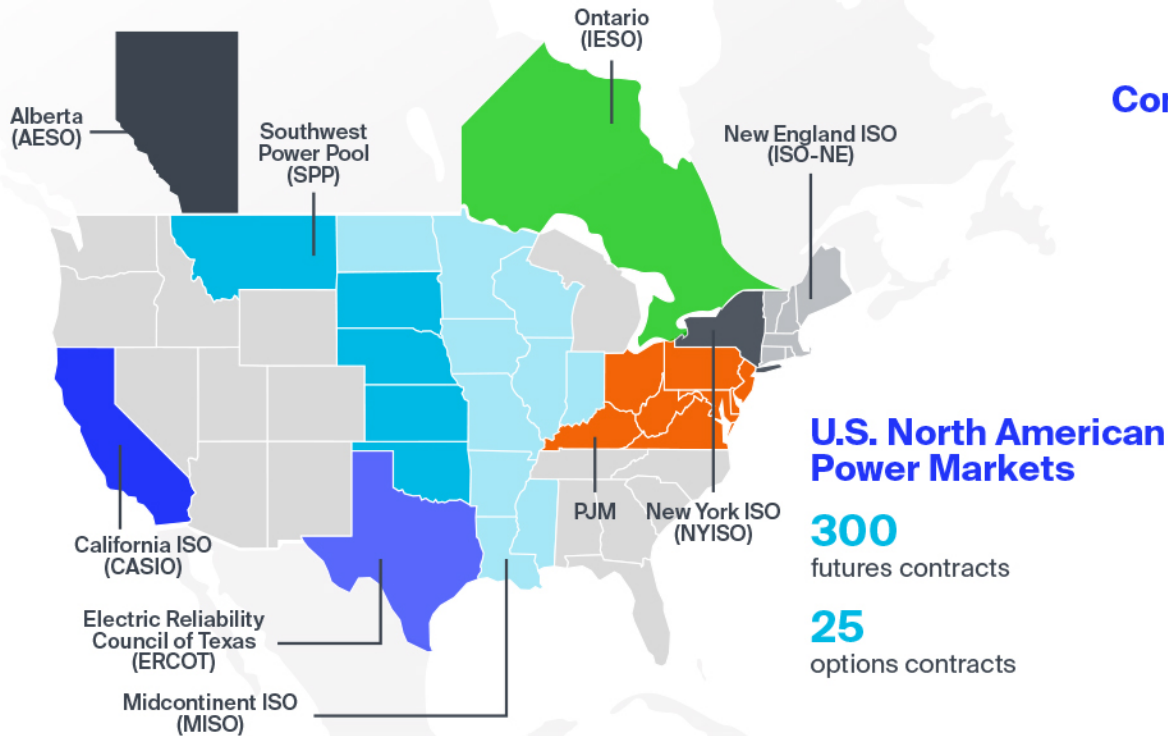
JKM LNG (Platts)



The power markets



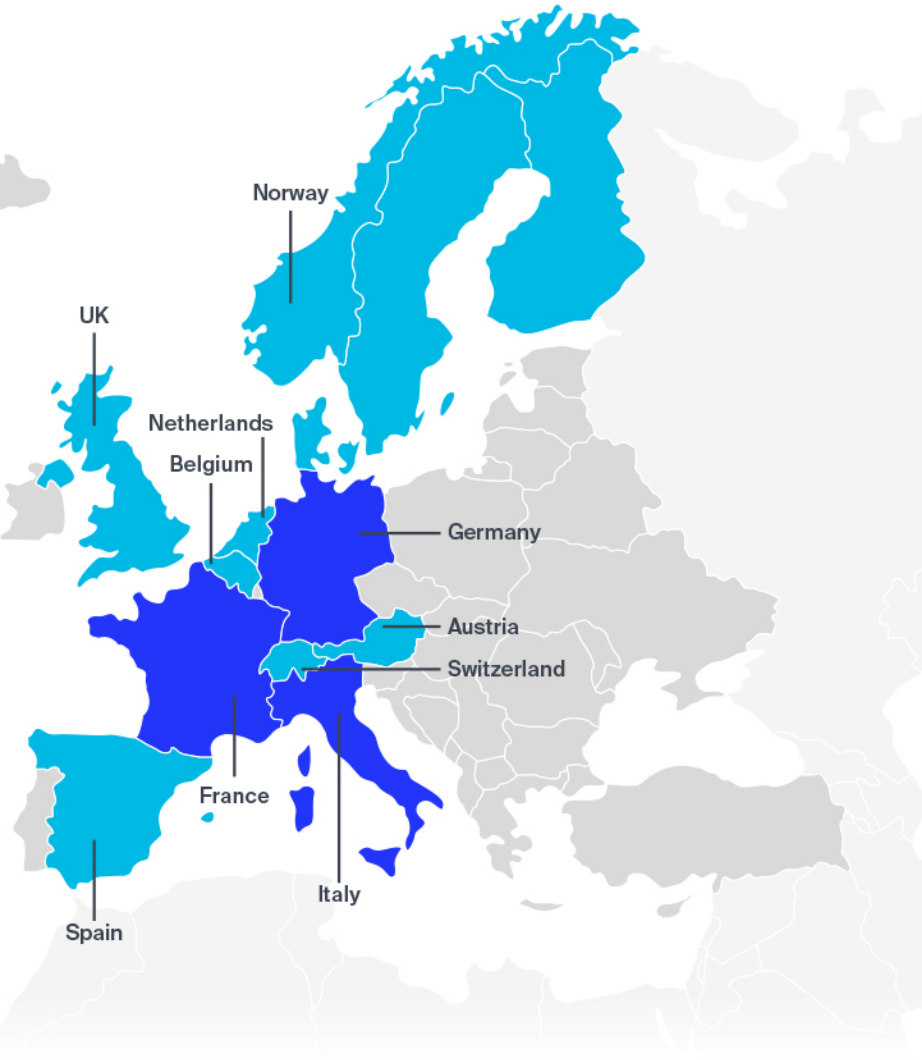
Global power benchmarks



UK & Continental European Power Markets

10 futures contracts
3 options contracts

Futures & Options contracts
Options contracts





Summary

The energy transition

- We're witnessing increased competition between fuels amid the general shift to cleaner energy sources.
- Demand for U.S. crude and a liberalizing global gas market is seeing demand and supply dynamics become globalized.
- The broadest range of energy products is needed to help build and support the energy transition.