

Keynote Address: THE REALITIES OF ENERGY TRANSITION

Corporate Positioning in the Context of Rising Climate Focus and Geopolitical Fragility

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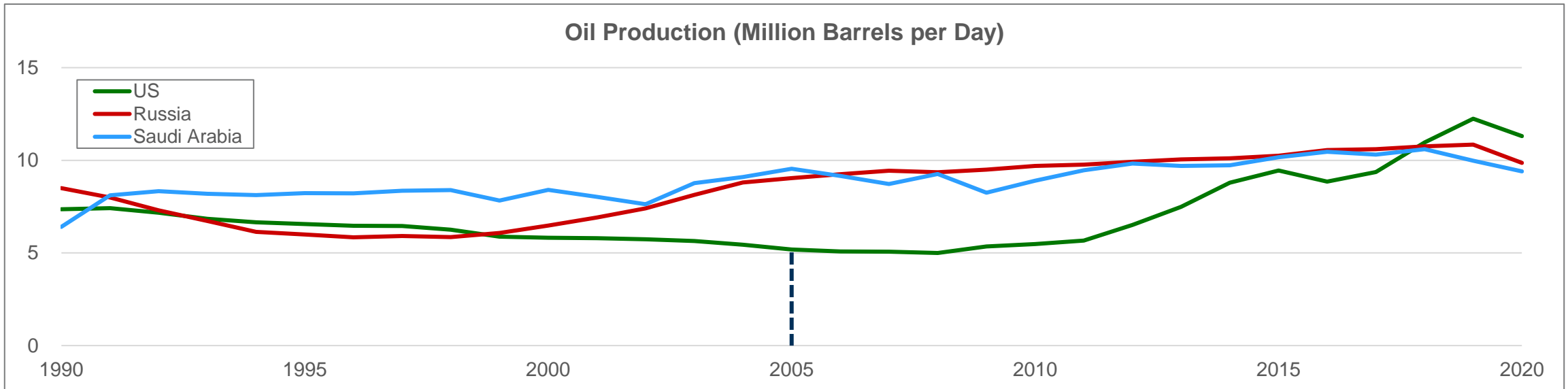
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Topics

- ❖ **Current Perspective**
- ❖ **Environmental, Social and Governance (ESG) Strategic Transition Paths (per Deloitte)**
- ❖ **Observations about the Now Evolving Energy Transition**
- ❖ **President Biden's Climate Change Executive Order**
- ❖ **Challenges Likely to be Triggered by the Biden Executive Order**
- ❖ **Carbon Capture, Utilization and Storage (CCUS)**
- ❖ **Geopolitical Fragility**
- ❖ **Concluding Observations**

Current Perspective

- ❖ Energy transitions occur when a critical mass of technological initiatives and economic drivers combine to stimulate substantial repositioning
- ❖ This was clearly the case when well drilling advances and the oil price impact of tightening supply / demand enabled the Shale Revolution to become transformative for U.S. strategic positioning as it emerged as a leading global producer



- ❖ While there are notable differences in this case, nonetheless there are key lessons from that decade-plus transition that should help inform our actions to address today's new transition triggered by pressing global climate concerns within a geopolitically challenged operating environment

Deloitte's ESG Strategic Transition Paths

❖ Net Zero Pioneers:

- Moving away from fossil fuels with established net zero goals
- Bold visions to divest hydrocarbons
- Pursue CAPEX redeployment

❖ Green Followers:

- Go green
- Right size oil reserves
- Pace into new energy sources by mid 2020s

❖ Low-Carbon Producers:

- Create new value by streamlining portfolio
- Decarbonizing the business
- Optimizing their operations

❖ Hydrocarbon Stalwarts:

- Staying put in hydrocarbons
- Be the last standing suppliers via market share growth
- Focus on the lowest cost producing areas

Observations about the Now Evolving Energy Transition

- ❖ Distinguish between perceived and actual needs and timing for decarbonization
- ❖ Focus on technological advances to address obstacles to meaningful progress
- ❖ Embrace improvements in security of supply
- ❖ Carefully define realistic electric vehicle (EV) buildout objectives
- ❖ Utilize funding mechanisms that are not exacerbating to sound positioning
- ❖ Establish flexible timeframes to achieve goals (versus arbitrary mandates), as actual experiences should inform the need for adjustments to goals
- ❖ Embrace the reality and wisdom that “more and ever more” are not always, or necessarily, better than going for an achievable “lesser target”

President Biden's Climate Change Executive Order

- ❖ It seeks to utilize the Federal Government's sustainability plan to jump start the transition into an EV-driven mode

- ❖ The goal includes achieving 100% carbon free power in federal operations by 2030, as well as 100% of the government's vehicle fleet purchases to be zero emissions by 2035
 - Additional Goals: 100% carbon free for light duty vehicles by 2027 and 50% reduction in building emissions by 2032

 - Targeted Items: 300,000 buildings and 600,000 cars and trucks

- ❖ Annual purchasing power is \$650,000,000 in both goods and services

Challenges Likely to be Triggered by the Biden Executive Order

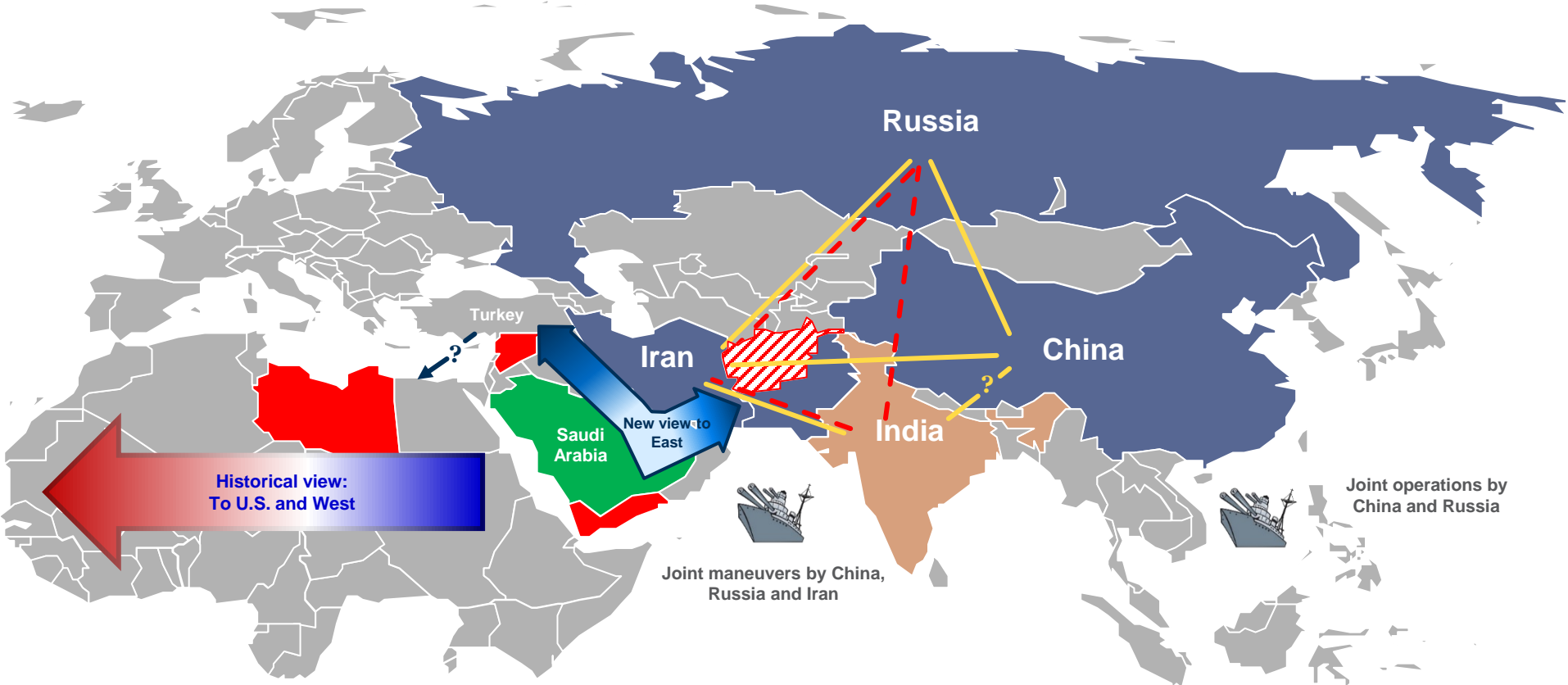
- ❖ While a large government buyer can incentivize markets to focus and help push new technologies, excessive use of such actions can also prove disruptive to the functioning of free markets
- ❖ Simply following China's example can trigger unintended consequences
- ❖ The net-annual carbon free power goal also calls for 50% of the power to be emissions free on a 24/7 basis and produced and consumed in the same regional grid (a formidable task that can negate the benefits of energy supply net working)
- ❖ Full compliance with Biden's goals and timeframes potentially looms as a serious challenge
- ❖ Let's watch Google's program to see how well they do in voluntarily pursuing their program (i.e., a litmus test for other success)

Carbon Capture, Utilization and Storage (CCUS)

- ❖ With expected higher oil and gas prices, many in the energy industry believe there will be good ability to embrace carbon capture technologies
- ❖ The super majors including Exxon, Chevron, and Shell seem likely to embrace this opportunity
- ❖ Select independents could also show up (Talos, California Resources, etc.)
- ❖ The petroleum sector's accumulated experience and knowledge of CO₂ in enhanced oil recovery projects involve relevant skill sets to address CCUS opportunities

Geopolitical Fragility

Evolving Power Triangles



Global power alliances are shifting / creating new systemic stresses

Geopolitical Fragility

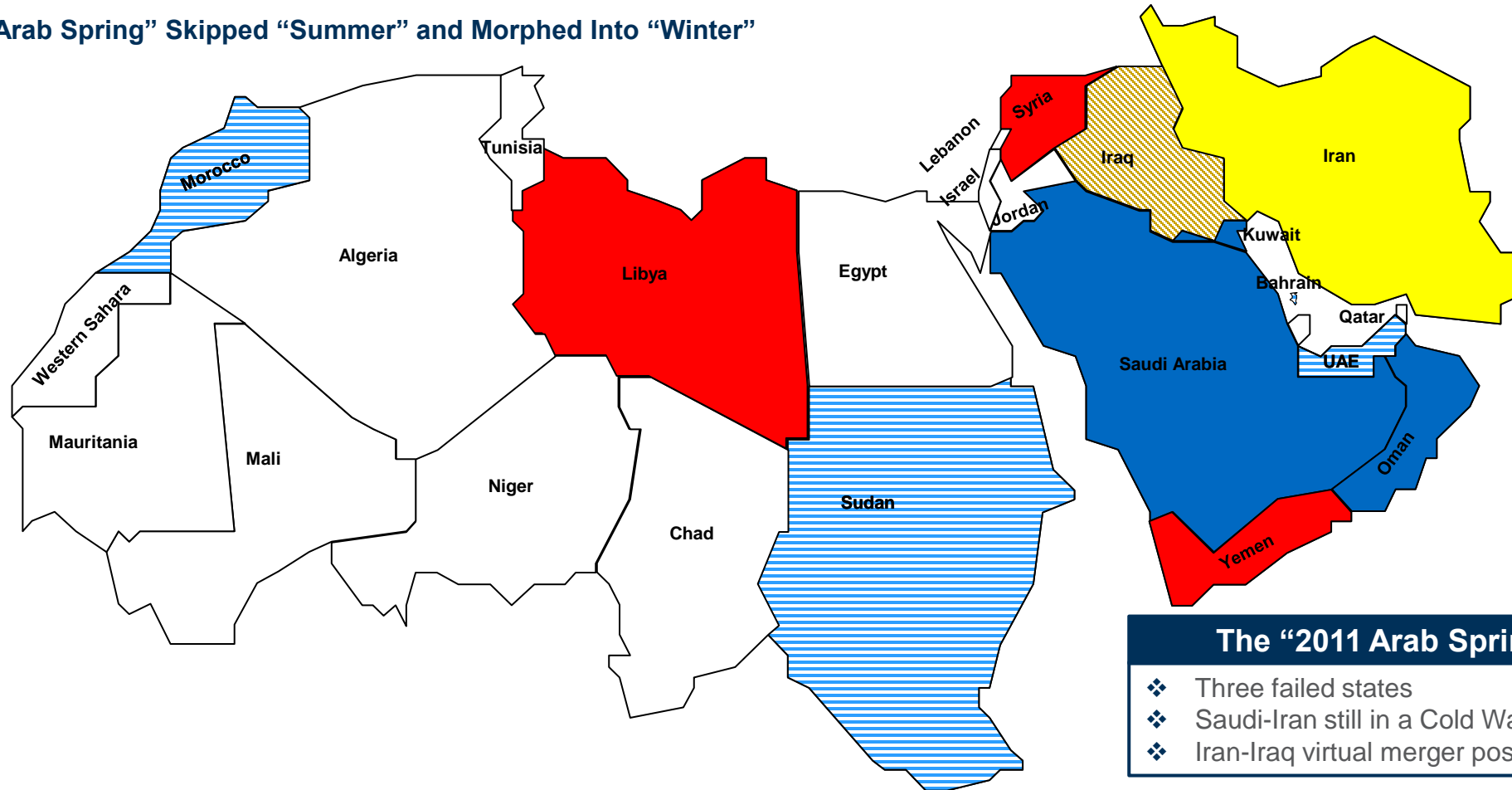
China's Man-made and Militarized South China Sea Islands



China's initiatives are significantly altering the Pacific Rim military and economic power balance

Geopolitical Fragility

The “2011 Arab Spring” Skipped “Summer” and Morphed Into “Winter”



The “2011 Arab Spring” Legacy

- ❖ Three failed states
- ❖ Saudi-Iran still in a Cold War state
- ❖ Iran-Iraq virtual merger possible post Sistani?

Traditional relations between the US, NATO, Saudi Arabia, Egypt, Turkey and Iran are all in a degree of flux

Concluding Observations

- ❖ Elevated ESG expectations are becoming a key driver of the 21st century energy transition now underway
- ❖ Some goals involving improved sustainability of operations along with reduced emissions are conceivably achievable
- ❖ However, rigid mandates to attain arbitrary targeted levels could also trigger unforeseen disruptive impacts ultimately possibly resulting in meaningful capital destruction
- ❖ Blind emulation by the U.S. of China's transformation into an electrostate could well entail market dislocations due to competition for rare earth materials and other renewable options