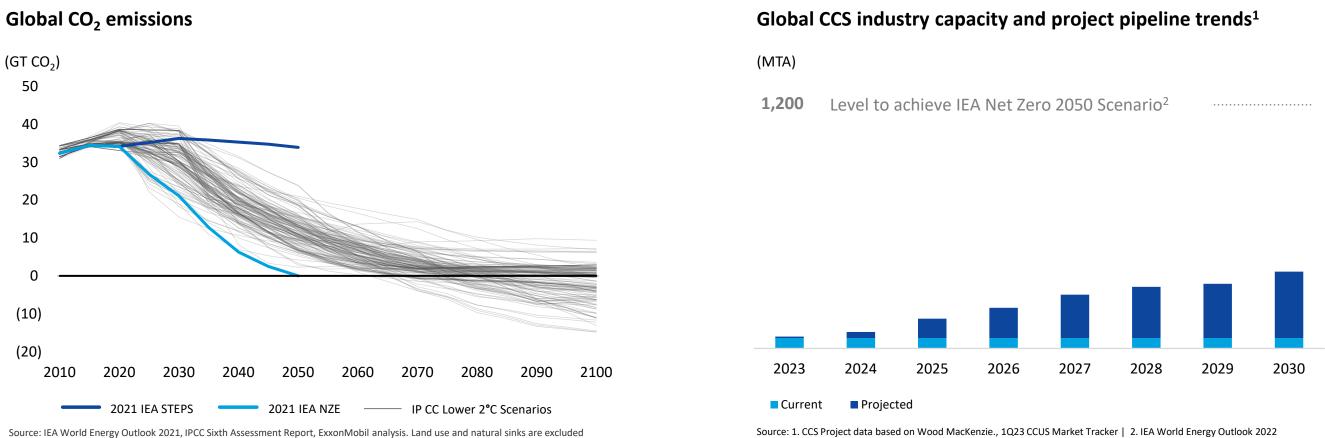
CARBON CAPTURE AND STORAGE (CCS): KEY ENABLERS TO DEPLOYING CCS IN ASIA PACIFIC

## Japan CCS Forum

Kenneth Freeman Asia Pacific Policy Director Low Carbon Solutions



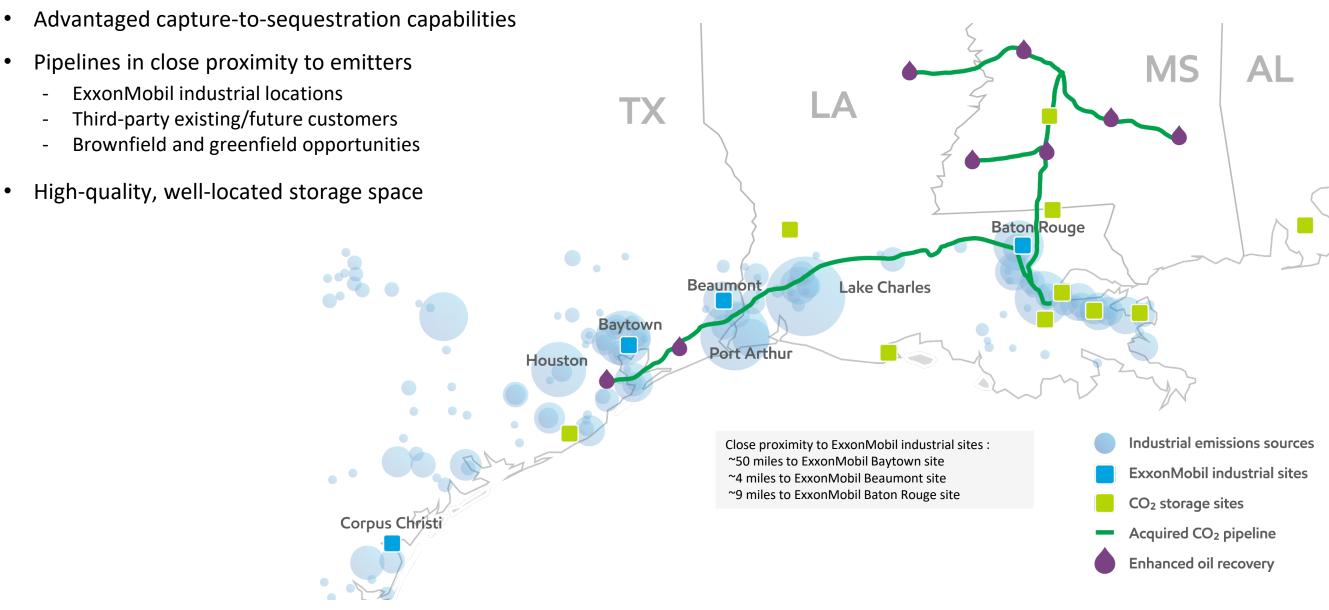
## CCS WILL PLAY AN IMPORTANT ROLE IN THE ENERGY TRANSITION



- CCS is a key GHG mitigation technology ٠
- Only ~50MTA of CCS capacity is operational today; if all projects proceed, society will still be 3x short of the pathway needed to achieve IEA • Net Zero Emissions 2050 Scenario
- We need to identify enablers for exponential acceleration to meet societal emissions goals ٠

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## COMBINATION CREATES STRONG U.S. GULF COAST POSITION



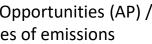
## ASIA PACIFIC SCENE SET

- Asia Pacific accounts for ~52% of global CO2 emissions ٠
- Advanced economies have more aggressive decarbonization plans • but limited access to low carbon sources of energy and CO2 storage
- Emerging economies have potential for large CO2 storage and low ٠ carbon energy exports
- CCS and hydrogen will require cross border value chains, adding • additional complexity

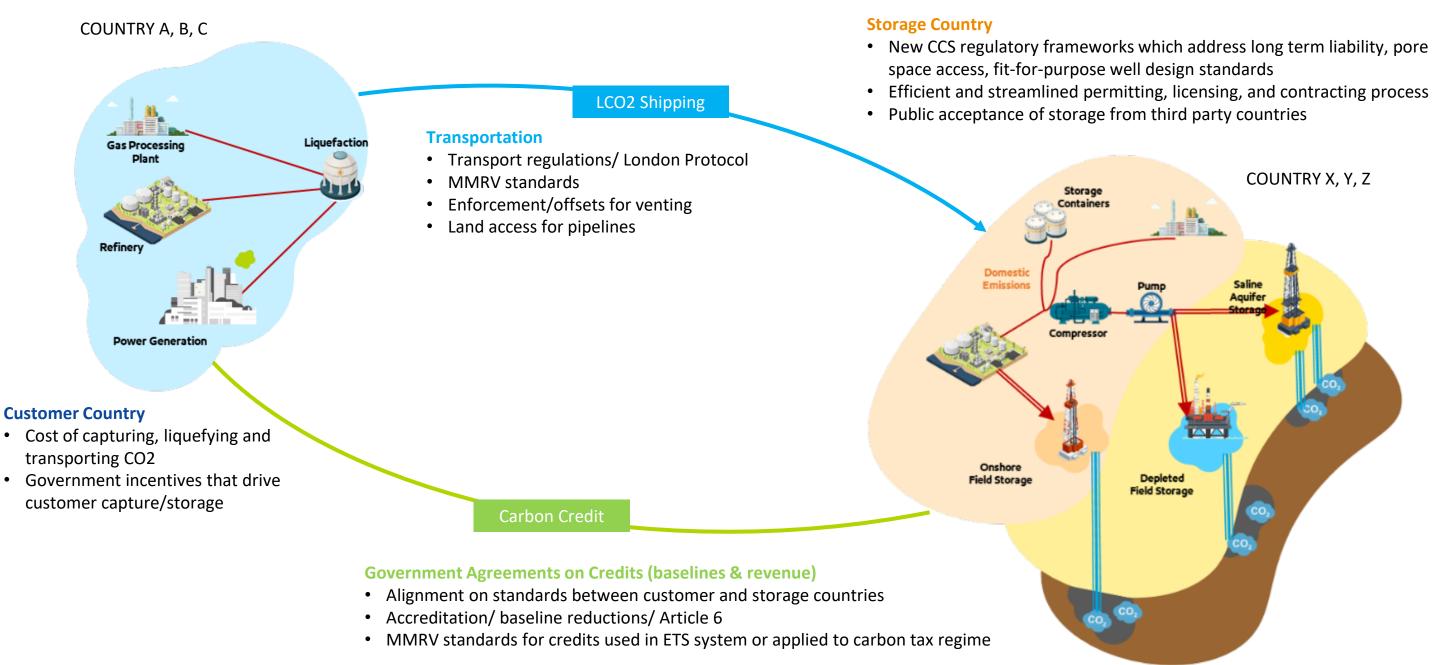


Current ExxonMobil CCS Opportunities (AP) / Exploring potential sources of emissions

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# ASIA PACIFIC CCS CHALLENGES



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# POLICY ENABLERS FOR CCS

Growth Phase	"0 →1"	"1→10"	"10 →100"	
Approx. timeframe	2022-2027	2028 – 2032	2032+	
Strategic vision	Policy to activate			Policy to grow and sustain
	Strategy addressing role of CCS in reducing country's emissions			
Storage Co. Incentive	Grants, Loans			
	Tax Credits, Contrac	ts for Difference, etc.		
	Carbon Price (ETS, carbon tax)			
	Grants, Loans			
	Tax Credits or Inco	entives for Capture		
Ability to Operate	Pore Space (operational requirements, risk allocation and long term liability, fees)			
	Pipelines / Transportation (incl. access to land)			
	Permits for Transportation and Storage (regulatory authority, regulatory capacity, implementing regs, t			
	Public Confidence			

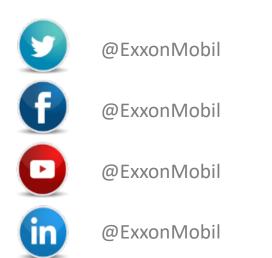
Notes:

- Inter-governmental arrangements may be required to enable cross-border projects (e.g., relating to London Protocol or allocation of carbon reduction credits against country targets and related measurement/reporting methodologies)
- Not all instruments will be used in all jurisdictions -



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