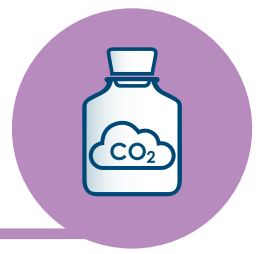
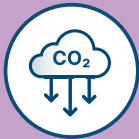


RAPID SCALE UP OF CCUS CAPACITY IN THE 2020S



BY 2030 THE WORLD NEEDS

CO₂ CAPTURE



Annual CO₂ capture up x20, from 40 Mt today to 800 MtCO₂



>300 CCUS facilities in commercial operation, from 30 today

Capture in the 2020s will be mainly in Power, Blue Hydrogen & Fossil Fuel Processing

TRANSPORT & STORAGE



1 GtCO₂/year storage in operation; another 5Gt under development



~100 CCUS industrial hubs operating around the world

Early storage development is a necessary precondition for CO₂ capture investment

INVESTMENT AND R&D



\$70bn/year, up from \$3bn/year today



Support innovation via R&D and industrial scale demonstrations

Strong carbon price and de-risking mechanisms are key to unlocking finance

6 KEY ACTIONS BY GOVERNMENTS, INDUSTRY & FINANCE

| 6 KEY ACTIONS | EXAMPLES | GOVERNMENT | REGULATORS | INDUSTRY | OIL AND GAS FIRMS | FINANCE PLAYERS |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|----------|-------------------|-----------------|
| Overcoming 'green premium' to make CCUS deployment economic | <ul style="list-style-type: none"> Carbon pricing Mandates for low-carbon end products (e.g. cement) Public procurement De-risking mechanisms such as Contracts-for-Difference | | | | | |
| Developing key infrastructure | <ul style="list-style-type: none"> Shared transport pipelines and storage hubs Publicly available geological data Reuse of existing O&G infrastructure Public funding to bring forward 'injection-ready' storage | | | | | |
| Fostering business model and technology innovation | <ul style="list-style-type: none"> Targeted R&D support for new capture technologies New business models such as Carbon Capture as a Service to scale up mature technologies | | | | | |
| Regulating and managing risks | <ul style="list-style-type: none"> Clear delineation of responsibility for CO₂ at each stage of the value chain Counterparty risk mitigation through public guarantees, state backed insurance and coordinated hub development | | | | | |
| Ensuring high capture rates and storage performance | <ul style="list-style-type: none"> Real time monitoring of capture rates Monitoring Transport and Storage for leakage Meaningful penalties for non-compliance | | | | | |
| Building public support for an appropriate role for CCUS | <ul style="list-style-type: none"> Articulating clear strategic, but limited role Ensuring transparency on capture and storage performance | | | | | |