

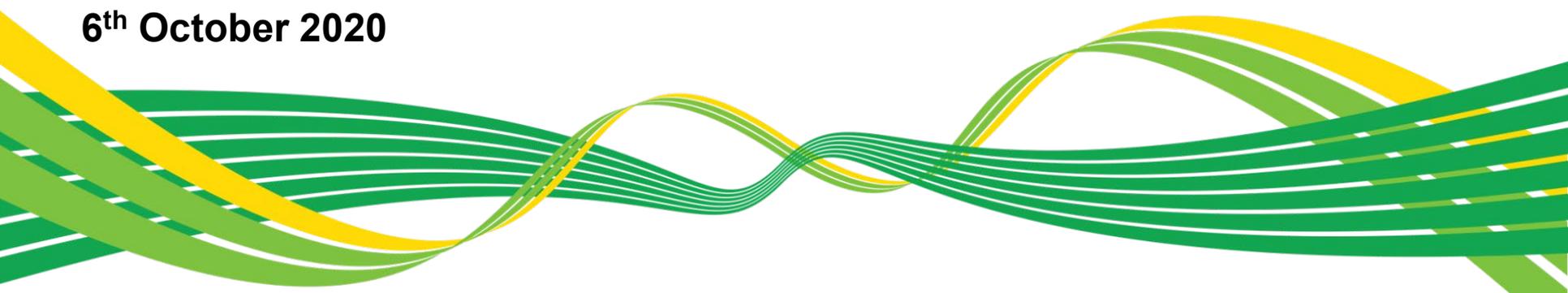


**Enabling Carbon Capture, Usage and Storage**

## **CCUS in BP**

**Liesel Ramnarine: Business Development Director  
BP Indonesia**

**6<sup>th</sup> October 2020**



# BP's strategy and net zero aims



*Net Zero operations*

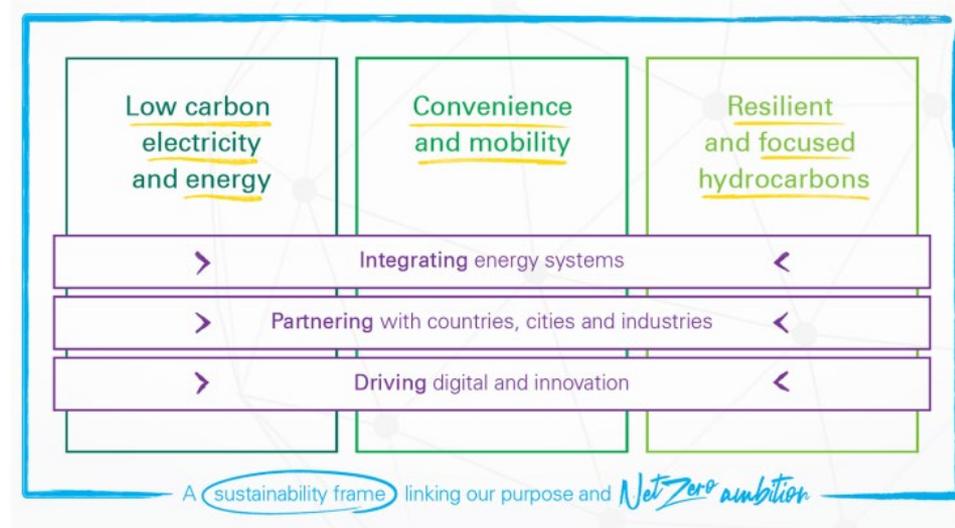
Getting to net zero across our entire operations on an absolute basis by 2050 or sooner.

Getting to net zero on an absolute basis from our upstream production by 2050 or sooner.

*Net Zero oil and gas*

*Halving intensity*

50% reduction in carbon intensity of the products we sell by 2050 or sooner.

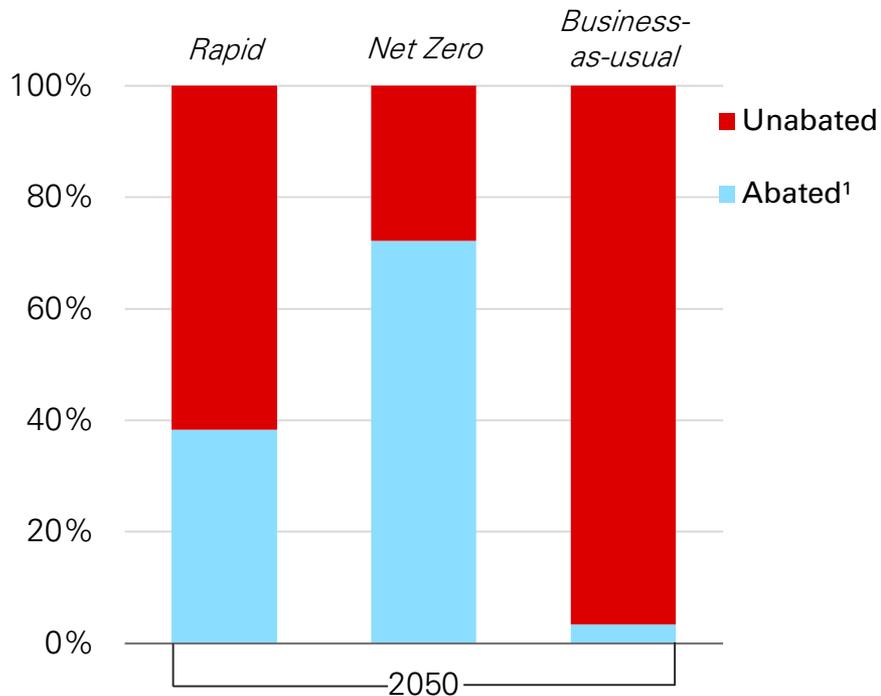


“In hydrogen and CCUS we aim to create a distinctive position, with a 10% share of hydrogen in core markets”

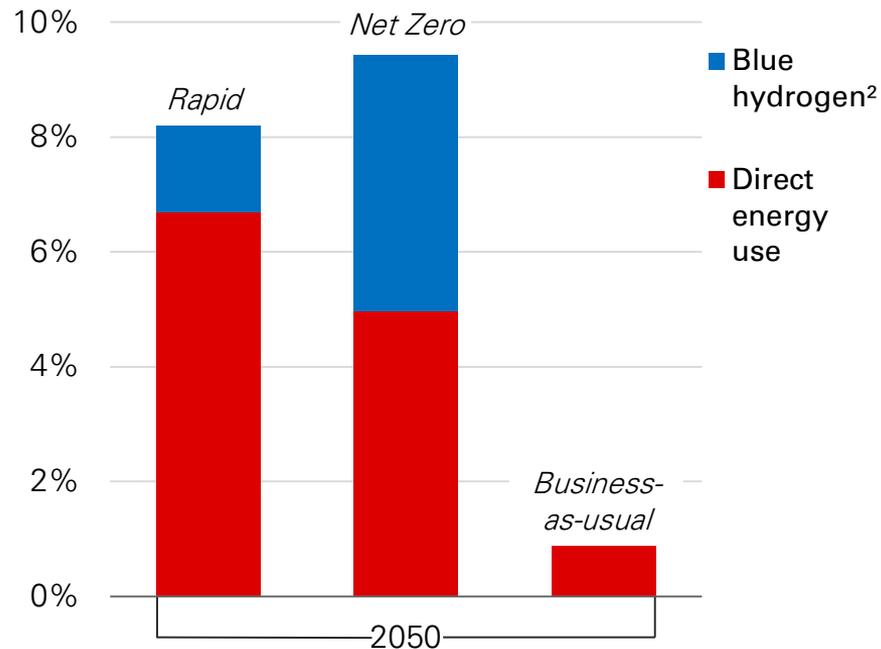


# Natural gas as a source of near-zero carbon energy

## Share of natural gas abated<sup>1</sup> and unabated



## Natural gas with CCUS as a share of primary energy

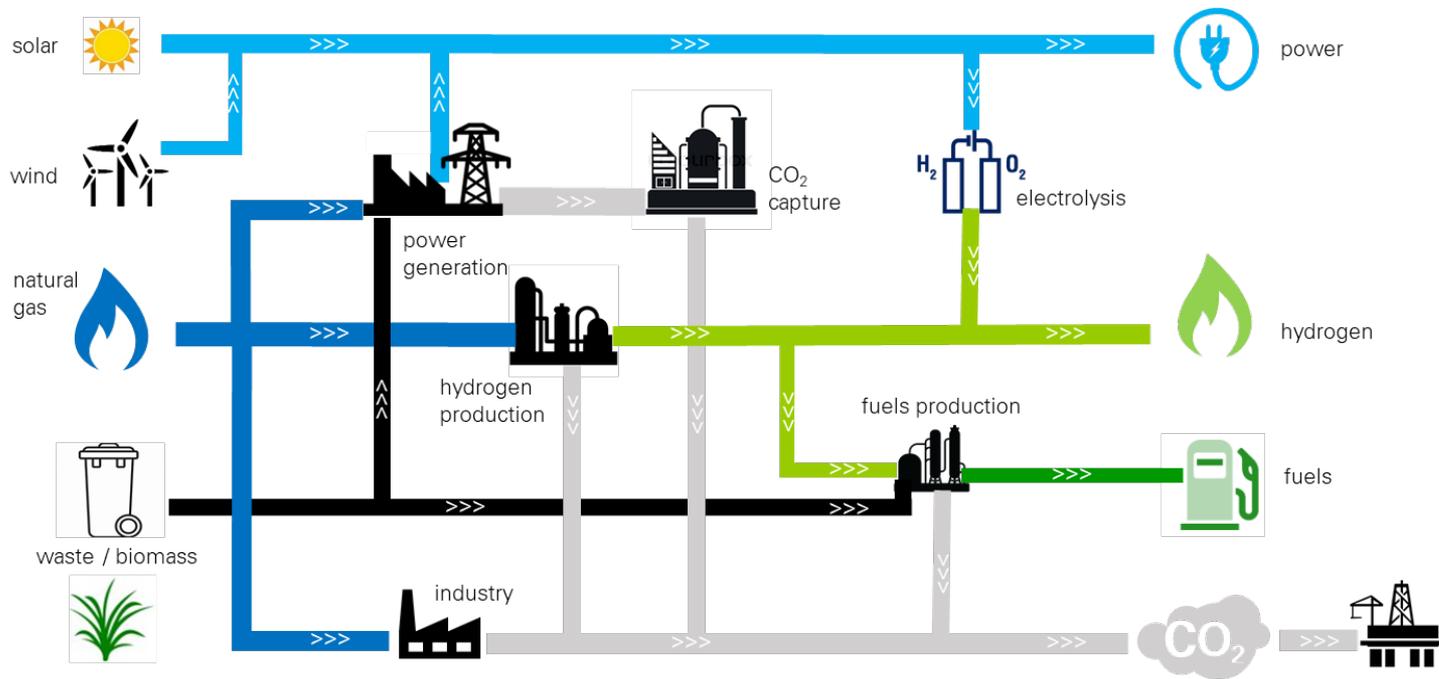


1) Direct use of natural gas with CCUS plus natural gas as input to blue hydrogen

2) Blue hydrogen is extracted from natural gas (or coal), with the carbon dioxide by-product being captured via CCUS.

# A low-carbon energy system

will require the delivery of decarbonised gas and fuels, as well as renewables



Wind and solar will play an increasingly important role in power generation. Combining these with power from gas with CCUS offers a reliable and flexible low-carbon power system

Hydrogen can provide heat to homes and industries, and power trains and ships

Low-carbon liquid fuels can be used in aviation and other transport applications

CCUS enables a low-carbon energy system.

# Net Zero Teesside, UK



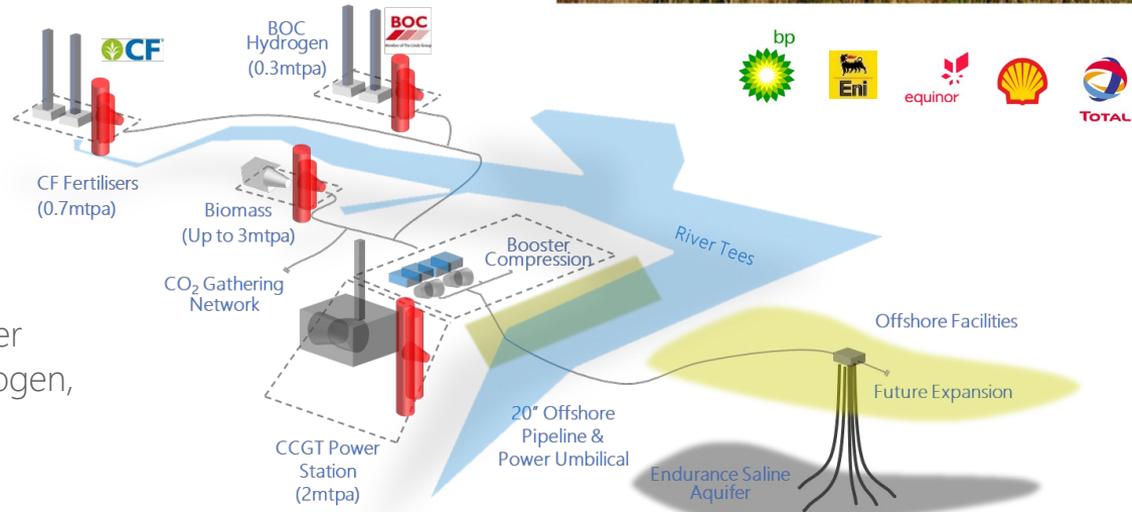
BP (operator), Eni, Equinor, Shell and Total are working together to develop Net Zero Teesside as the UK's first zero-carbon industrial cluster



© Tees Valley Combined Authority

Potential impact by 2030:  
Over 6 mtCO<sub>2</sub>/year

CO<sub>2</sub> sources:  
Gas power, biomass power, fertilizer production, petro-chemicals, hydrogen, CO<sub>2</sub> imports



- Recognition of the **dual challenge** of energy cost and emissions reduction
- Enable the **reduction of emissions to have a value**: Place a price on carbon
- Enable that value to pay for emissions reductions: **transparent and liquid carbon markets**
- Recognising the large scale emissions reduction impact that CCUS can bring: **clear, enabling regulations, education and private public partnerships will be key**
- **Oil and gas industry** has experience, it can support governments and other industries to widely **deploy the commercial structures and technology at scale as a solution** to the dual challenge