



# Low carbon electricity and energy

Dev Sanyal

EVP, gas and low carbon energy





# Cautionary statement

## Forward-looking statements - cautionary statement

In order to utilize the 'safe harbor' provisions of the United States Private Securities Litigation Reform Act of 1995 (the 'PSLRA') and the general doctrine of cautionary statements, bp is providing the following cautionary statement: The discussion in this results announcement contains certain forecasts, projections and forward-looking statements - that is, statements related to future, not past events and circumstances - with respect to the financial condition, results of operations and businesses of bp and certain of the plans and objectives of bp with respect to these items. These statements may generally, but not always, be identified by the use of words such as 'will', 'expects', 'is expected to', 'aims', 'should', 'may', 'objective', 'is likely to', 'intends', 'believes', 'anticipates', 'plans', 'we see', 'focus on' or similar expressions.

In particular, the following, among other statements, are all forward looking in nature: bp's new strategy to focus on low-carbon electricity and energy, including statements regarding its aims to become a leading, global player in low carbon electricity and energy, provide integrated energy offers, generate stable returns and enhance base unlevered project returns from renewables businesses to at least 8% to 10%, develop around 20GW of net renewable generating capacity by 2025 and 50GW by 2030, deliver 350TW hours of traded electricity by 2025 and 500TW hours by 2030, grow its LNG portfolio to 25Mtpa by 2025 and to more than 30Mtpa by 2030, maintain focus on safety and operational reliability, double bioenergy production to 50Kbd by 2025 and to more than 100Kbd by 2030, market 20% of the world's biojet fuel by 2030, increase hydrogen business to 10% share in core markets, deliver 15% reduction in the carbon intensity of its marketed products by 2030, build partnerships with countries, cities and industries in decarbonisation efforts and to amplify value through digital and innovation; plans and expectations regarding the Bunge joint venture, including statements with respect to its aims to export 1.2TW hours of power generated by biofuels in 2020, generate returns of around 15% or higher from bioenergy businesses and quadruple the business by 2030, expectations regarding bp's announced new offshore wind partnership with Equinor, including statements regarding aims to jointly develop up to 4.4GW across four offshore wind projects in the US, participate in future developments in the US and to grow participation internationally in the future including beyond 2030; plans and expectation to drive value through integrated downstream gas, including statements regarding the LNG project pipeline, projects in the port of Acu and Guangdong Dapeng, integration of renewables, gas, bioenergy and hydrogen and the significant role of renewables in bp's business; plans and expectations regarding Lightsource bp's strategy to transform Lightsource bp from being a leading European solar developer to being a global force in solar, including statements with respect to the timing of Project Bighorn; and expectations regarding shifts in energy markets, including the acceleration of electrification, growth of renewables and new opportunities for differentiated customer offers.

By their nature, forward-looking statements involve risk and uncertainty because they relate to events and depend on circumstances that will or may occur in the future and are outside the control of bp. Actual results may differ materially from those expressed in such statements, depending on a variety of factors, including: the extent and duration of the impact of current market conditions including the significant drop in the oil price, the impact of COVID-19, overall global economic and business conditions impacting our business and demand for our products as well as the specific factors identified in the discussions accompanying such forward-looking statements; changes in consumer preferences and societal expectations; the pace of development and adoption of alternative energy solutions; the receipt of relevant third party and/or regulatory approvals; the timing and level of maintenance and/or turnaround activity; the timing and volume of refinery additions and outages; the timing of bringing new fields onstream; the timing, quantum and nature of certain acquisitions and divestments; future levels of industry product supply, demand and pricing, including supply growth in North America; OPEC quota restrictions; PSA and TSC effects; operational and safety problems; potential lapses in product quality; economic and financial market conditions generally or in various countries and regions; political stability and economic growth in relevant areas of the world; changes in laws and governmental regulations; regulatory or legal actions including the types of enforcement action pursued and the nature of remedies sought or imposed; the actions of prosecutors, regulatory authorities and courts; delays in the processes for resolving claims; amounts ultimately payable and timing of payments relating to the Gulf of Mexico oil spill; exchange rate fluctuations; development and use of new technology; recruitment and retention of a skilled workforce; the success or otherwise of partnering; the actions of competitors, trading partners, contractors, subcontractors, creditors, rating agencies and others; our access to future credit resources; business disruption and crisis management; the impact on our reputation of ethical misconduct and non-compliance with regulatory obligations; trading losses; major uninsured losses; decisions by Rosneft's management and board of directors; the actions of contractors; natural disasters and adverse weather conditions; changes in public expectations and other changes to business conditions; wars and acts of terrorism; cyber-attacks or sabotage; and other factors discussed elsewhere in this report, and under "Risk factors" in bp Annual Report and Form 20-F 2019 as filed with the US Securities and Exchange Commission.

September 2020

# Our strategy – an IEC delivering solutions for customers

## Low carbon electricity and energy

- Low carbon electricity
- Integrated gas
- Bio-energy
- Hydrogen and CCUS

## Convenience and mobility

- Advancing growth markets
- Redefining convenience
- Next-gen mobility

## Resilient and focused hydrocarbons

- Continued rigour in safety and operations
- Driving emissions down
- Focused upstream and refining portfolio



Integrating energy systems



Partnering with countries, cities and industries

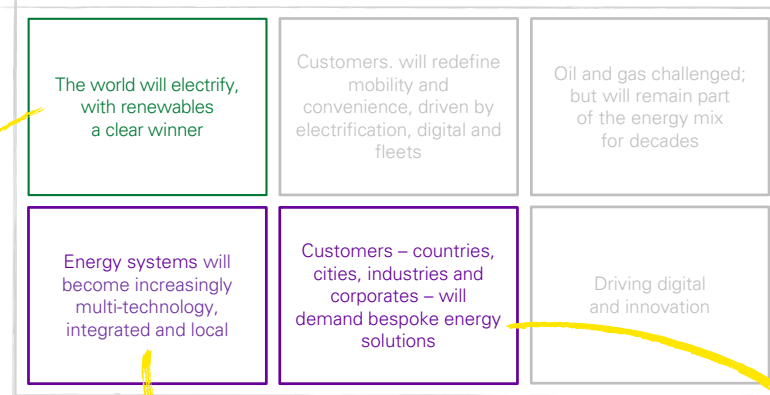


Driving digital and innovation



A sustainability frame linking our purpose and *Net Zero ambition*

# Our beliefs on the energy transition



The world will electrify, with **renewables** a clear winner

**Energy systems** will become increasingly multi-technology, integrated and local

**Customers** – countries, cities, industries and corporates – will demand bespoke energy **solutions**



# Why bp?





# Building from a solid and growing foundation



onshore wind



solar



biopower



offshore wind



biofuels



US biogas



# bp 2030 aims – low carbon electricity and energy

## Low carbon electricity

- 50GW developed renewables<sup>1</sup>
- Position across generation and customers
- 500TWh traded<sup>2</sup>

## Hydrogen and CCUS

- 10% hydrogen share in core markets
- Net Zero Teesside

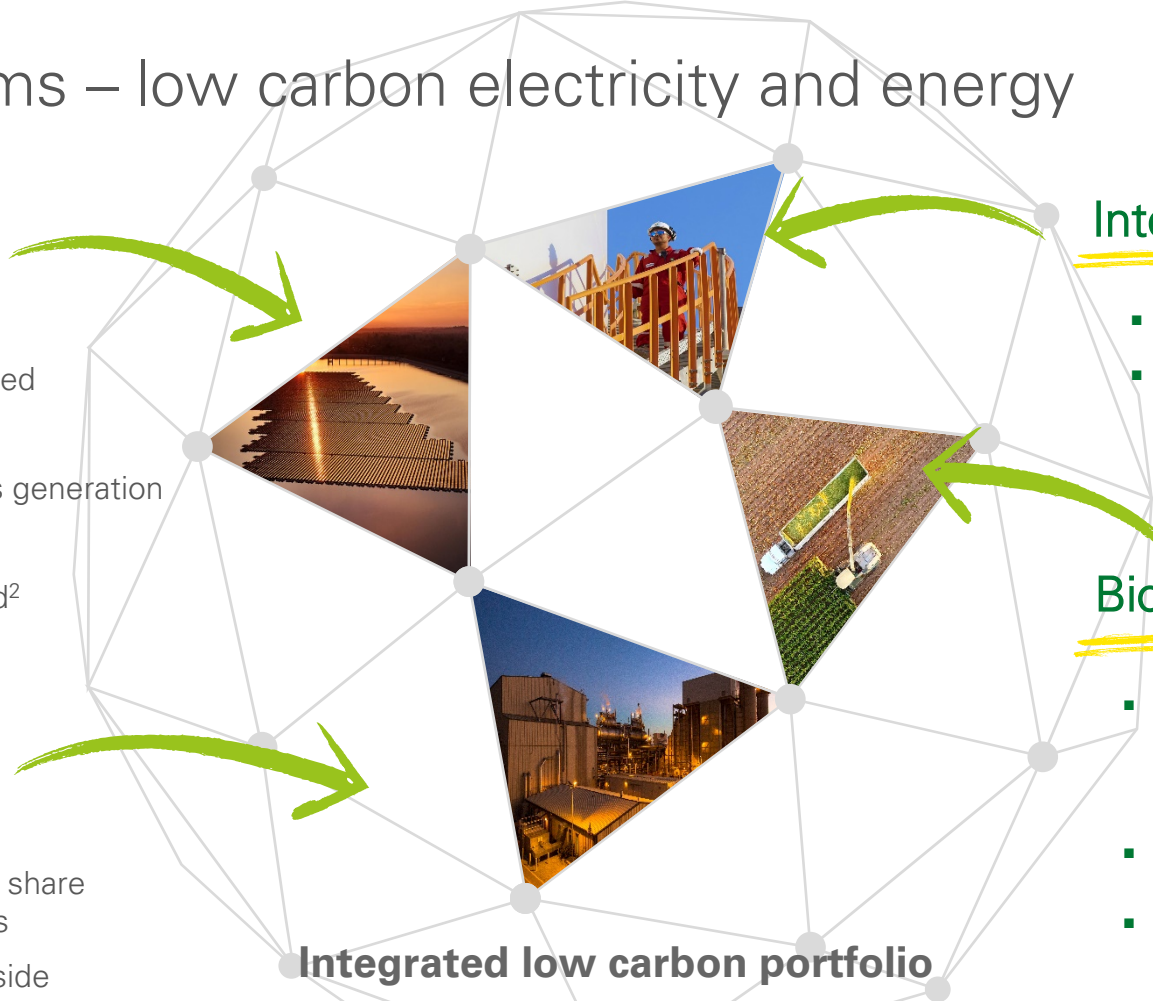
## Integrated gas

- 25Mtpa customer sales
- >30Mtpa LNG portfolio

## Bioenergy

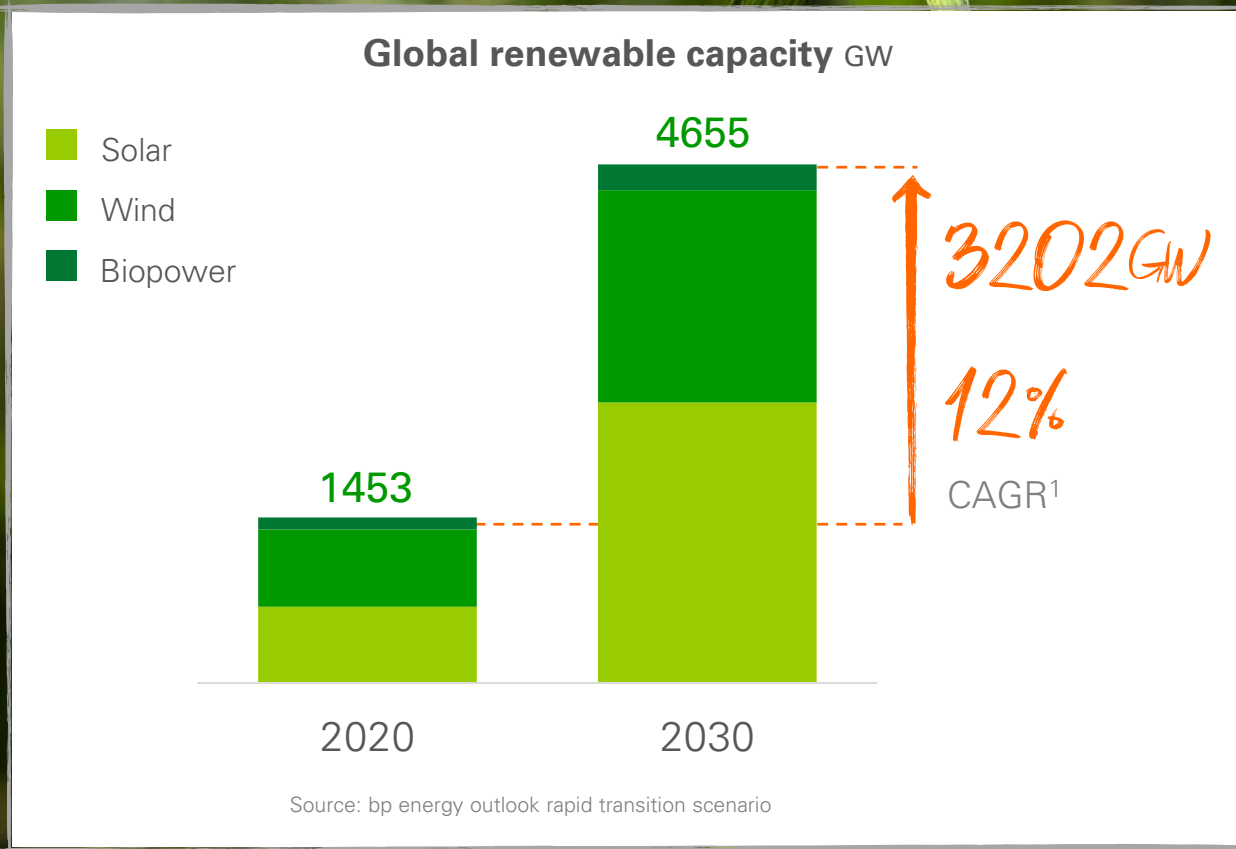
- >100Kbd produced and integrated across value chain
- 20% biojet market share
- Cost advantaged platforms across Brazil

## **Integrated low carbon portfolio**



(1) Developed to FID  
 (2) Traded electricity may include electricity sourced from the grid

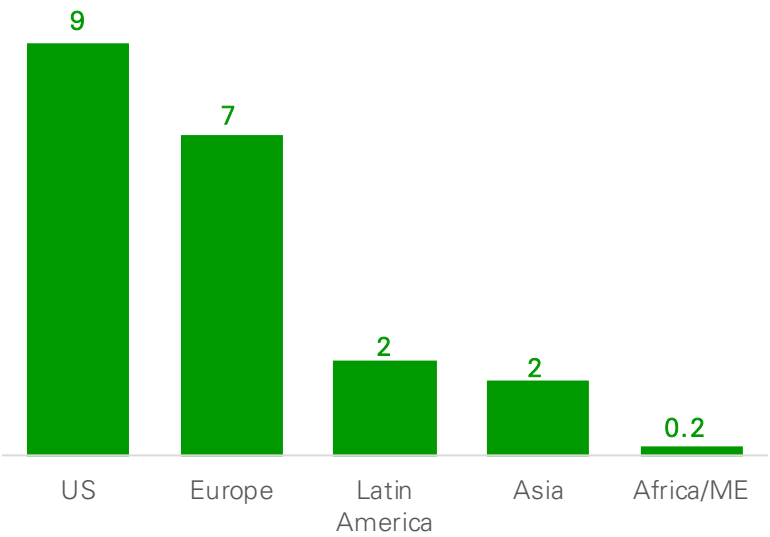
# High-growth markets create opportunities



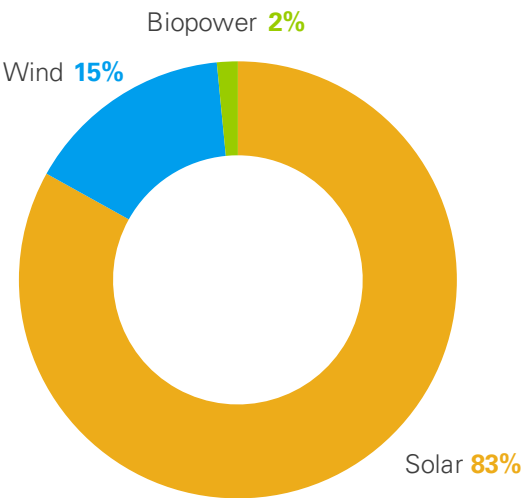
# Renewable growth underpinned by a robust pipeline

Development pipeline<sup>1</sup> GW

By region



By technology



Development pipeline<sup>1</sup>

20 GW

Early stage options<sup>1</sup>

~21 GW

(1) Development pipeline and early stage options shown as gross GW



# Low carbon electricity

## New strategic partnership in offshore wind<sup>1</sup>

*fastest*  
growing renewable  
business

*strategic*  
offshore wind  
partnership

*growth*  
opportunity



From 30GW to  
200GW by 2030

70% fall in LCOE<sup>2</sup>  
in past 10 years



equinor

US East Coast  
projects

4.4GW<sup>3</sup>

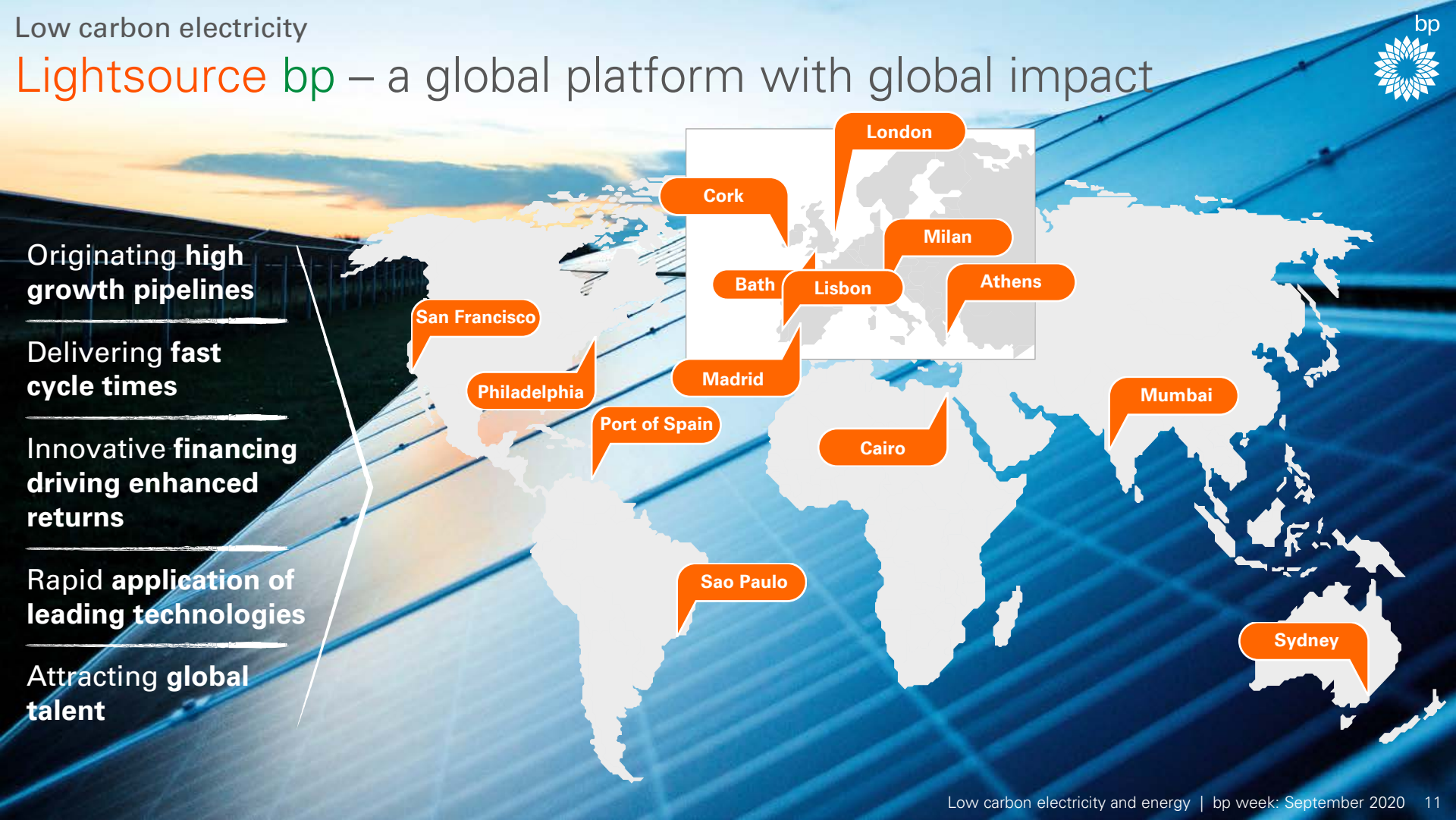
- Further US opportunities
- Global potential

Synergies from scale,  
execution and integration

(1) Subject to customary regulatory and other approval the transaction is expected to close in early 2021

(2) Levelised cost of energy

(3) Gross GW

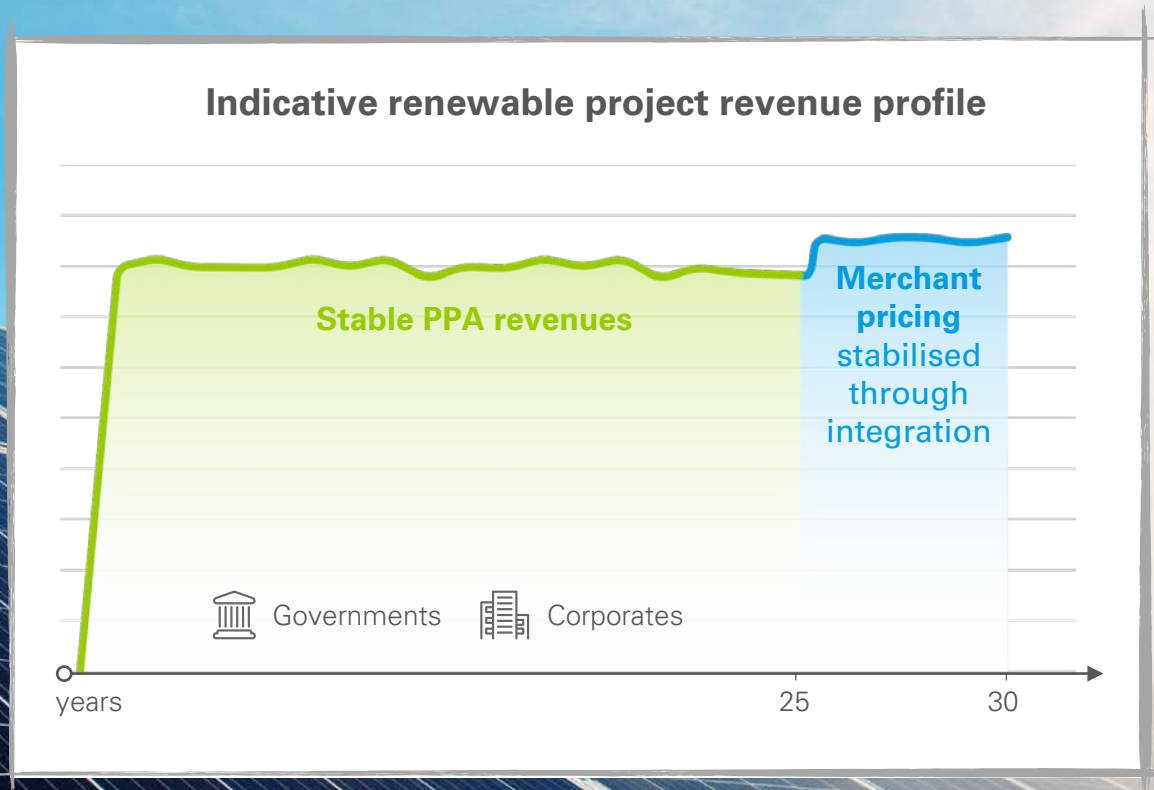


# Lightsource bp – a global platform with global impact

- Originating **high growth pipelines**
- Delivering **fast cycle times**
- Innovative **financing driving enhanced returns**
- Rapid **application of leading technologies**
- Attracting **global talent**

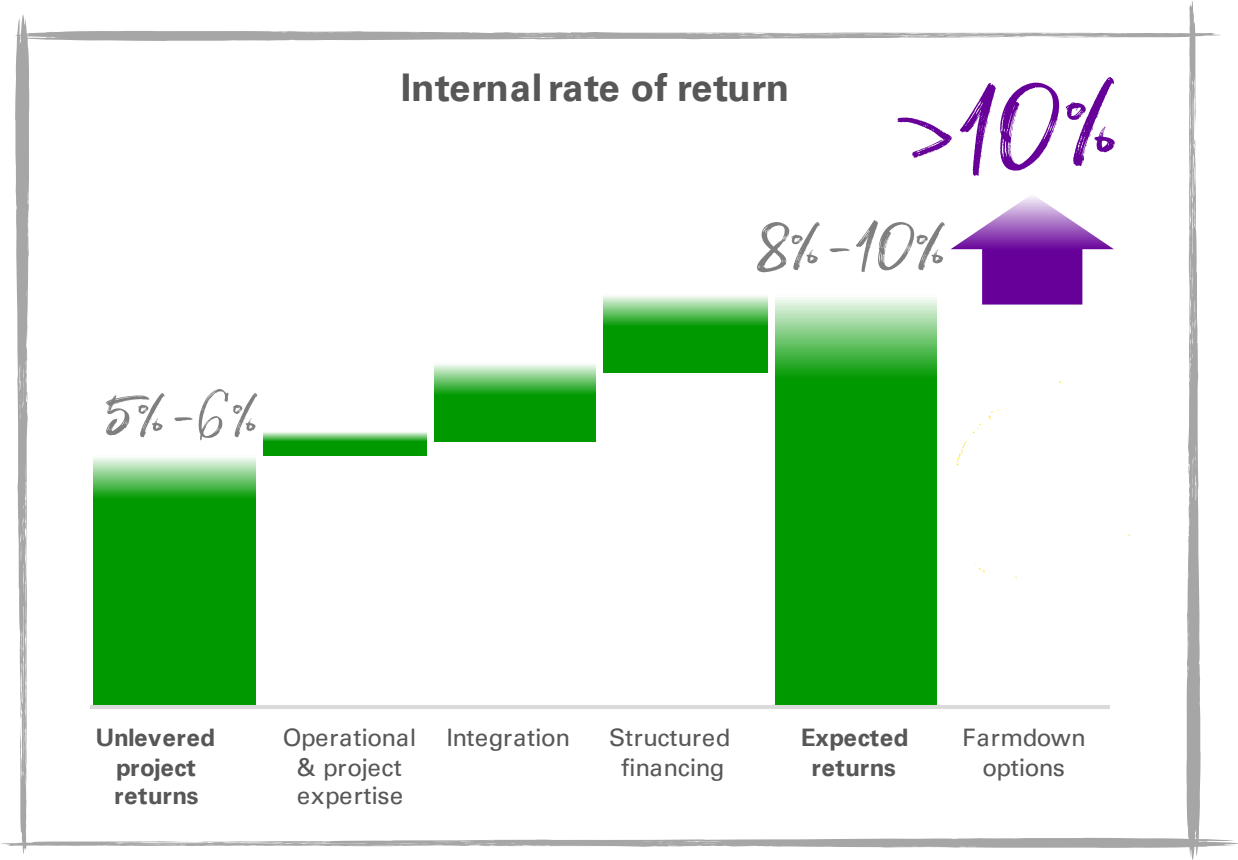


# Renewables generate stable returns





# Stable returns with IEC differentiation



# Integrated gas

## Driving value through integrated downstream gas

Resource  
portfolio

Midstream  
optimisation

Downstream  
customer  
access

- Balance
- Resilience

- Merchant LNG
- Equity LNG
- Trading

- Infrastructure access
- Downstream markets
- Commercial and industrial offers





Integrated gas

Delivering integrated gas solutions to customers



Brazil

Gas Natural Açú



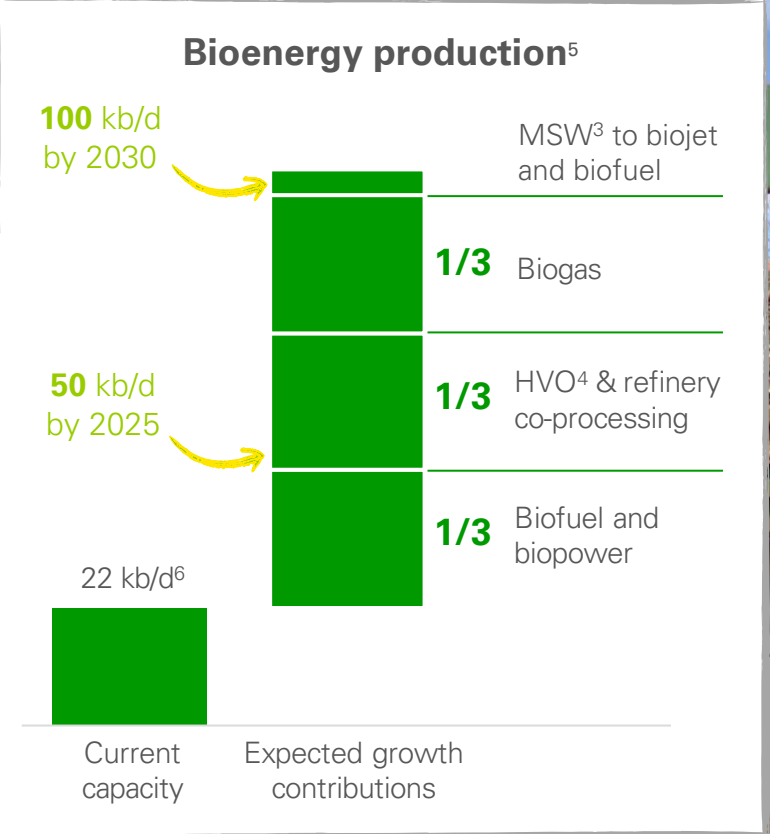
China

Guangdong Dapeng LNG



# Four bioenergy businesses drive growth

Biofuels & biopower	<ul style="list-style-type: none"> <li>• Production <b>40 kb/d</b><sup>1</sup></li> <li>• Biopower <b>1.2 TWh</b><sup>1</sup></li> </ul>
Biogas	<ul style="list-style-type: none"> <li>• <b>Largest</b> US biogas supplier<sup>2</sup></li> </ul>
Biojet	<ul style="list-style-type: none"> <li>• Supply at <b>11</b> airports in <b>4</b> countries</li> <li>• Fulcrum MSW<sup>3</sup> to biojet partnership</li> </ul>
HVO <sup>4</sup> & refinery co-processing	<ul style="list-style-type: none"> <li>• <b>6 kb/d</b><sup>5</sup></li> <li>• <b>5</b> refineries</li> </ul>



(1) bp bunge gross ethanol equivalent production capacity and gross biopower export; (2) Largest biogas supplier to the transportation sector; (3) Municipal solid waste; (4) Hydrogenated vegetable oil; (5) bp net; (6) Includes bp's 2019 net equity ethanol equivalent production for sugarcane ethanol & biopower production and bp's 2019 refining bio co-processing production

Low carbon electricity and energy | bp week: September 2020 | 16



# Clean hydrogen and CCUS

## Building momentum in clean hydrogen

Using our  
*existing capabilities*

- **0.6m tonnes** hydrogen used in our operations
- Technology
- Partnerships

We are accessing  
*new markets*

- Power
- Industry
- Transport

Guided by  
*our aims*

- **10%** of clean hydrogen market<sup>1</sup> by 2030





# Executing within a disciplined financial framework

*industrialisation*



Building scale

*innovation  
& digital*



Leveraging technology

*integration*



Optimising value chains



# Low carbon electricity and energy – disciplined growth



Developed  
renewables<sup>1</sup> (GW)

**2.5** ..... **20** ..... **50**

Traded electricity<sup>2</sup> (TWh)

**250** ..... **350** ..... **500**

LNG portfolio (Mtpa)

**14.9** ..... **25** ..... **30**

Bioenergy<sup>3</sup> (Kbd)

**22<sup>1</sup>** ..... **50** ..... **>100**

(1) Developed to FID

(2) Traded electricity may include electricity sourced from the grid

(3) Includes bp's 2019 net equity ethanol equivalent production for sugarcane ethanol & biopower production and bp's 2019 refining bio co-processing production

# Low carbon electricity and energy

- High growth markets create opportunities
- Strong pipeline of identified projects
- Confidence in 8 – 10% stable returns
- Skills and capabilities to execute