

## Advancing the energy transition

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## Agenda

- Energy megatrends
- BP's track record
- BP's strategy



The world's demand for energy continues to grow, but the market is undergoing significant change. Demand growth is now being driven almost entirely by rising prosperity in emerging markets such as China and India, and we are seeing a shift in both energy supply and demand towards lower carbon. At BP we are adapting and growing our business to meet these challenges and play a leading role in advancing the energy transition.



## Energy megatrends

### Energy as a driver of economic growth





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## A growing global economy requires more energy



#### Energy consumption by region





### Gradual transition of the fuel mix

Primary energy consumption by fuel

Shares of primary energy



\*Renewables includes wind, solar, geothermal, biomass, and biofuels.



# Technology is flattening the cost of oil and gas supply





## Oil demand from emerging economies



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# Oil demand is likely to remain high in medium-term



Global oil demand projections

## Estimates of technically recoverable resources and cumulative oil demand



Source: BP 2017 Energy Outlook to 2035

Gas grows, with supply driven by US shale



Gas supply growth 2015-2035



#### Gas consumption by sector



## Renewable energy is growing rapidly



Primary energy - base case Future energy growth of +32%, 1.3% p.a. EJ 800 Renewables\* Hydro Nuclear Coal Gas Oil 400 0 1965 1975 1985 1995 2005 2015 2025 2035

\*Renewables includes wind, solar, geothermal, biomass, and biofuels

Source: BP 2017 Energy Outlook 2035; IEA – World Energy Outlook 2016: New Policies Scenario

#### Share of renewables in 2035



The impact of technology is being observed across the energy system and it will be transformational



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## Megatrends summary

Global energy system	Energy transitions take time, but will be accelerated by climate policy and regulation	
	Oil supply is abundant and demand will peak	Ð
	Gas supply is globalising, with HH anchoring the price	O C I I I I I I I I I I I I I I I I I I
Technology	Oil and gas supplies are abundant	
	Trend towards electrification and advanced mobility will continue	€₽ €₽
	Power will be increasingly sourced renewably	$\blacklozenge$
Society	The demographics of emerging economies and the demands of millenials are changing consumption and work patterns	





## Our purpose and strategic priorities

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Heat, light and mobility solutions for a changing world Shifting to gas and advantaged oil in the upstream

Market led growth in the downstream

Venturing and low carbon across multiple fronts

Modernising the whole group

## New Business Models

- New participation models: venturing and low carbon
- Building on existing core businesses
- Medium to long-term growth opportunities



## Advocacy and actions







# Energy quiz!

## Carbon emissions

- 1. Return flight to Barcelona
- 2. 100km hybrid estate ('17 model)
- 3. 1 cycle of tumble dryer
- 4. 100km small car ('97 model)
- 5. 1hr in the shower
- 6. 100km 2 stroke scooter ('97 model)

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Rank these typical activities in Order of Highest to Lowest carbon equivalent intensity?

## Carbon emissions (equivalent)



1. Return flight to Barcelona <sup>1</sup>	Rank 1	со₂/е <mark>220kg</mark>
2. 100km - hybrid estate ('17 model) <sup>2</sup>	5	8kg
3. 1 cycle of tumble dryer <sup>3</sup>	6	2kg
4. 100km - small car ('97 model) <sup>4</sup>	2	17kg
5. 1hr in the shower <sup>5</sup>	3	12kg
6. 100km - 2 stroke scooter ('97 model) <sup>6</sup>	4	11kg

Data source: 1. Natural capital partners 2. UK gov 3. Manufacturers 4. UK gov 5. Essex & Sussex Water 6. UK gov



## Thank you!