BRAZILIAN CHAMBER
OF COMMERCE IN GREAT BRITAIN

Department for
Business & Trade

ALLEN & OVERY

Hydrogen in Brazil

1 March 2024

bp

The role of a company & hydrogen in the energy transition

From IOC to IEC

Growing the value of bp

bp in Brazil today

Brazil hosts a broad number of bp business

- Present in Brazil for more than 50 years
- Oil & Gas exploration & production
- Castrol lubricants
- Airbp
- LNG
- GNA, the largest gas-to-power complex in Latin America (Porto do Açú)
- bpbunge 11 plants producing 1.5bn litres of bioethanol and 1.6TWh biopower
- Opla fuels storage & logistics
- Lsbp 4GW Solar pipeline in Brazil
- Trading & Shipping power, refined products

Country plays

Air bp

Present in 40 airports

22% market share

1.2bn litres per annum

2nd largest in Brazil

Castrol

6% automotive market share, 30% in Marine

~90% in subsea (sole Petrobras supplier of subsea control fluids)

35k purchasing customers

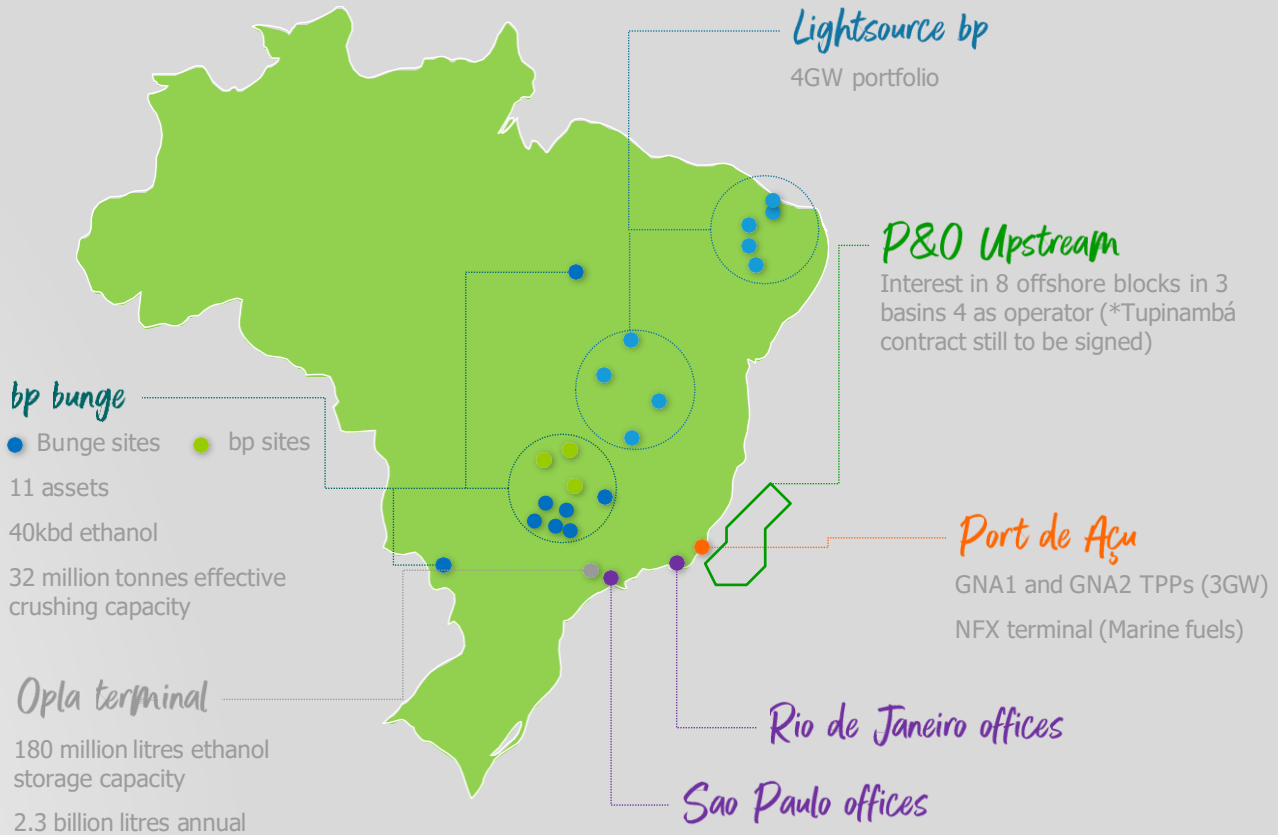
21.4M litres

T&S

Oil, gasoline, diesel, ethanol, naphta - 6Mboe

bpCE – power trading

Low carbon trading - NCS




We are committed to bringing
Green & blue hydrogen
to the world.
Hydrogen will play a central role in enabling our future as an integrated energy company. We have the experience, expertise and ambition to make this happen.
bp

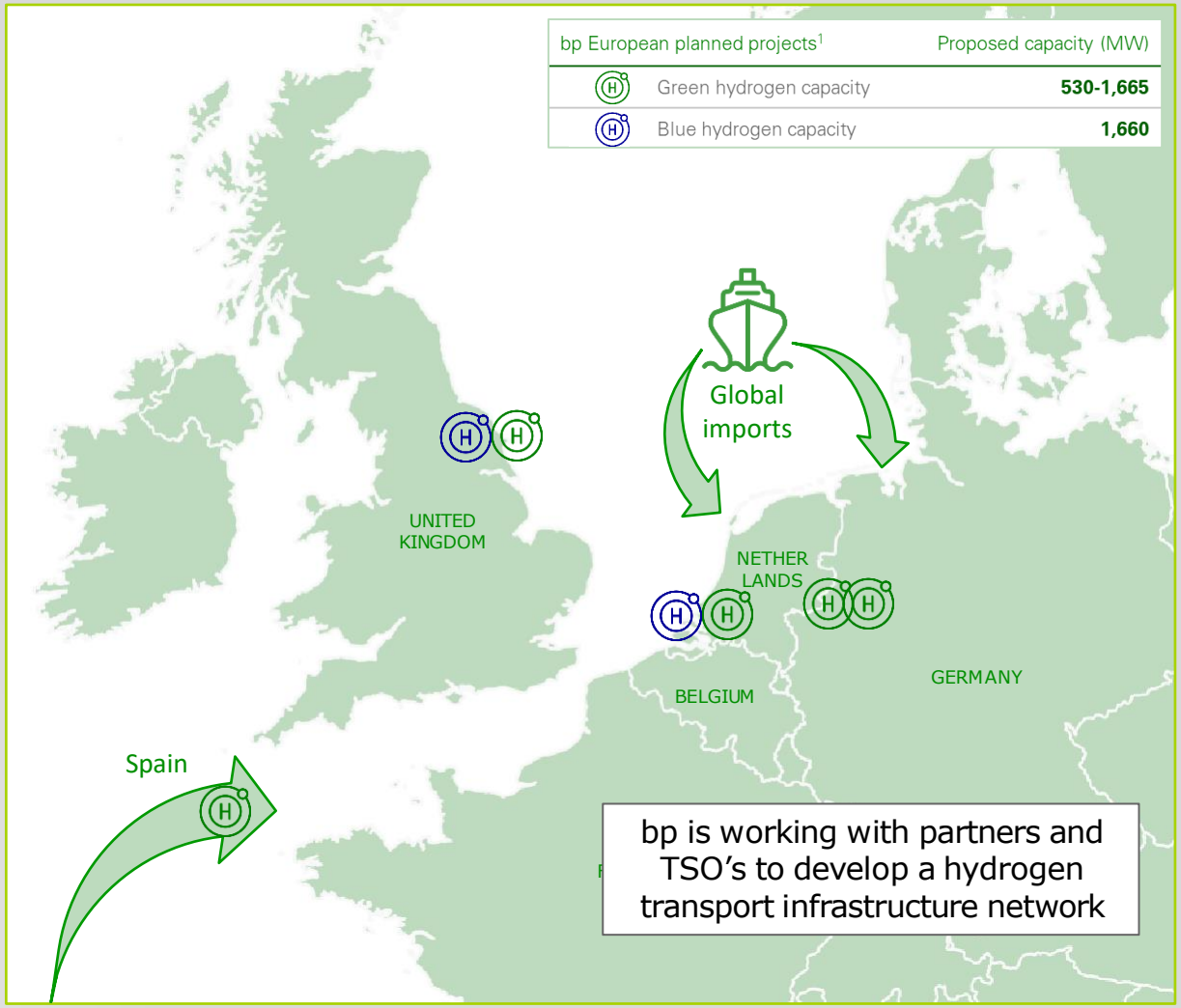
bp potential hydrogen projects

Global project development pipeline

G&LCE

bp's strategy will support the European H_2 industry

- bp is advancing its European hydrogen projects, with an announced capacity of >3 GW*
- This is complimented by new supply projects currently in development in advantaged locations
- bp's pan-European regulatory and advocacy team is working with policymakers and regulators to develop the hydrogen economy.
- Identification of industrial partners is in progress, including joint ventures with customers
- These projects will help support our aim to be a leader in hydrogen and rapidly scale up our presence worldwide



Indicative capacities accurate as of November 2022

G&LCE

*Capacity represents total gross project capacity, including JV partnerships

Valencia Energy Hub & Castellón refinery

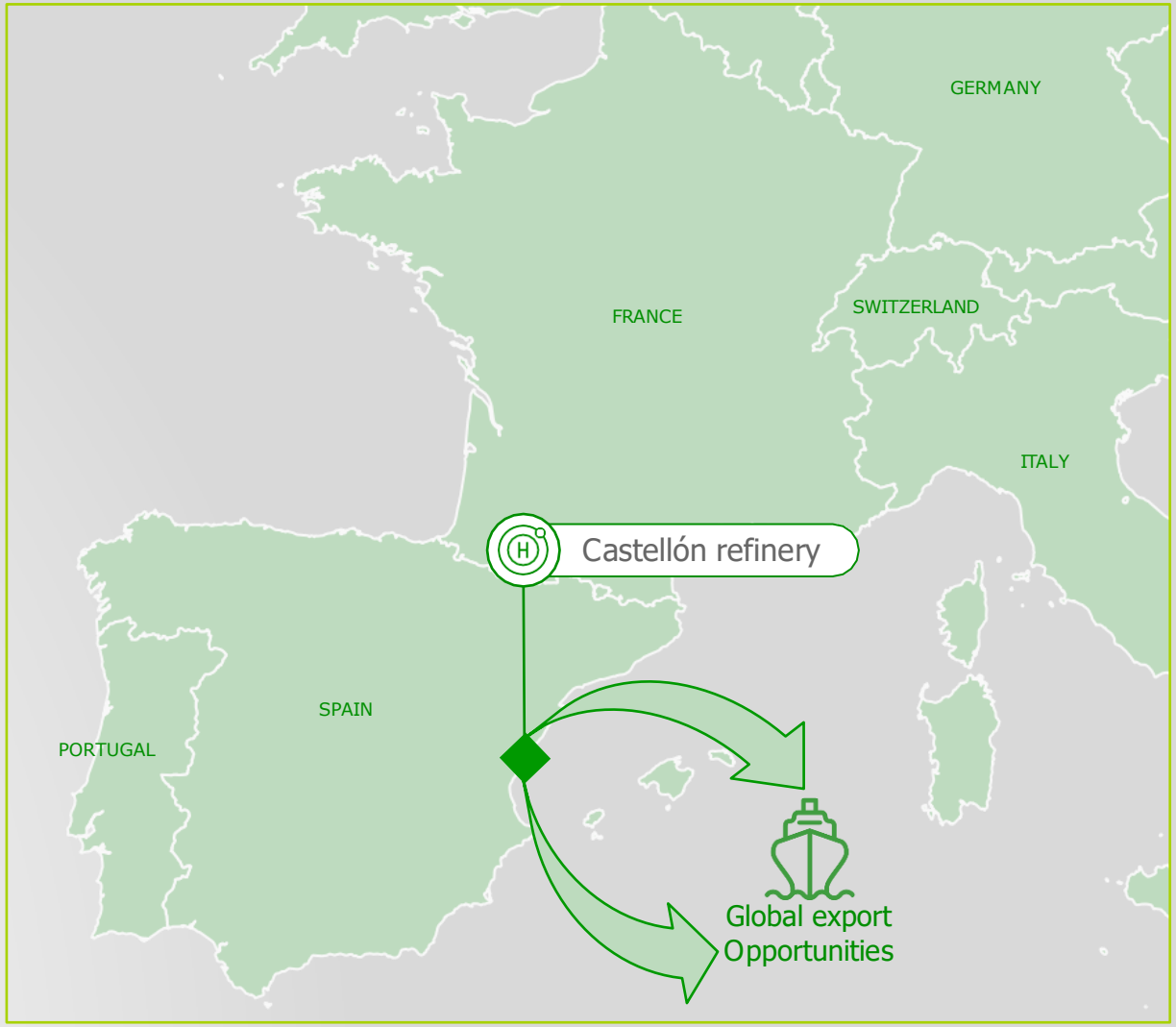
- Green Hydrogen
- The largest green hydrogen generation project at a refinery in Spain
- 25 MW by 2025, with later phased capacity increases
- Aim: To replace current grey hydrogen production at the refinery
- Could reduce emissions by up to 24 ktpa

Partners

IBERDROLA

◆ Green hydrogen project

◆ Blue hydrogen project



Indicative capacities accurate as of November 2022

G&LCE


bp
bp
MASOL
Iberia Biofuel
IBERDROLA
bp
UBE
bp
gh2
project plot
bp
NIPPON
GASES
SARPI
VEOLIA
exolum
REPSOL
BUTANO

bp Castellon – Valencia, Spain

Integrated Energy Hub

Refinería bp Castellón

El hidrógeno verde se usará para descarbonizar las operaciones de la refinería.

Clúster cerámico

Hidrógeno verde suministrado a más de dos asociaciones cerámicas por tubería desde la refinería de bp en Castellón.

ANFFECC ASCER

Hidrógeno verde

IBERDROLA

Capacidad de producción en colaboración con Iberdrola.

Castellón

CIE

Combustible de aviación sostenible

Combustible de aviación sostenible (SAF) y tecnologías "Waste to fuel"

Transporte público

Suministro de hidrógeno a las flotas de autobuses públicos para ayudar a descarbonizar la ciudad de Valencia.

GENERALITAT VALENCIANA EMT

Valencia

Energía renovable

IBERDROLA lightsource bp

Crecimiento de la oferta de energía solar y eólica en colaboración con Iberdrola y LSbp.

Aeropuerto de Valencia + aviación

Descarbonización de las operaciones del aeropuerto de Valencia. Aumento del suministro de SAF a las compañías aereas.

aena

Puerto de Valencia

Proporcionar una serie de soluciones bajas en emisiones de carbono para ayudar a descarbonizar las operaciones del puerto.

Exportación

Exportación de hidrógeno verde y SAF a los países europeos mediterráneos.

Centros de movilidad con bajas emisiones de carbono

Proporcionar soluciones de bp con bajas emisiones de carbono para la movilidad y así ayudar a descarbonizar las flotas de empresas privadas por toda la Comunidad Valenciana.

Ford CEMEX

Transporte marítimo

Suministro de combustibles alternativos y soluciones con bajas emisiones de carbono para el sector marítimo.

MAERSK

G&LCE

Kwinana hydrogen hub

- Green Hydrogen
- 75 MW of green hydrogen
- Decarbonisation of hard to abate industrial sector emissions
- Leveraging bp's ex-refinery site, ideal industrial hub location: significant land availability, hydrogen backbone, electricity networks, transport infrastructure
- Key off-takers:
  - bp's renewable fuels production facility at Kwinana (currently in pre FEED)
  - Foundation industrial demand in Kwinana Industrial Area, incl. ammonia
  - Platform for mobility trials
- bp's unique dual role: supplier & foundation off-taker → initial scale
- Export of ammonia: import/export facilities for product & feedstock

Partners

Australian Government

Green Investment Group

◆ Green hydrogen project

◆ Blue hydrogen project

Indicative capacities accurate as of November 2022

Geraldton green hydrogen feasibility study

- Green Hydrogen
- Feasibility study into export-scale renewable hydrogen production
- **Funded**: Australian Renewable Energy Agency (ARENA)
- Considering a pilot-scale 20,000 tonnes p.a. green ammonia plant selling into domestic markets
- **Aim**: a 1,000,000 tonnes p.a. (1.5 GW capacity), export-oriented green ammonia plant
- Well placed due to Western Australia's vast solar and wind resources

Partners

ARENA Australian Government Australian Renewable Energy Agency

◆ Green hydrogen project

◆ Blue hydrogen project

Indicative capacities accurate as of November 2022

AREH: Australian Renewables Energy Hub

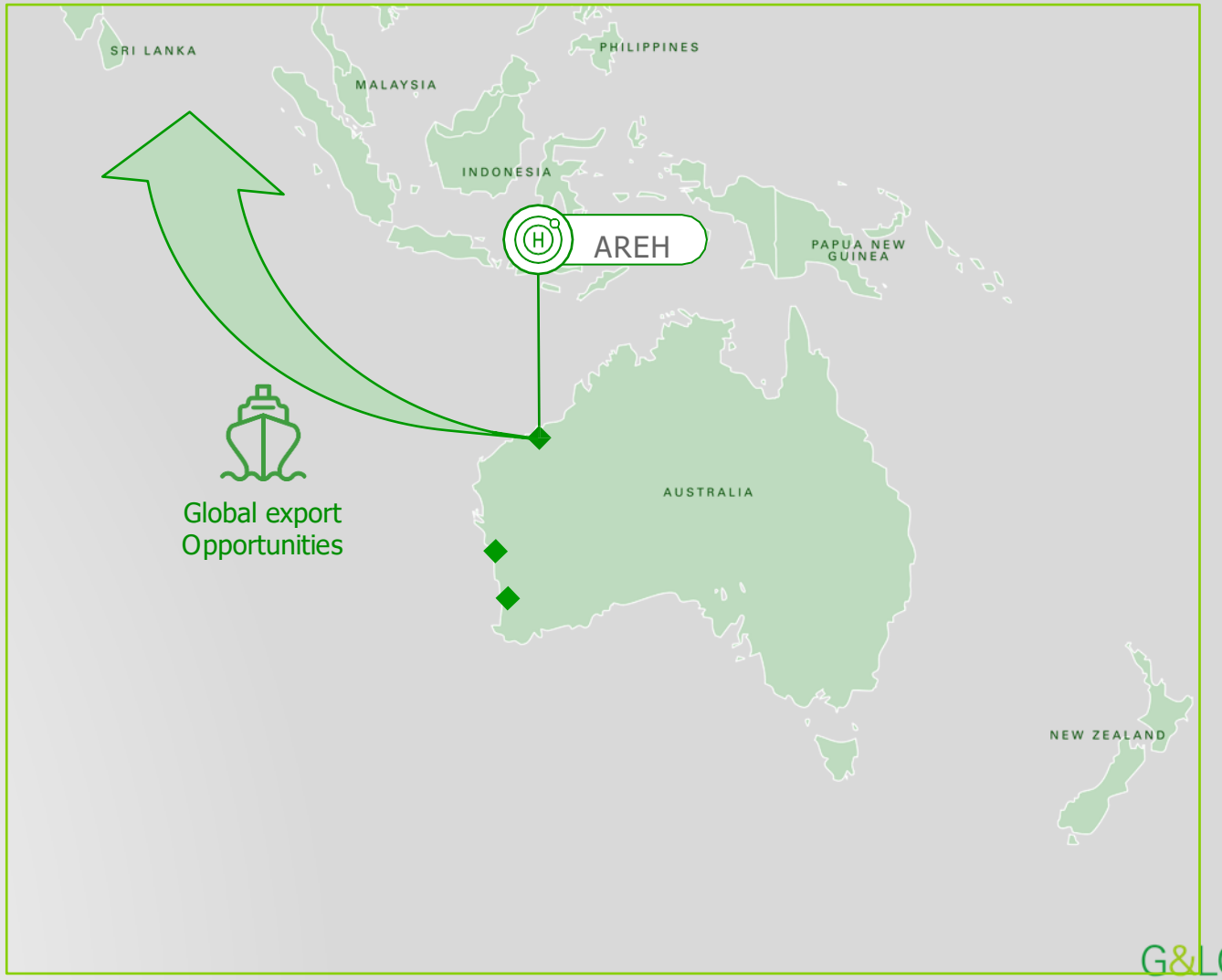
- Green Hydrogen
- bp has an operatorship and 40.5% stake
- Abundant solar & wind resources with consistent output
- Supply renewable power to local customers in the largest mining region in the world
- Significant export opportunities for green hydrogen & green ammonia
- Aim: 26 GW wind & Solar capacity, 1.6 M tonnes of green hydrogen production or 9 M tonnes of green ammonia p.a.

Partners

InterContinental Energy · CWP Global · Macquarie Green Investment Group

◆ Green hydrogen project

◆ Blue hydrogen project



Indicative capacities accurate as of November 2022

Thank you

G&LCE
gas & low carbon energy