



Base and transformation

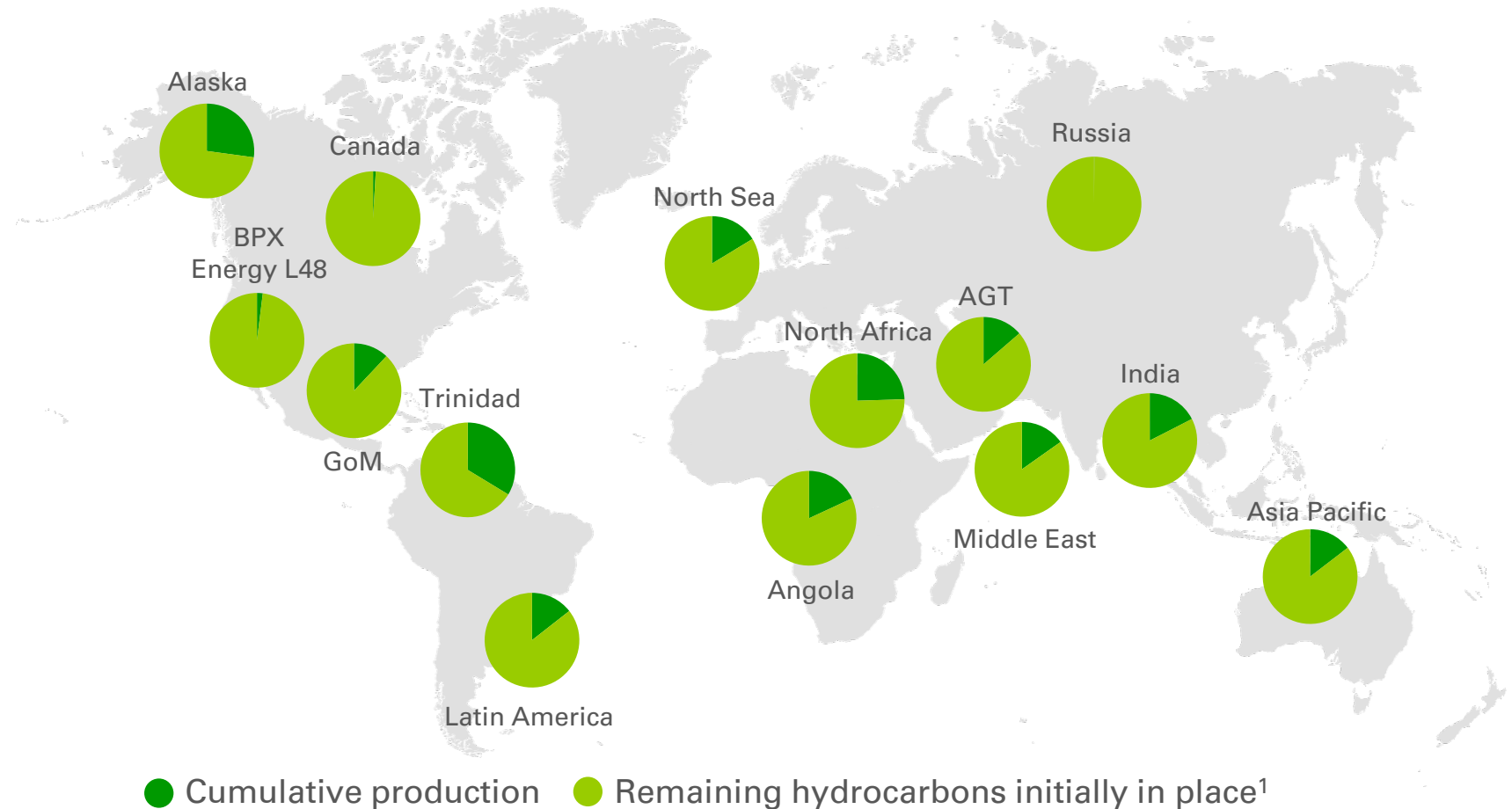
Gordon Birrell
Upstream COO Production,
Transformation and Carbon

Leigh-Ann Russell
Head of Upstream Procurement
and Supply Chain Management

Ian Cavanagh
Head of Upstream Transformation

Maximising the value of the base

- Optimising base decline
- Rigorously managing cash costs
- Enabled by our transformation agenda



**~2.4mmboed base
production^{2 3}**

**<3% 2013-2018
managed base decline²**

**~\$7.2/boe unit
production costs²**

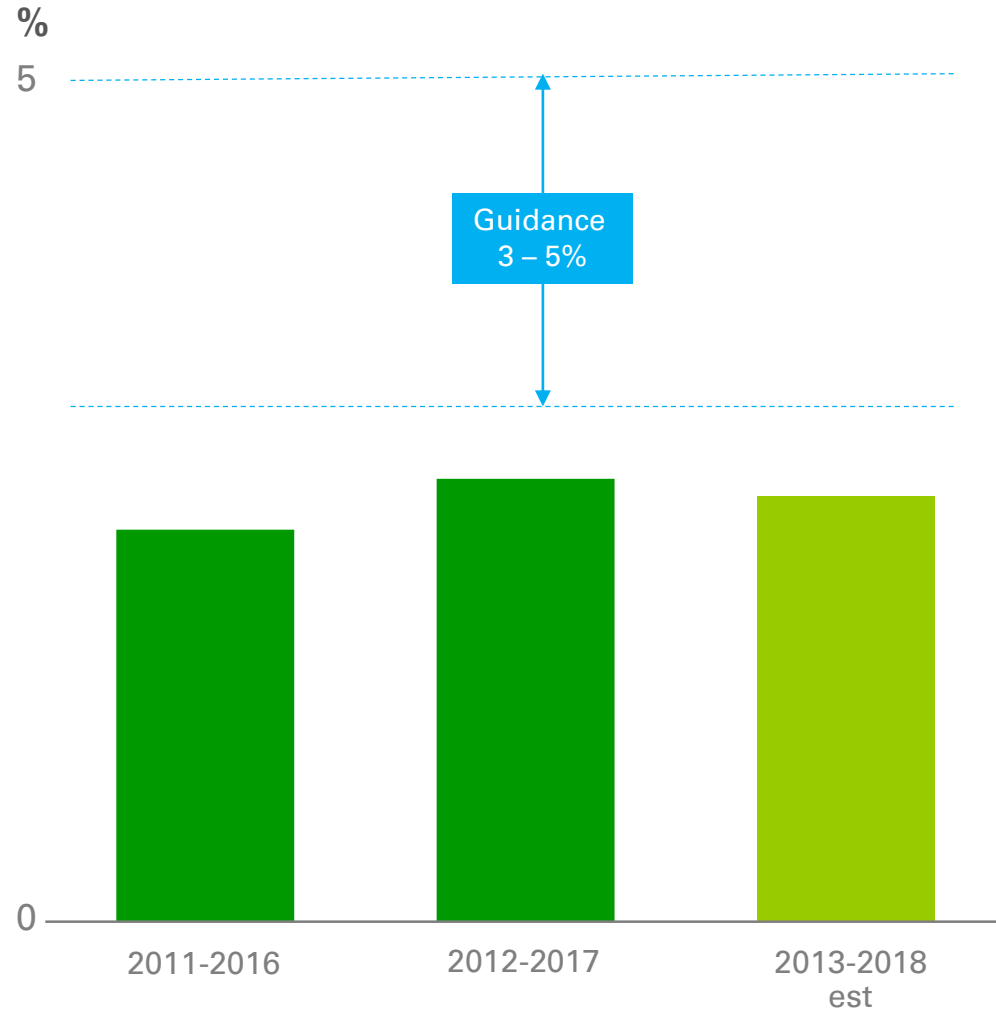
(1) Upstream (excludes Rosneft and regions not currently producing). Year-end 2017 estimate, updated for significant movements in 2018

(2) 2018 estimate

(3) Includes BPX Energy; excludes major projects starting up in 2018. Total 2018 production estimate is ~2.5mmboed

Optimising base decline

Managed base decline¹



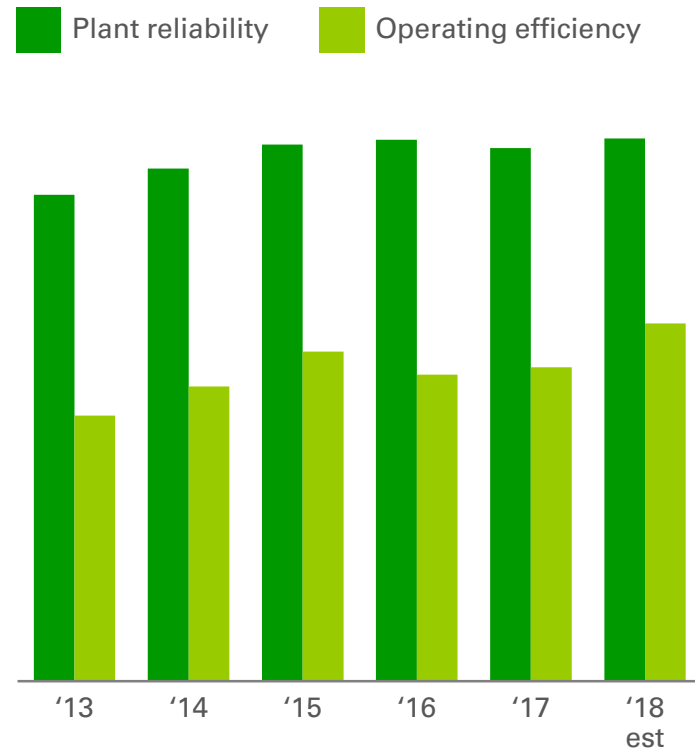
- Managed base decline performance achieved through:
 - Improving operating efficiency
 - Strong reservoir management
 - System modelling and optimisation
 - Improving wedge delivery
- Base decline guidance now 3-5% excluding BPX Energy Lower 48

(1) 5 year compound annual decline rate

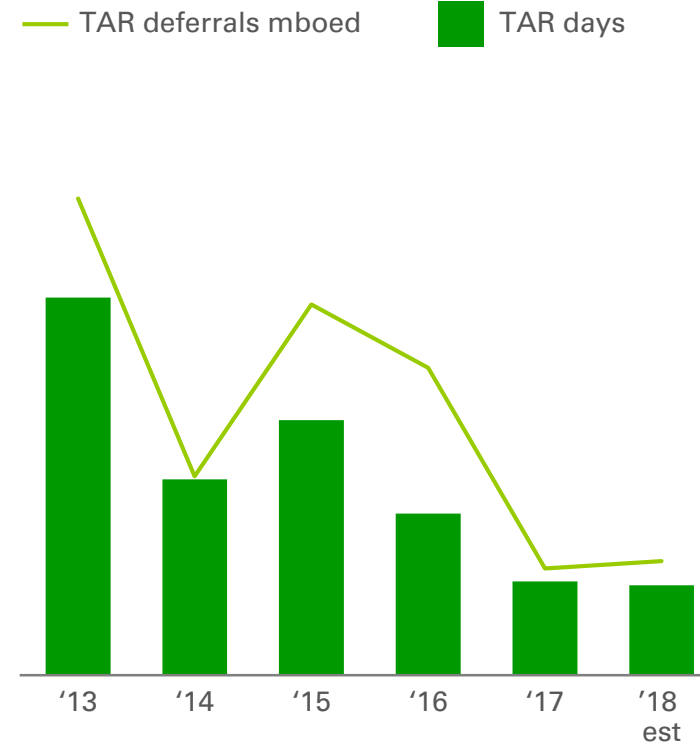
Optimising base decline – improving operating efficiency

Operating efficiency and plant reliability

Annual %

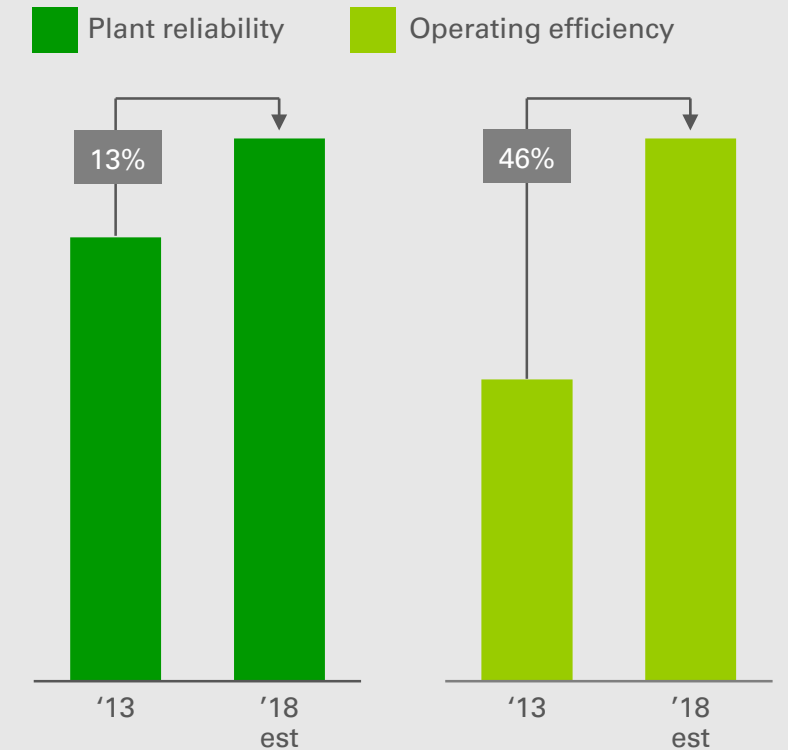


TARs¹ – days and deferrals



Improving trend in mature region

North Sea performance %



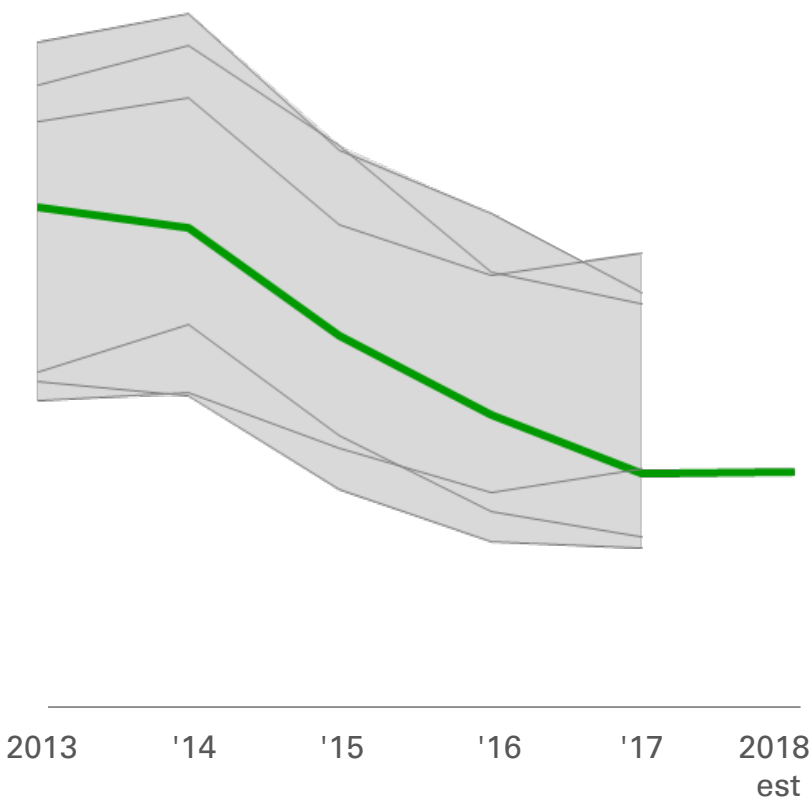
(1) Turnarounds

Rigorously managing cash costs

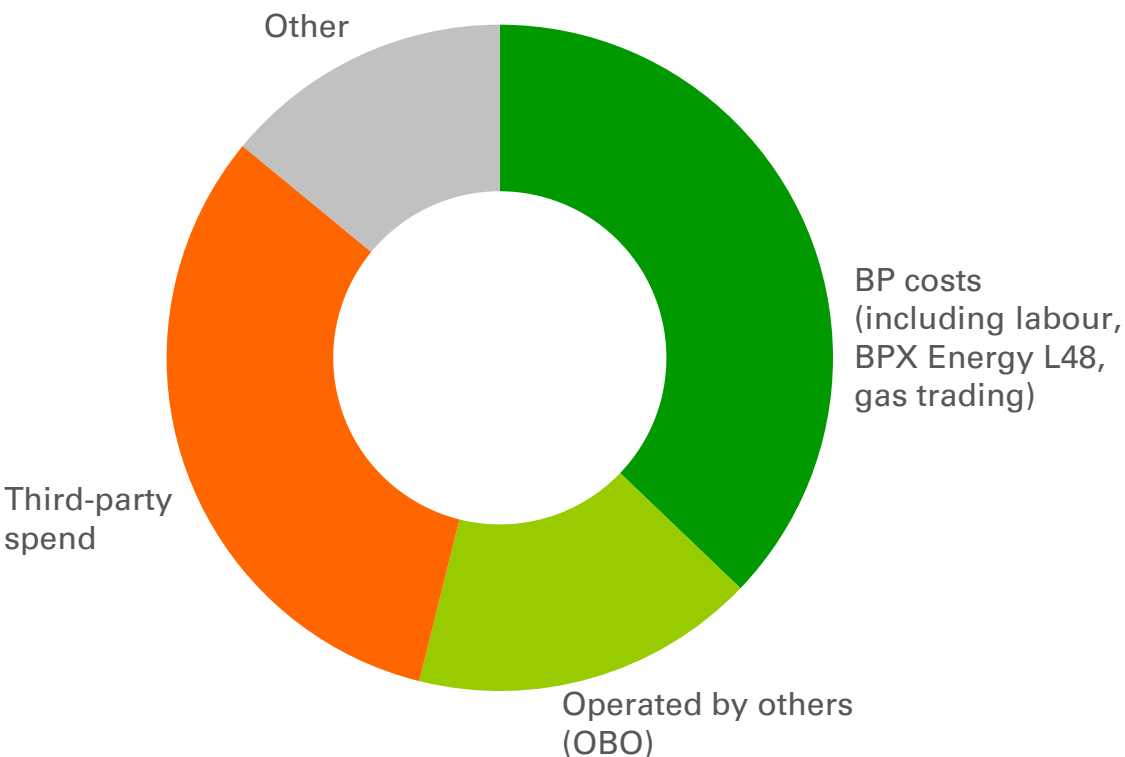
Production costs¹

\$/boe

BP (excl Rosneft) Competitor range



2017 cash costs summary



(1) Includes fuel gas; Competitor Range: Exxon, Shell, Chevron, Total, Equinor and ENI

Management of cash costs

Alaska

- Field wide standardisation of instrumentation systems with a new commercial model
- **56% cost reduction**



Gulf of Mexico

- Aggregation of regional demand for data acquisition. Collaboration with supplier
- **40% cost reduction**




Trinidad

- Supplier collaboration on new technology and new commercial models for project
- **10% cost reduction**



~75% cash cost savings sustainable

Rapid scale up of transformation in 2018

<div><div>~1,000 transformation projects</div><div>Over 1,300 continuous improvement projects</div></div> 		
Agility	Mindset	Digital
<ul style="list-style-type: none">Nearly 3,000 people trained100 scrum teamsUp to 50% cycle time	<ul style="list-style-type: none">Over 2,000 senior leaders through new development programme	<ul style="list-style-type: none">7.5 petabytes now in proprietary data lake

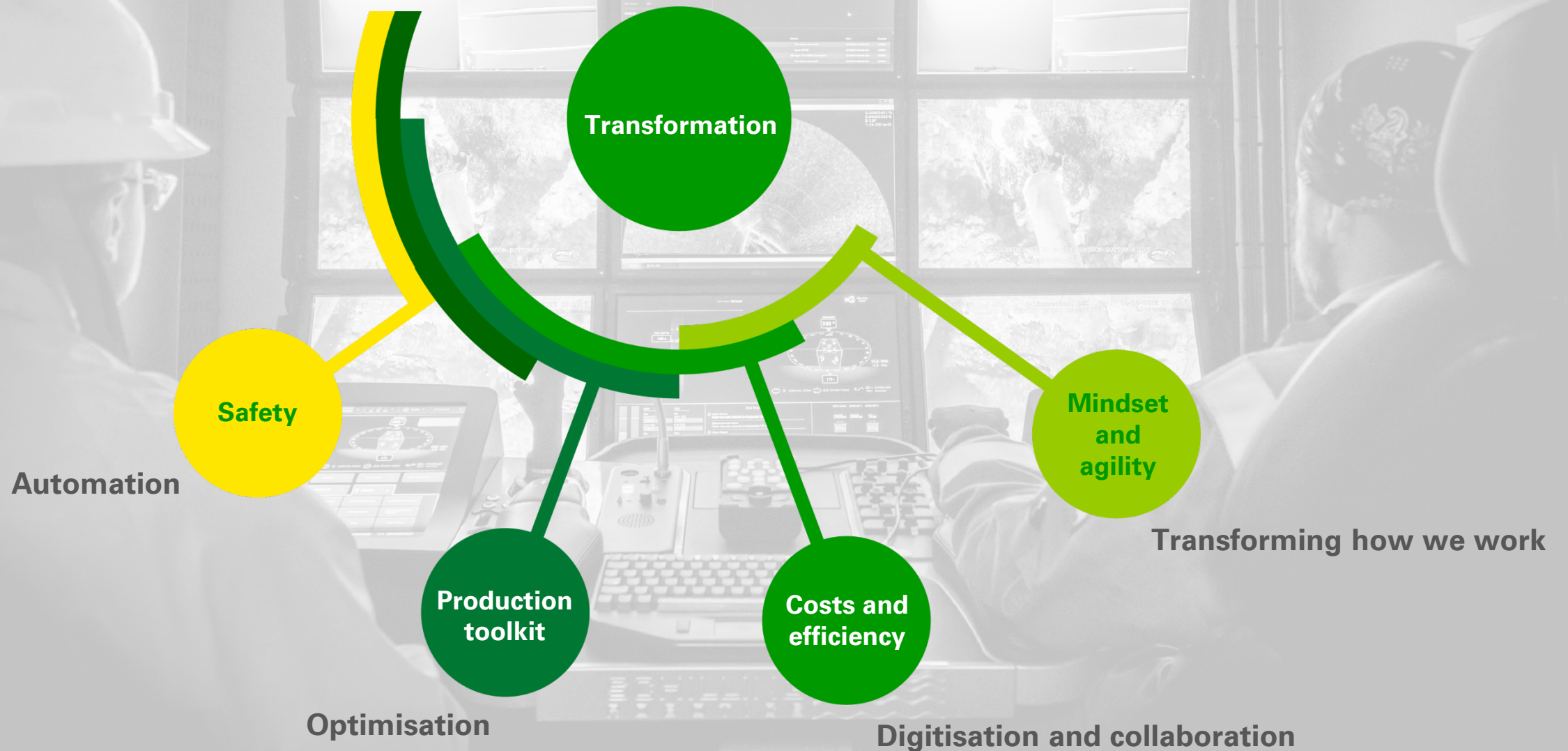


Plant Operations Advisor
deployed in Gulf of Mexico and Angola



Robotic inspection
applying latest tech and machine learning

Base and transformation – what's next?



A short, solid green horizontal line.

Capital discipline and productivity

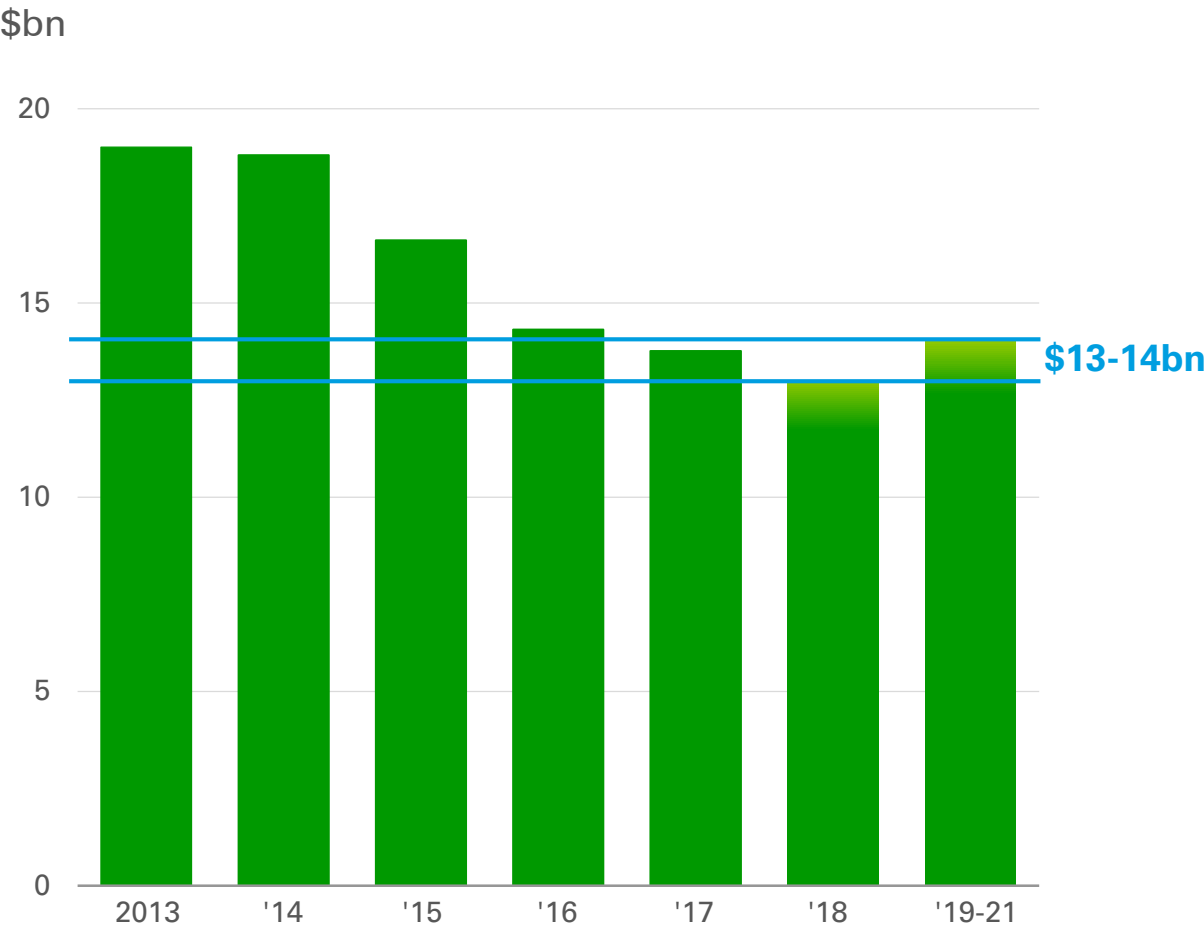
James Dupree
Upstream COO, Developments and Technology

David O'Connor
Upstream Head of Global Projects Organisation

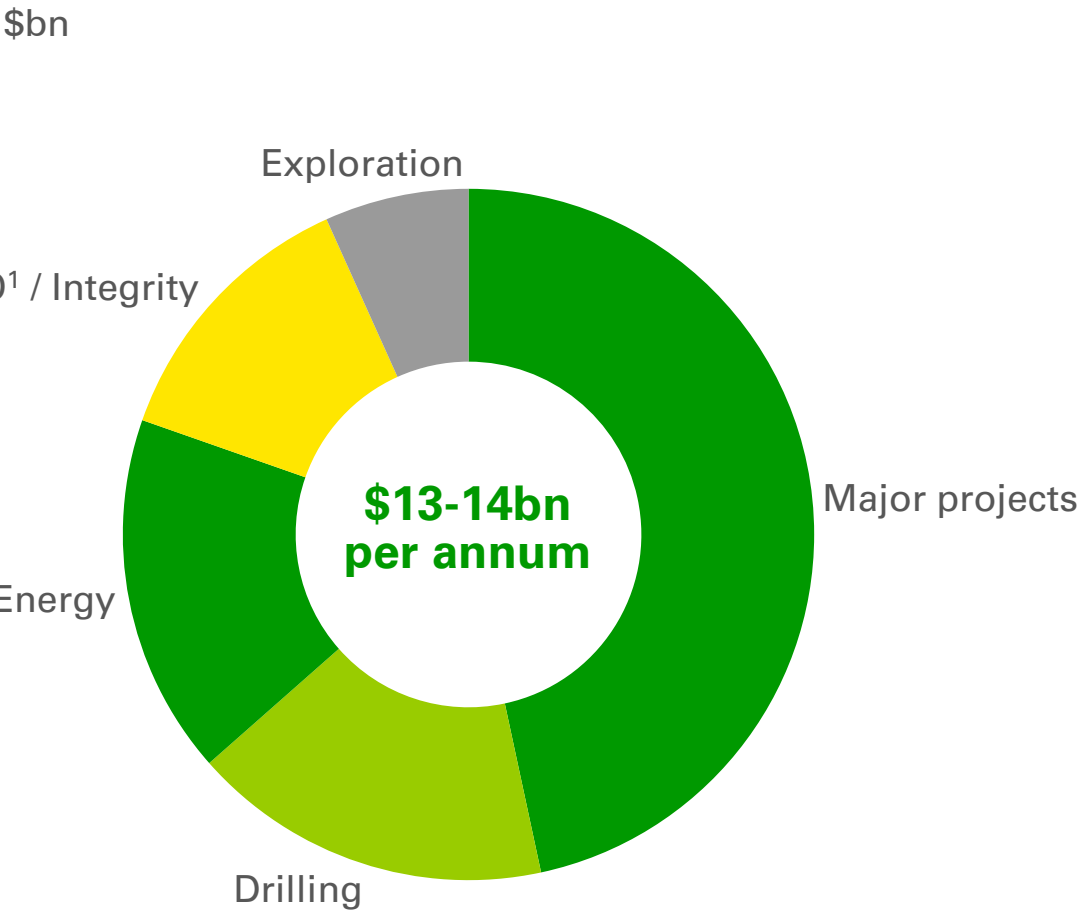


Disciplined capital investment – staying the course

Upstream organic capital

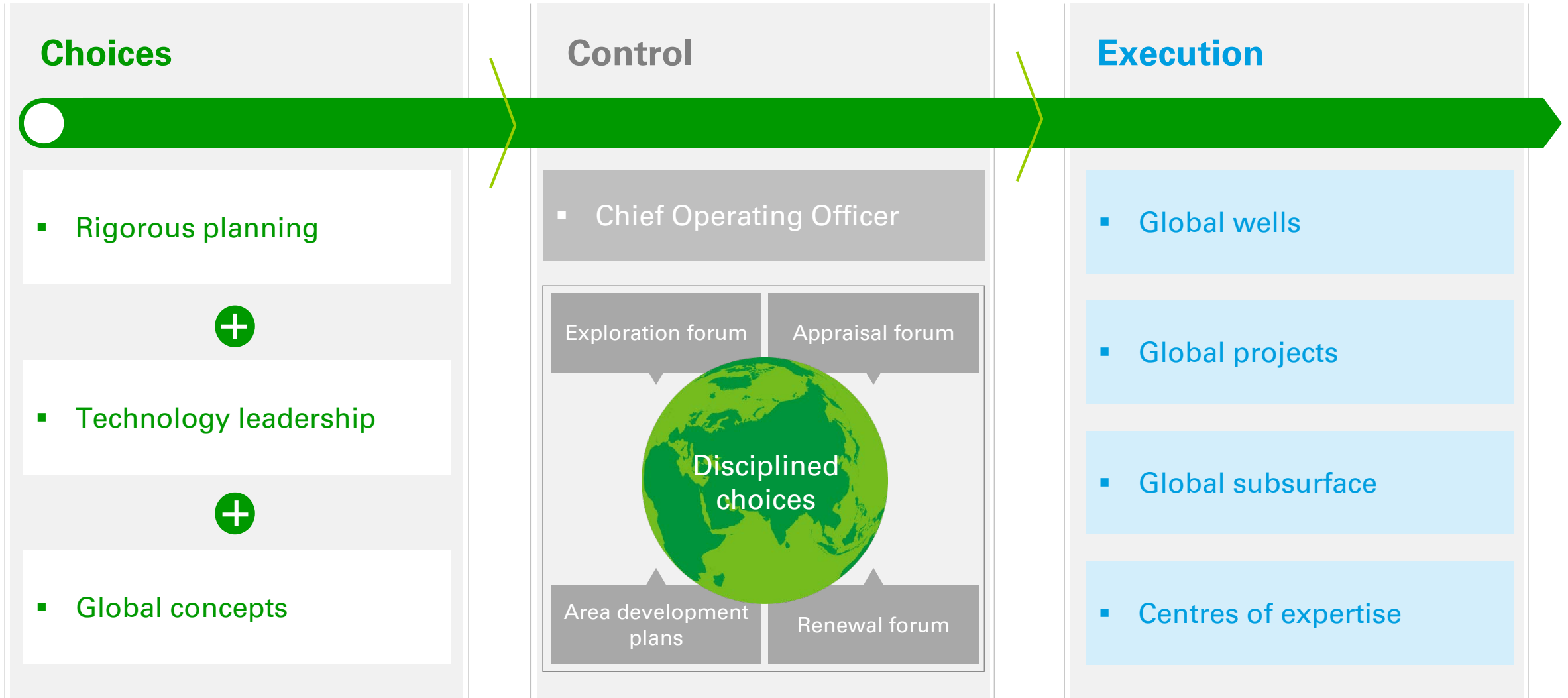


Upstream organic capital to 2021



(1) License to operate

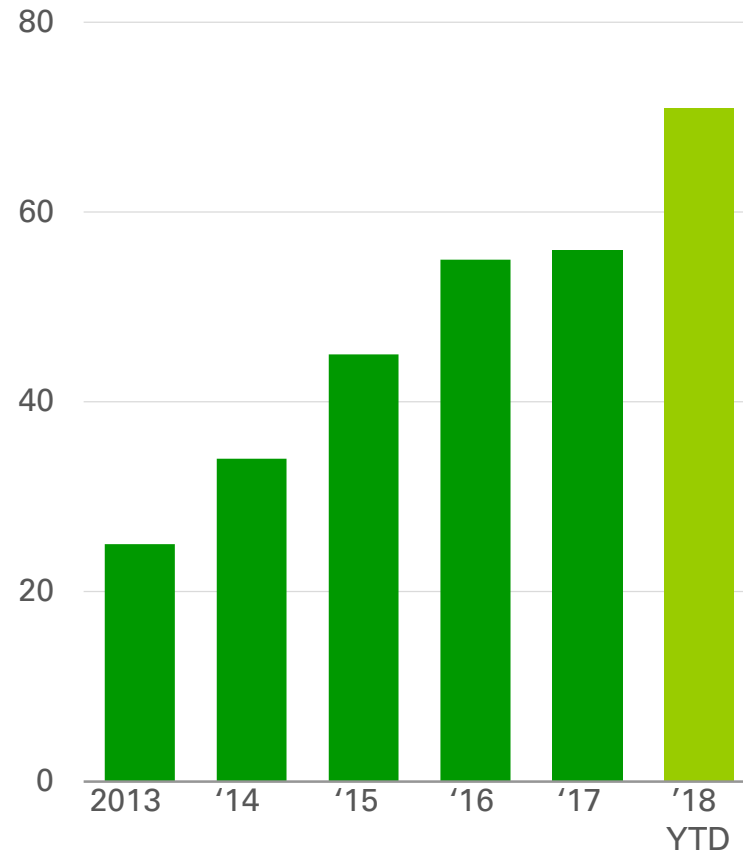
Disciplined capital investment – right choices and strong execution



Execution – competitive drilling and completion performance

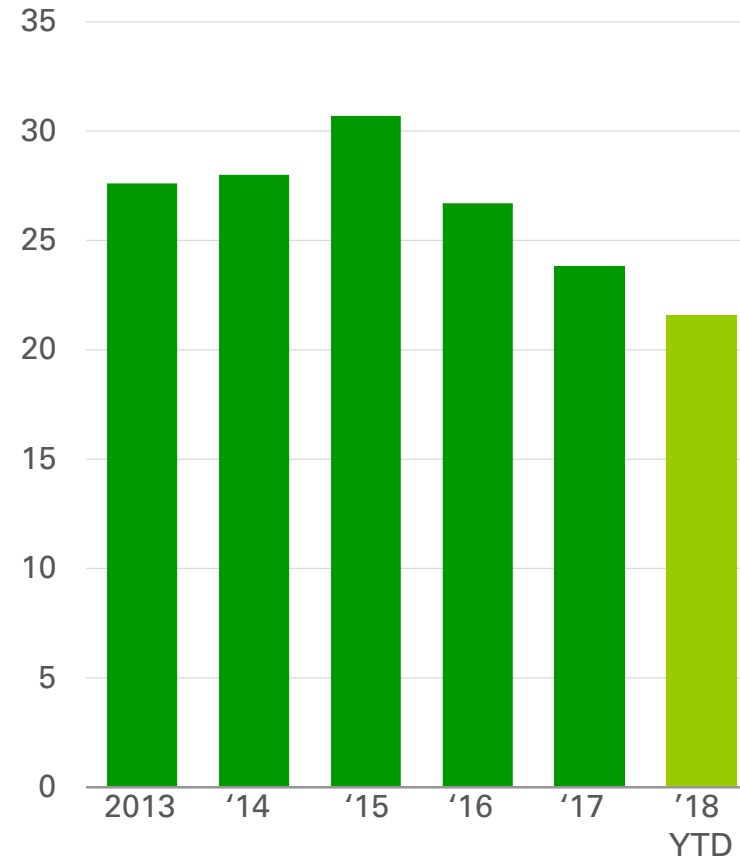
Drilling efficiency

% top quartile offshore wells¹



Completions

% non-productive time²



Improved performance



Atlantis

- Targeting ~35% cost reduction (2016-2019)
- Line of sight to additional ~15% cost reduction by 2021

Manuel

- Top quartile performance
- Drilled competitively vs. low cost independent



Quad 204

- Top quartile 2018 D&C performance
- ~60% cost reduction (2015-2018)



Oman

- ~60% cost reduction since start of appraisal
- Set a basin drilling record in 2018

(1) Source: IHS Rushmore

(2) Percentage of non-productive rig time

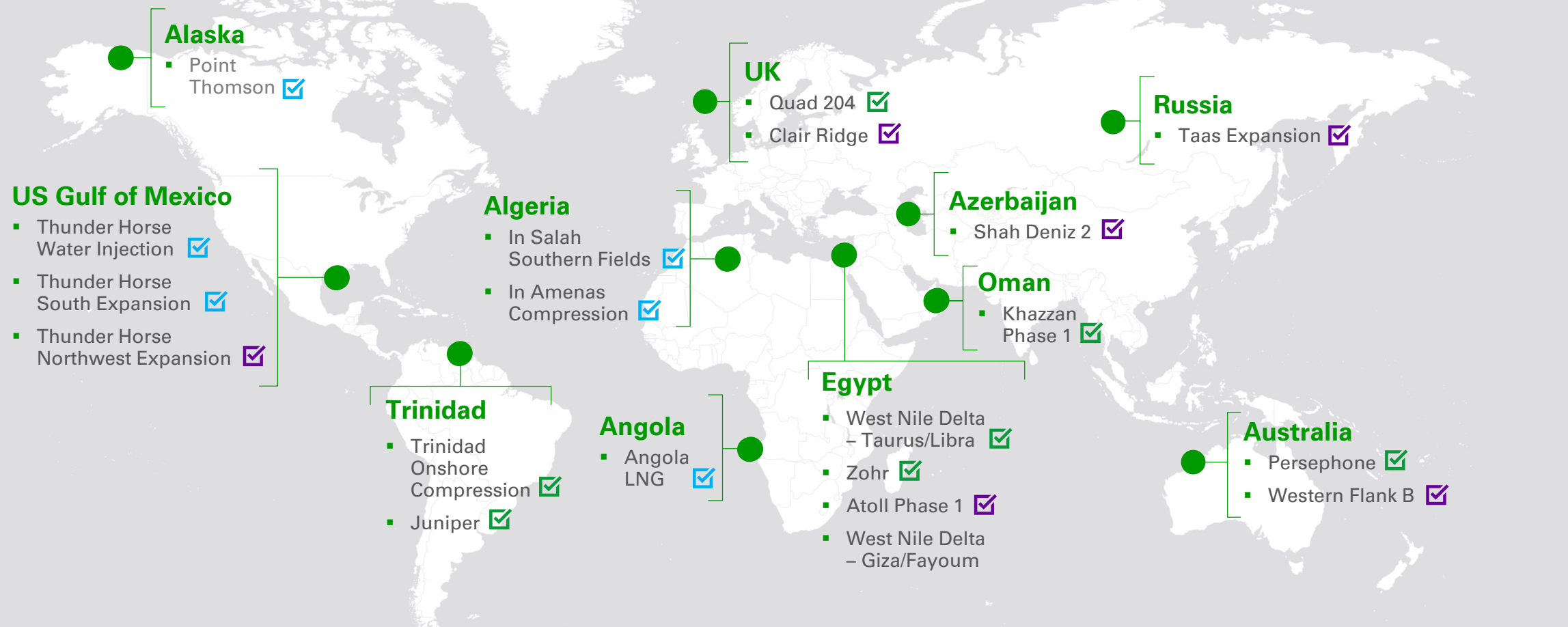
Delivering major projects

19 projects
delivered

~500 mboed net
online to date

Gross capital **~\$100bn**
Net capital **~\$30bn**

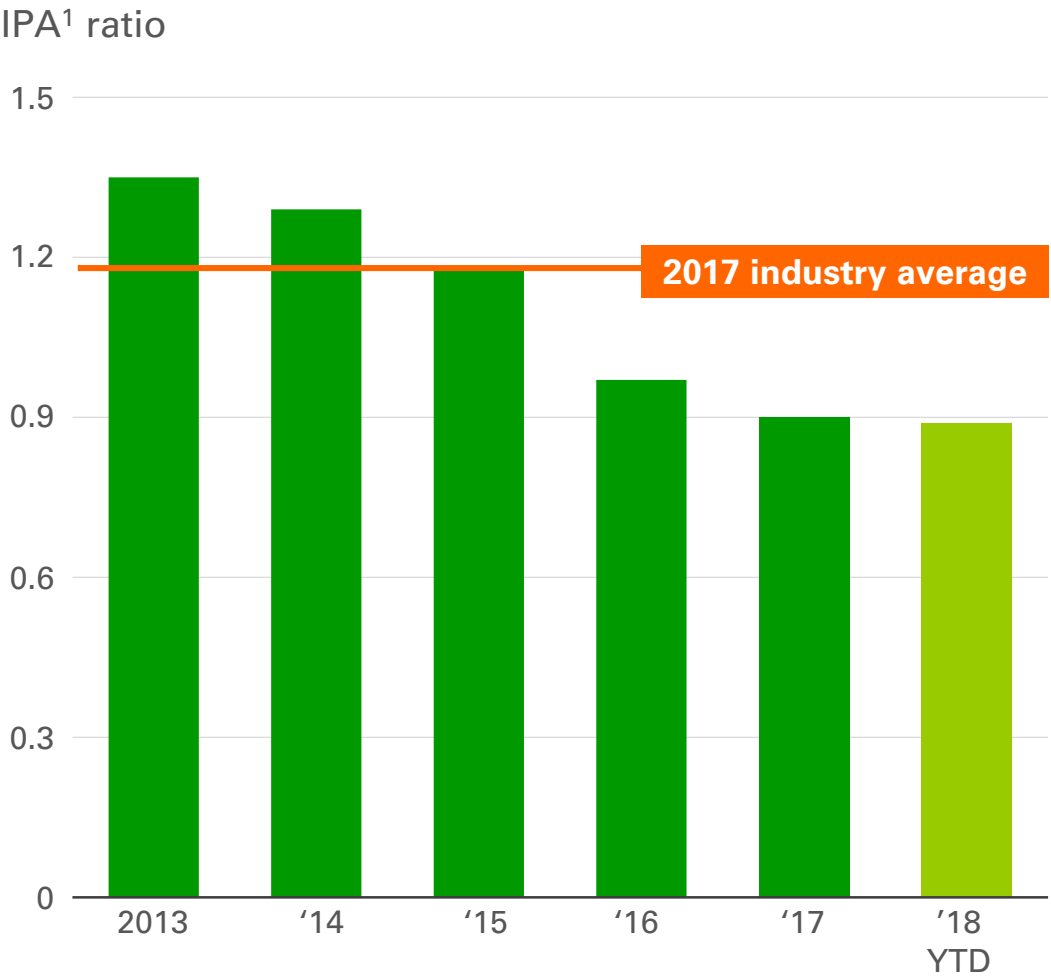
Major project start-ups:  2016  2017  2018



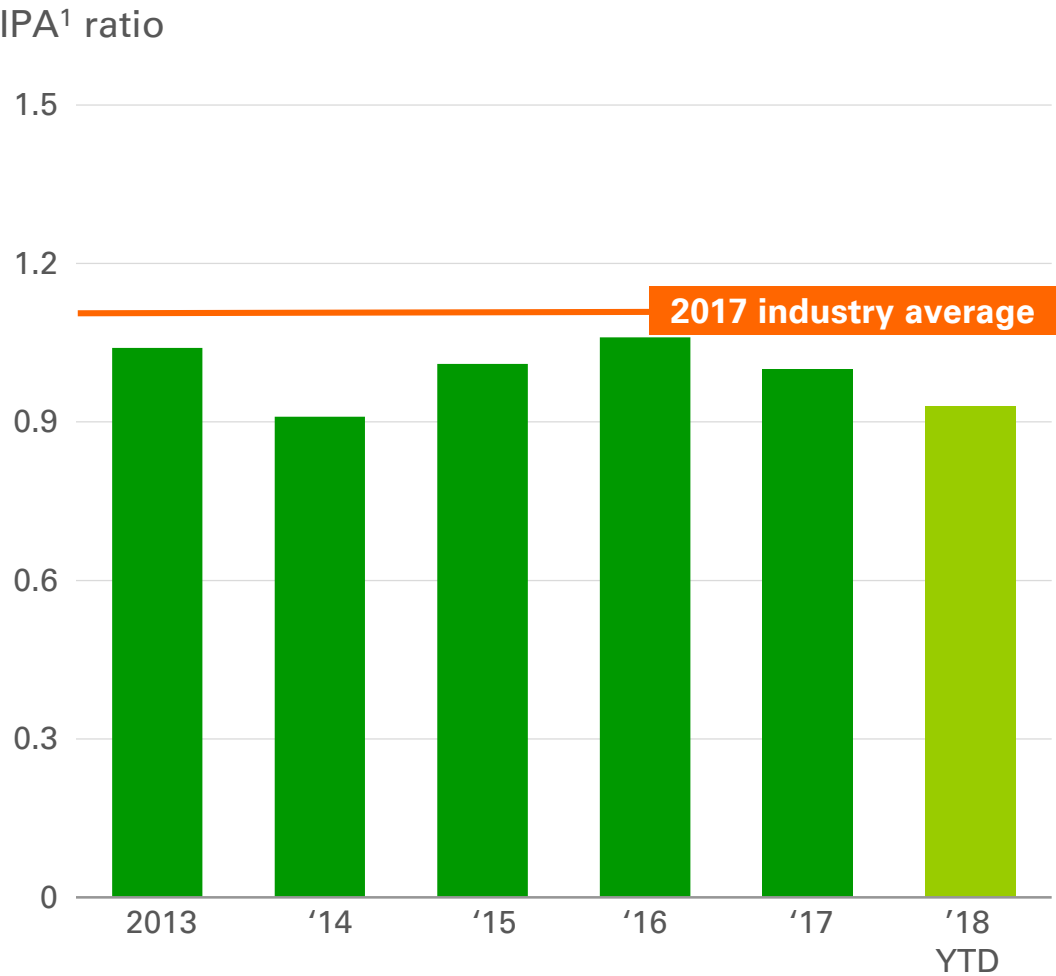
Projects on average **under budget** and **ahead of schedule**

Execution - competitive projects performance

Project costs

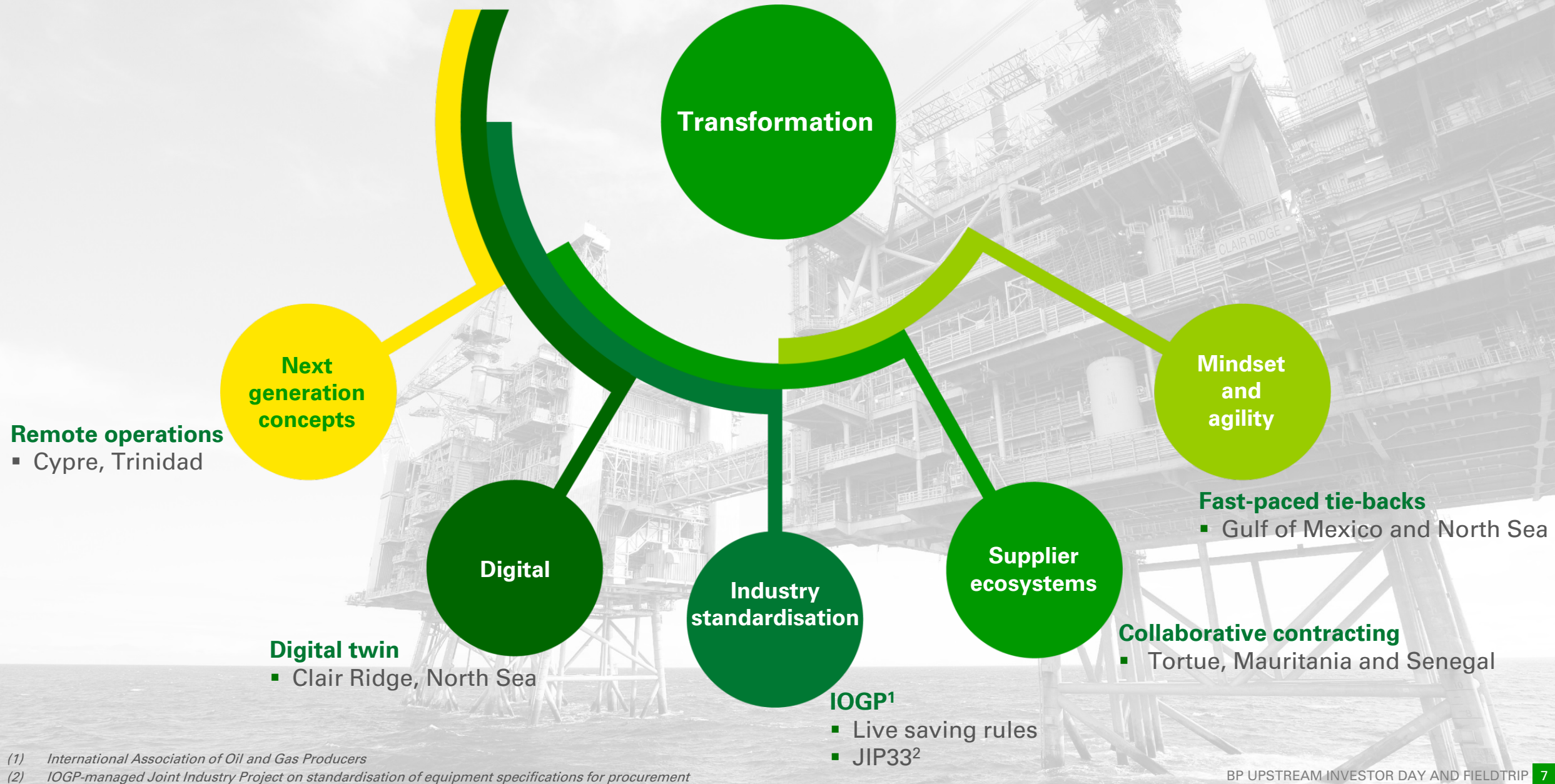


Project schedule



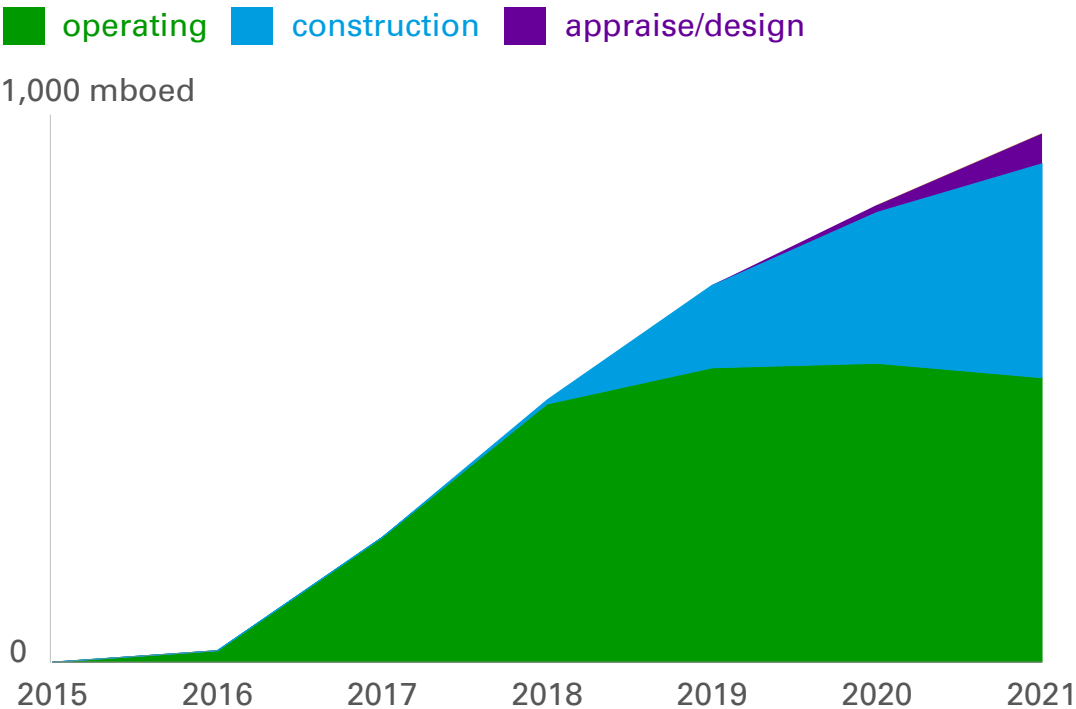
(1) Independent Project Analysis, a lower ratio indicates lower costs and schedule vs. IPA industry models, Upstream Industry Benchmarking Consortium industry average

Project delivery – what's next?



Major projects – on track

BP net production from major projects



900mboed

by 2021

35%

greater cash margins than 2015 base¹

20%

lower development cost than 2015 base

19 delivered, 16 to go

<div>2016</div> <ul style="list-style-type: none">In Salah Southern Fields ✓Thunder Horse Water Injection ✓Point Thomson ✓Angola LNG ✓In Amenas Compression ✓Thunder Horse South Expansion ✓	<div>2017</div> <ul style="list-style-type: none">West Nile Delta~ – Taurus/Libra ✓Trinidad Onshore Compression ✓Quad 204 ✓Persephone ✓Juniper ✓Khazzan Phase 1 ✓Zohr ✓	<div>2018</div> <ul style="list-style-type: none">Atoll Phase 1 ✓Taas Expansion ✓Shah Deniz 2 ✓Thunder Horse North West Expansion ✓Western Flank B ✓Clair Ridge ✓West Nile Delta – Giza/Fayoum
<div>2019</div> <ul style="list-style-type: none">ConstellationAngelinCulzeanWest Nile Delta – Raven	<div>2020</div> <ul style="list-style-type: none">KG D6 R-SeriesTangguh ExpansionAlliginVorlichZinia 2Atlantis Phase 3	<div>2021</div> <ul style="list-style-type: none">Mad Dog Phase 2Khazzan Phase 2KG D6 SatellitesManuelCassia Compression





Advantaged oil portfolio and growth

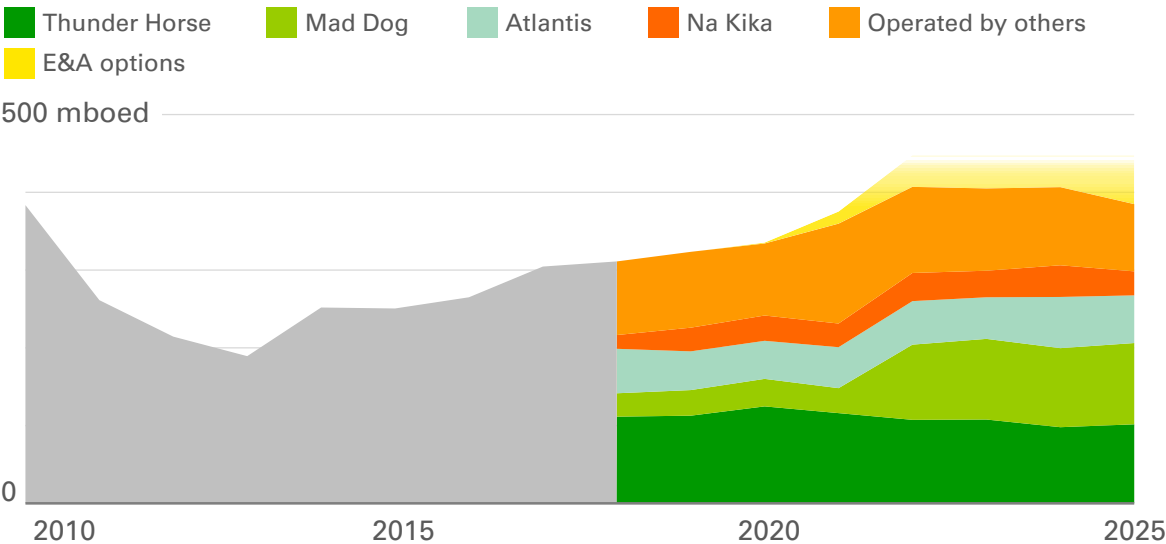
Murray Auchincloss
CFO, Upstream

Starlee Sykes
Regional President,
Gulf of Mexico and Canada

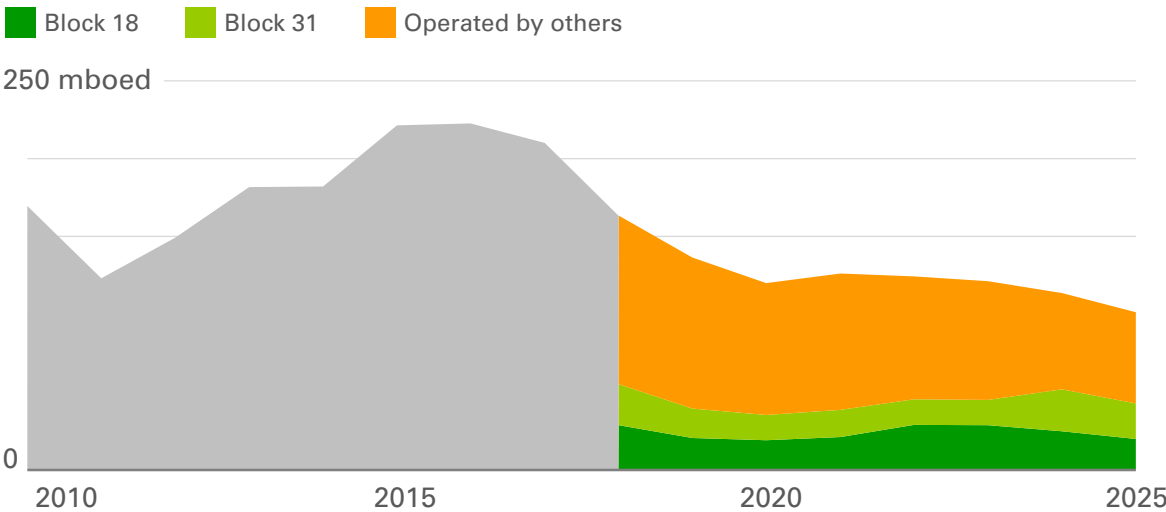


Oil growth underpinned

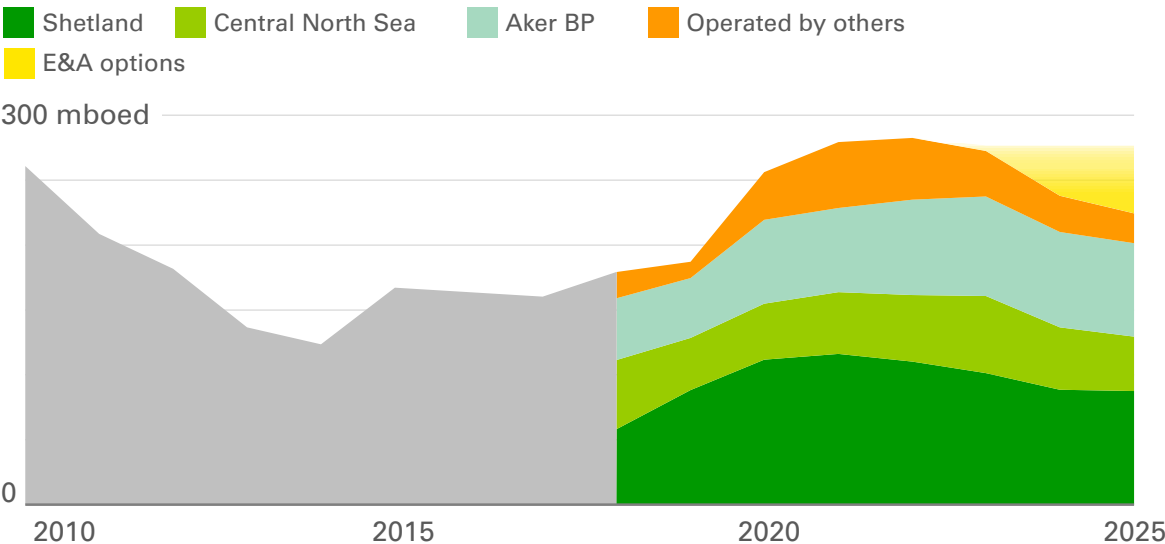
Gulf of Mexico



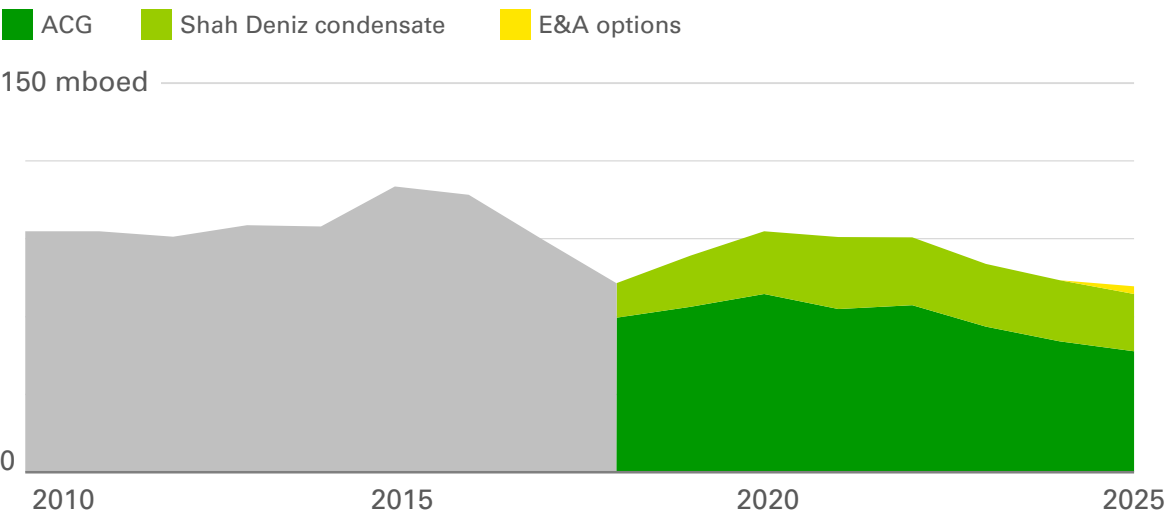
Angola



North Sea



Azerbaijan oil



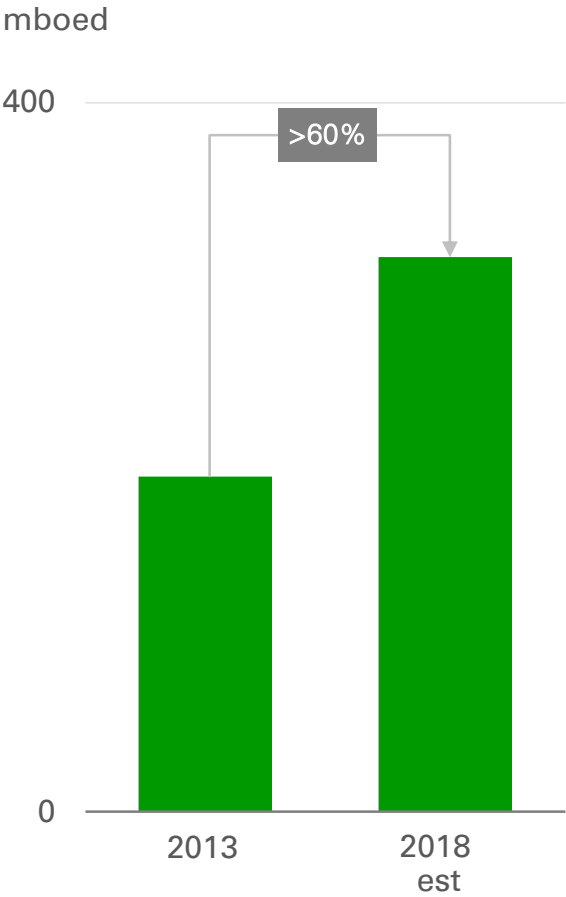
Gulf of Mexico – safely growing a high margin business

- Safety and environment – core value
- Top producer in the Gulf of Mexico
- High quality assets with room to grow
- Track record of cost and capital efficient delivery
- High margin and low cash breakeven point



Gulf of Mexico - building a competitive business

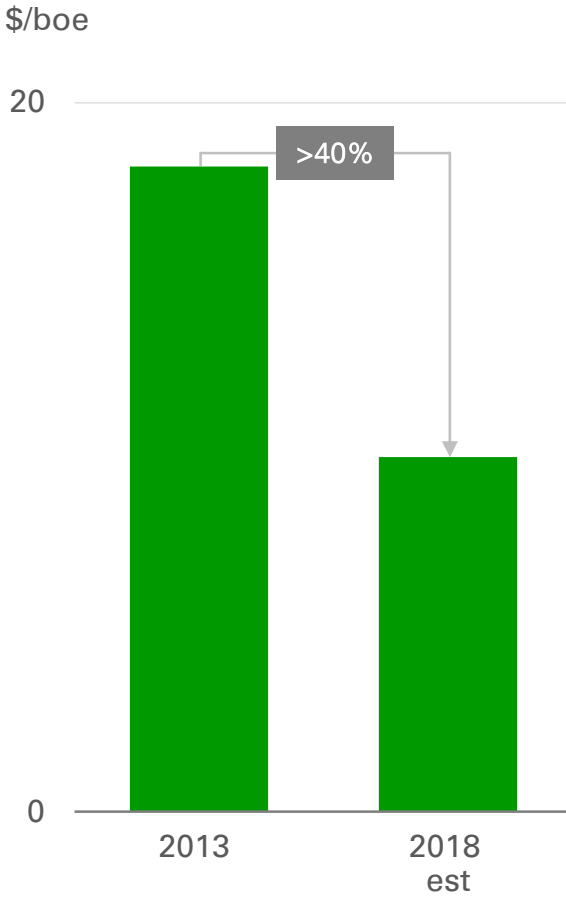
Production



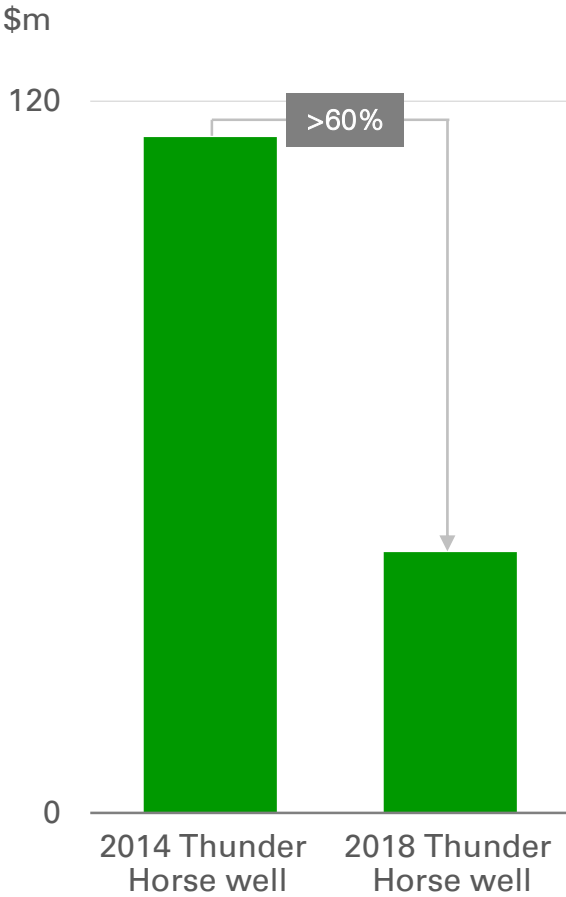
Plant reliability¹



Unit production costs



Capital efficiency example



(1) BP-operated plant reliability

Mad Dog – developing a Miocene giant

2.7bn boe

Net estimated HCIIP¹

4%

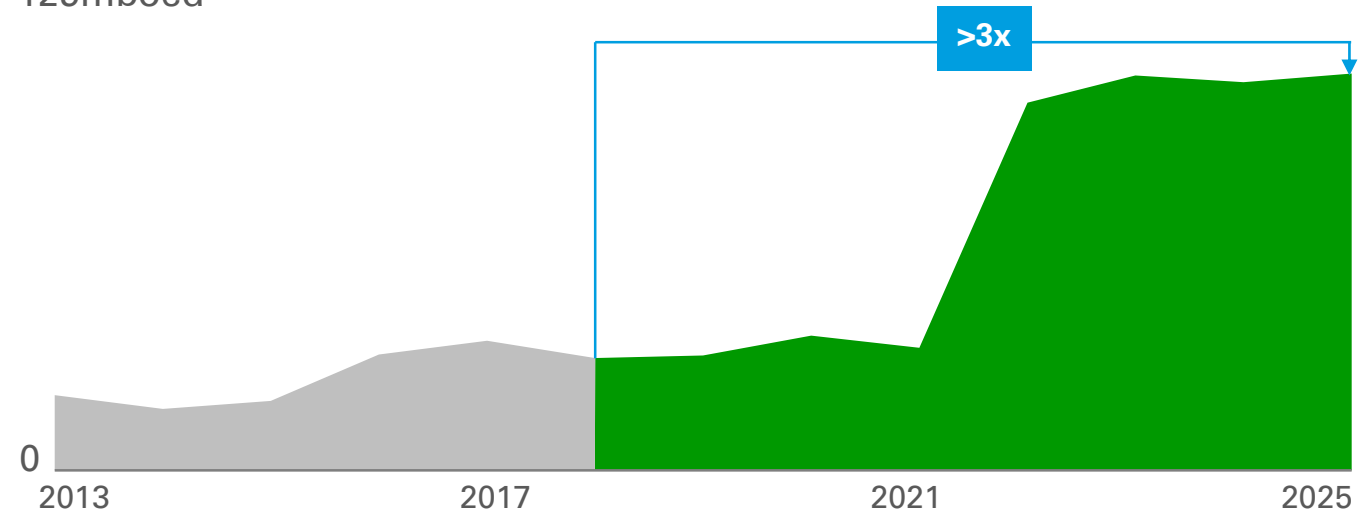
Recovered²



- Strong capital efficiency
- Technology driven growth – Wolfspar™ and LoSal™

Production

125mboed



Future options

- North West Water Injection
- South West Expansion
- Mad Dog Shallow
- New hub: Mad Dog 2 - Argos
- up to 140 mboed oil capacity expected from late 2021

(1) Hydrocarbons initially in place

(2) Production to end-2017

Atlantis – field within a field

1.7bn boe

Net estimated HCIIP¹

11%

Recovered²

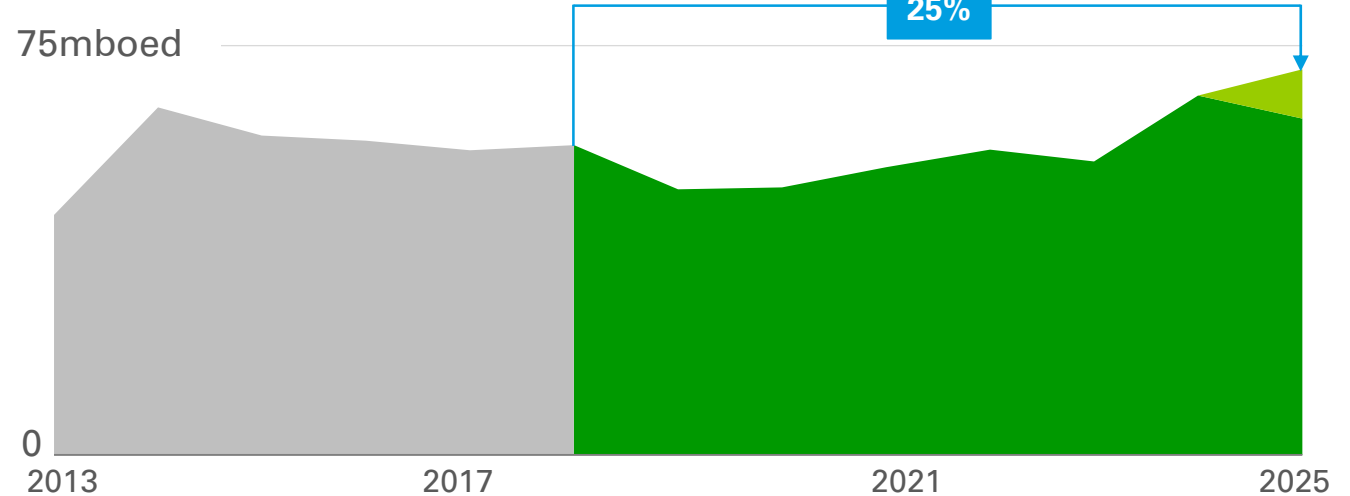


- Technology driven growth – 4D Ocean Bottom Nodes (OBN) seismic, Distributed Acoustic Sensor (DAS), and Wolfspar™

Production

■ ILX

75mboed



Future options

- Phase 3 (new field)
- Phase 4 & 5 (new horizon)
- Water Injection Expansion
- Infrastructure Led Exploration (ILX) opportunities

(1) Hydrocarbons initially in place

(2) Production to end-2017

Thunder Horse – maintaining cash engine at full capacity

2.9bn boe

Net estimated HCIIP¹

10%

Recovered²

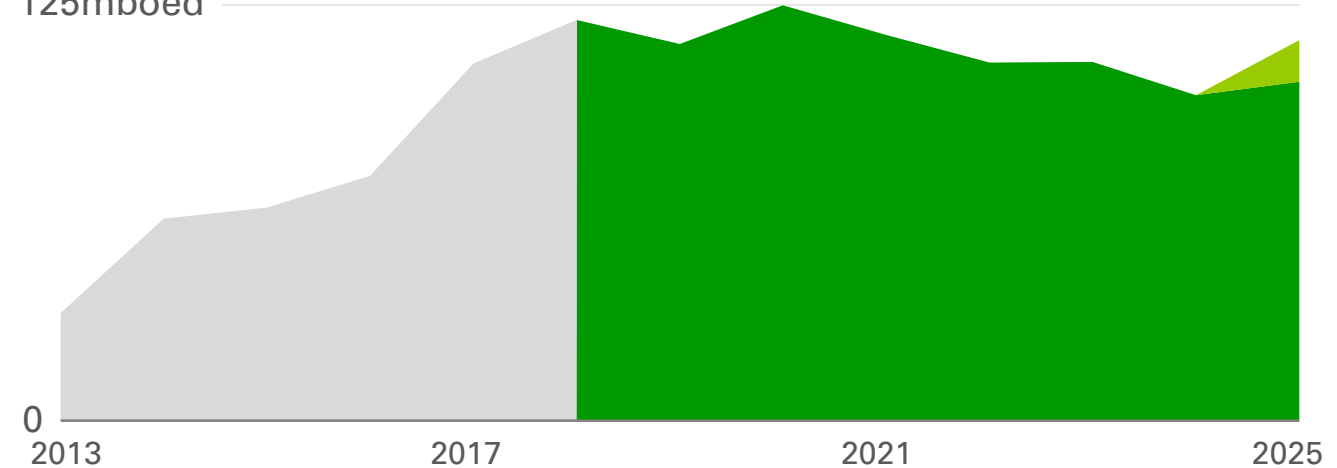


- Sustain production through system optimisation and innovative well interventions

Production

■ ILX

125mboed



Future options

- South drill-out
- Water Injection Expansion
- South Expansion Phase 2
- South Shallow (new field)
- ILX opportunities

(1) Hydrocarbons initially in place

(2) Production to end-2017

Na Kika – renewing a high profitability hub

0.7bn boe

Net estimated HCIIP¹

29%

Recovered²

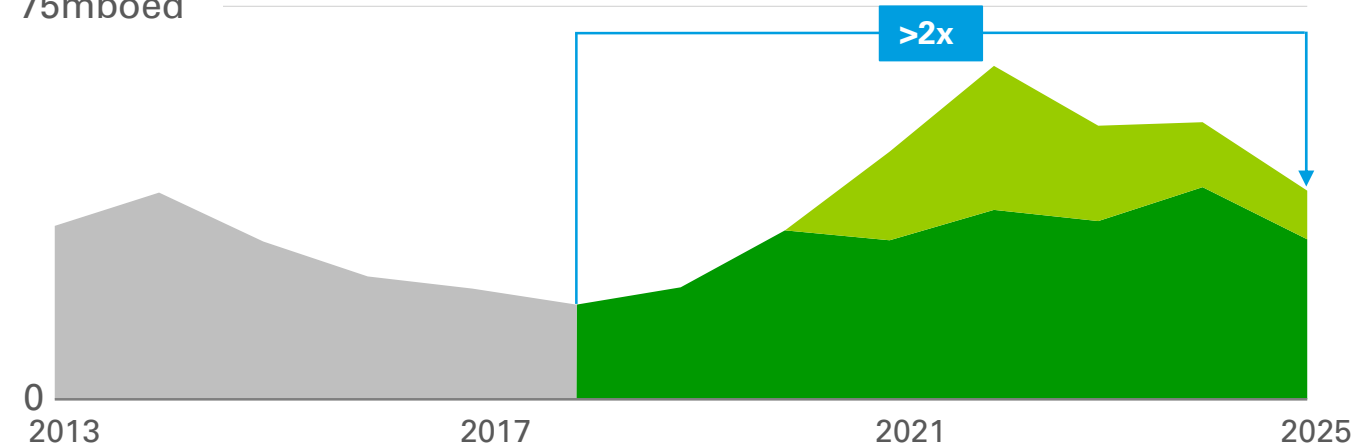


- Agile working techniques, ILX and new well design unlocking value

Production

■ ILX

75mboed



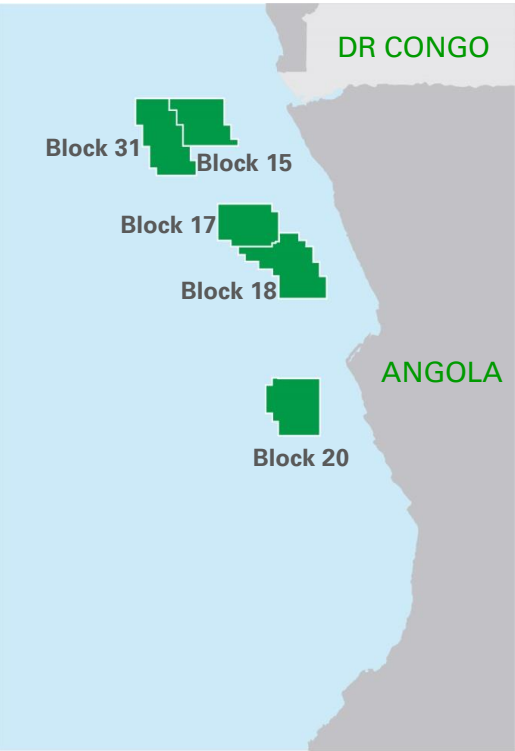
Future options

- Isabela & Ariel Infill
- Manuel Development
- Herschel Expansion
- Additional ILX opportunities

(1) Hydrocarbons initially in place

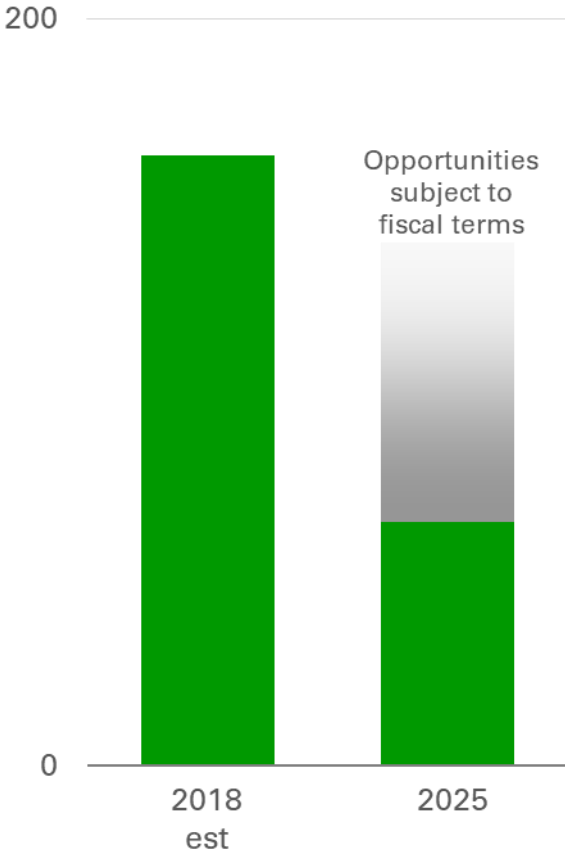
(2) Production to end-2017

Angola – decline but increasing potential



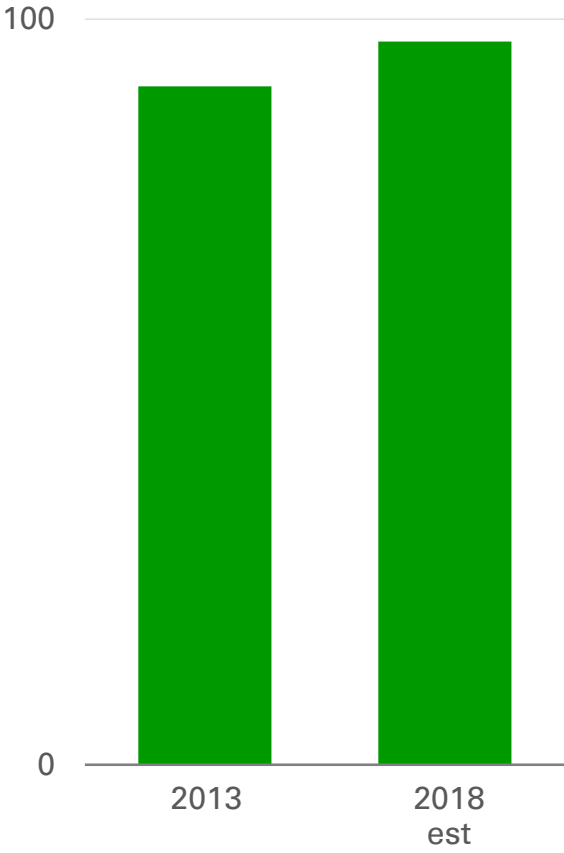
Production

mboed



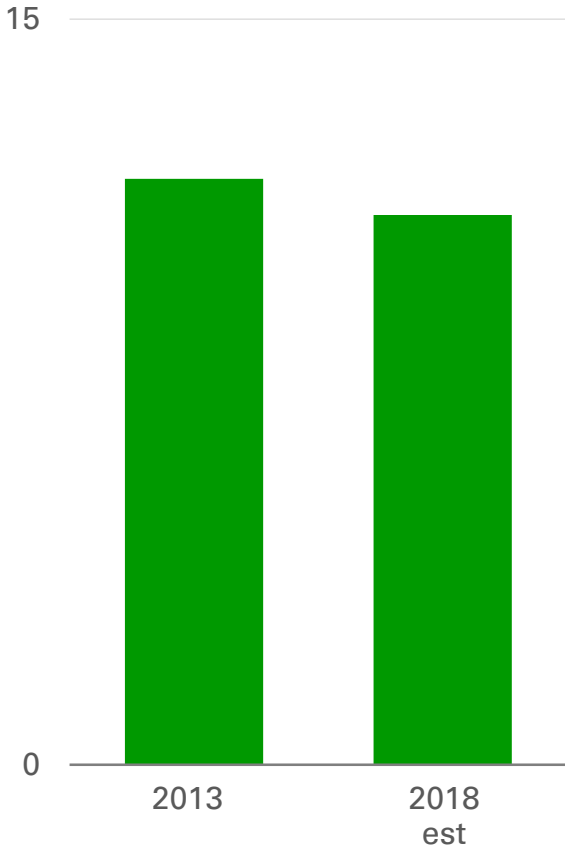
Offshore plant reliability¹

%



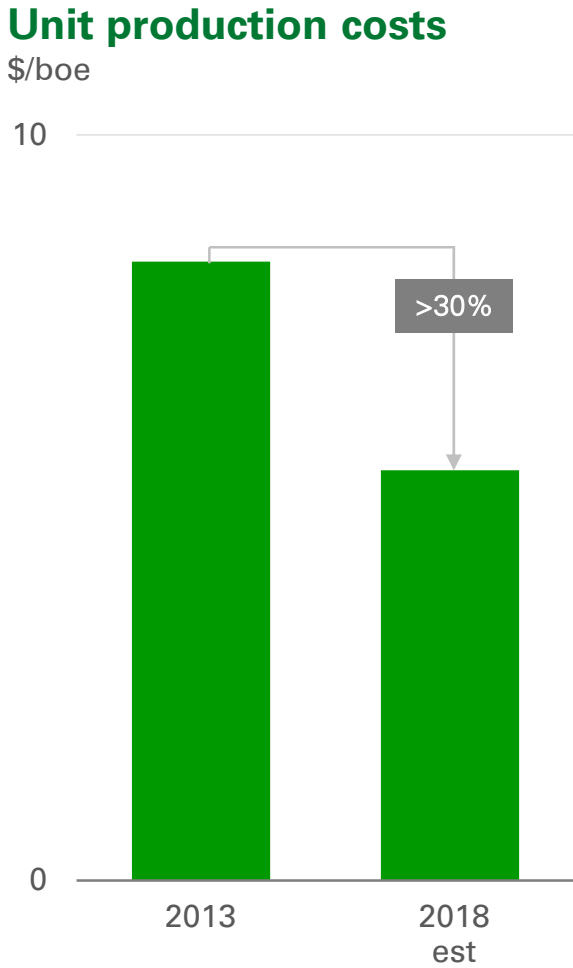
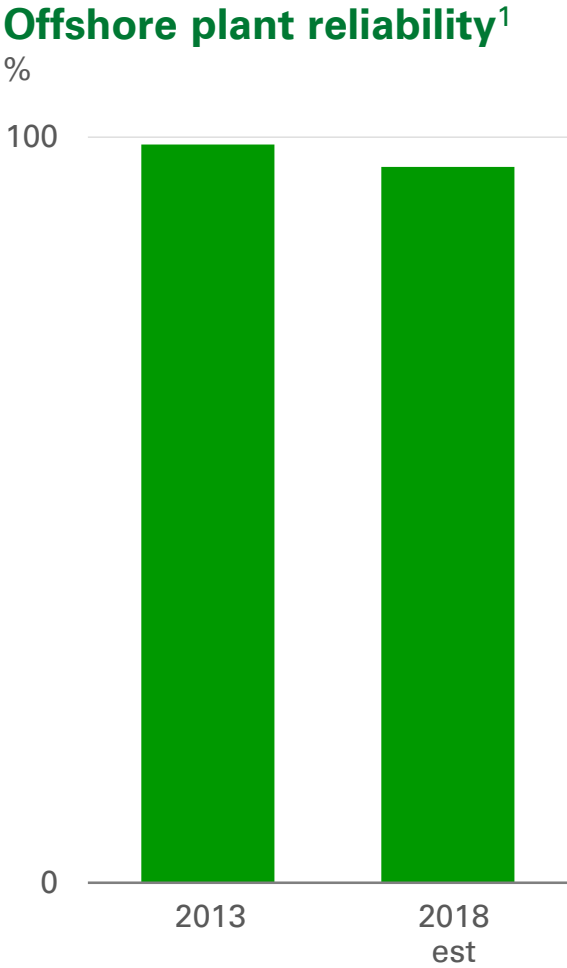
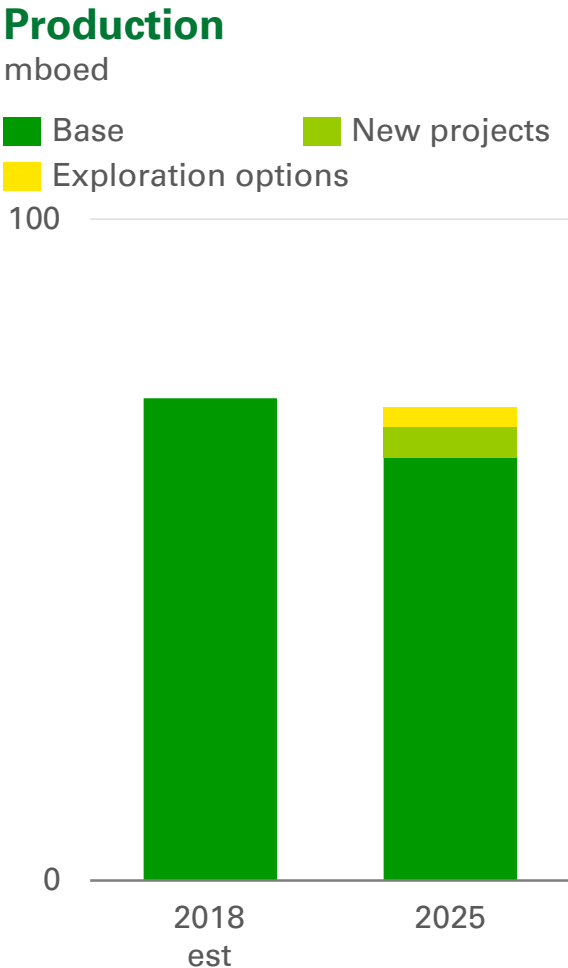
Unit production costs

\$/boe



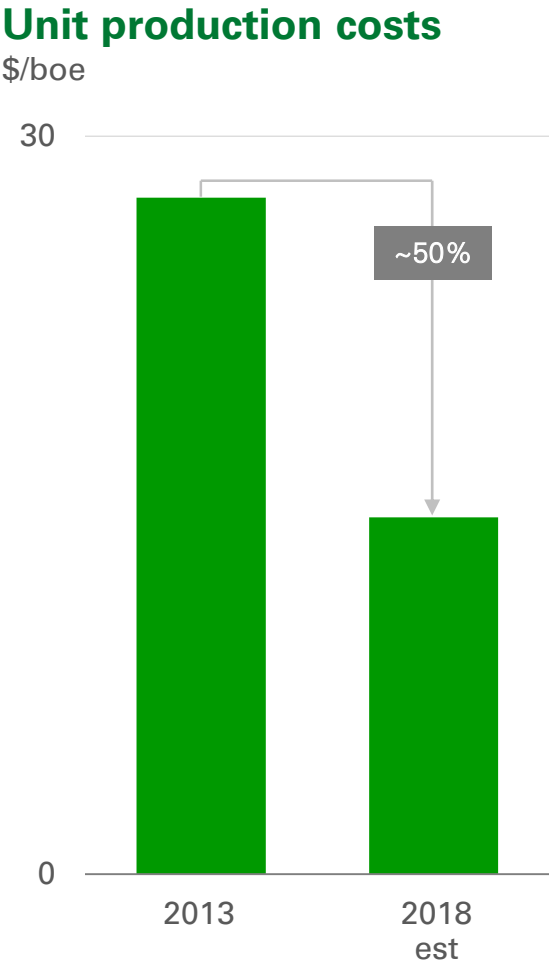
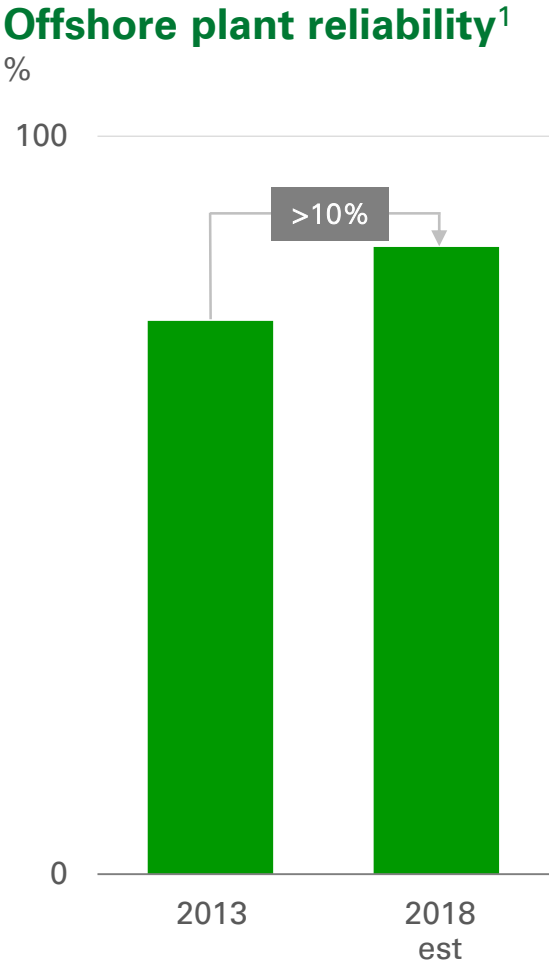
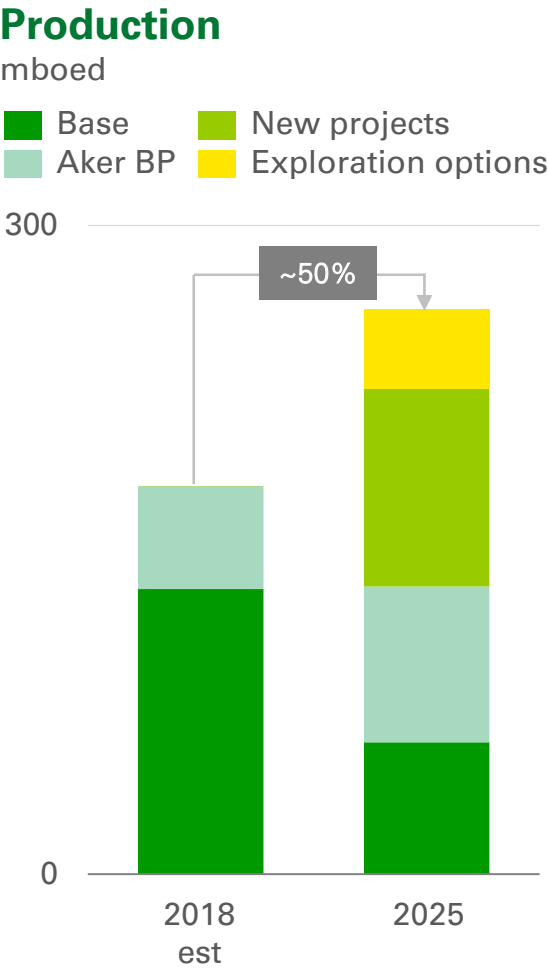
(1) BP-operated plant reliability

Azerbaijan – sustaining a material business with significant exploration opportunity



(1) BP-operated plant reliability

North Sea – back to growth



(1) BP-operated plant reliability

Intentionally blank

A large, semi-transparent geometric overlay on the left side of the slide, composed of various shades of gray triangles and polygons. A short, solid green horizontal line is positioned above the title text.

Advantaged gas portfolio and growth

William Lin
COO, Regions

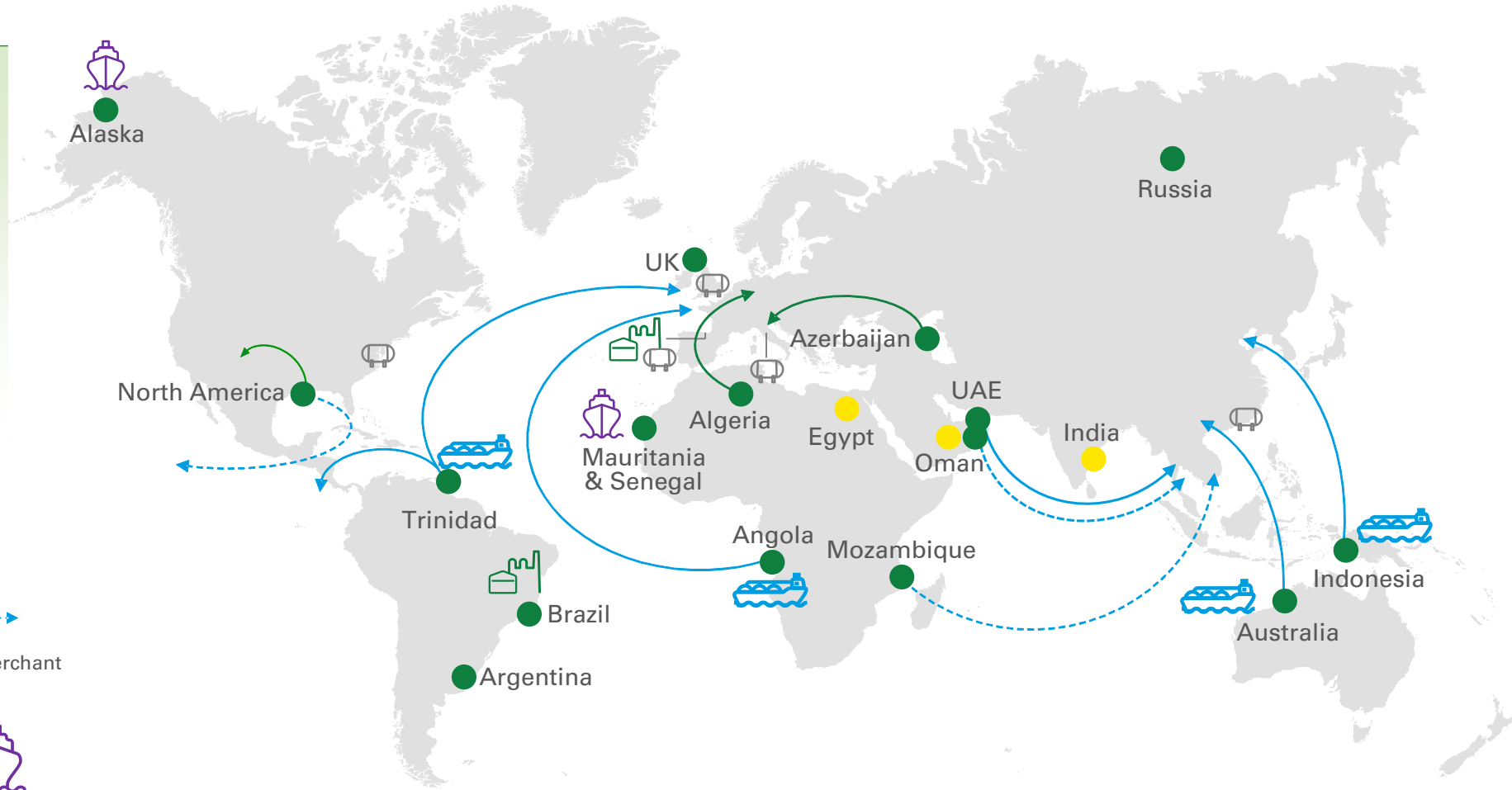
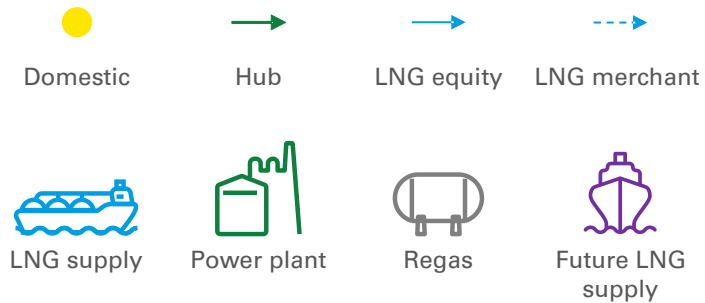
Alan Haywood
CEO, Integrated Supply and Trading

Emma Delaney
Regional President, Mauritania & Senegal



Advantaged gas

- Belief in gas
- Balanced portfolio
- Strong growth and quality
- Broad and integrated capability throughout gas value chains



~1.2mmboed 2018 production¹

~80tcf gas resources²

~50% total Upstream production

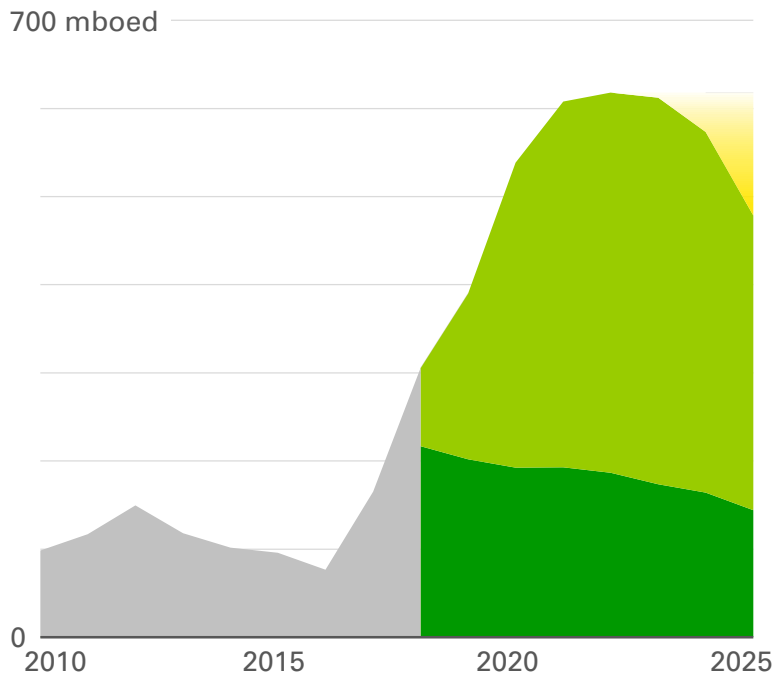
(1) Total production for gas producing regions (2) Includes BP's share of reserves of equity-accounted Upstream entities. Proved reserves year end 2017 estimate, and non-proved resources year end 2017 estimate updated for significant movements in 2018

Balanced gas portfolio

Domestic pricing¹

Oman, Egypt gas, Russia, India

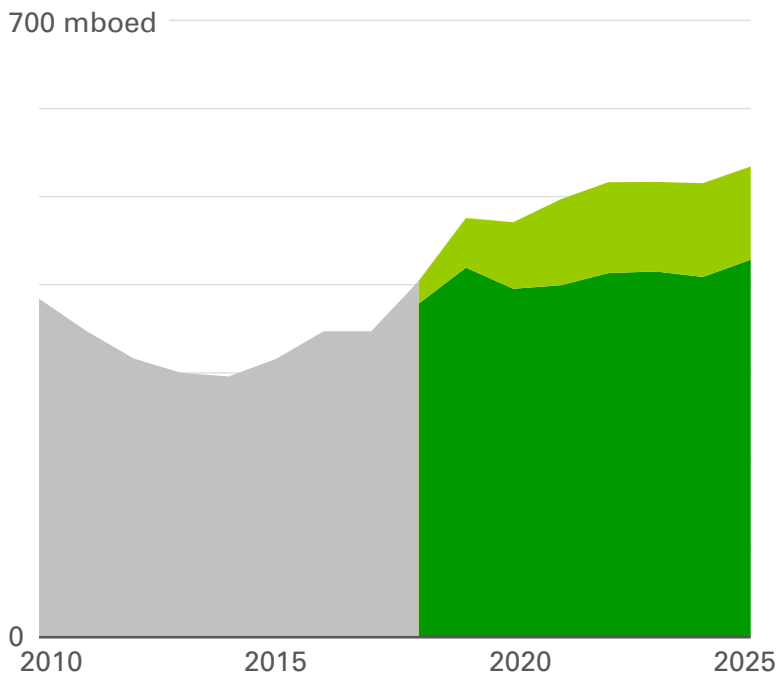
■ Base ■ Major projects ■ E&A options



Hub pricing¹

Algeria, Azerbaijan (Shah Deniz gas), BPX Energy gas

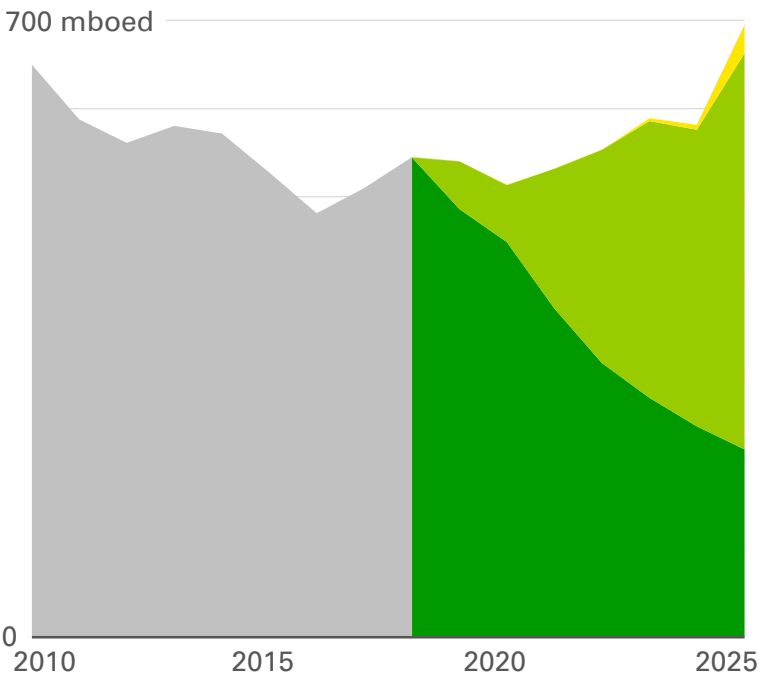
■ Base ■ Major projects



International LNG¹

Australia, Indonesia, Mauritania & Senegal, Trinidad

■ Base ■ Major projects ■ E&A options

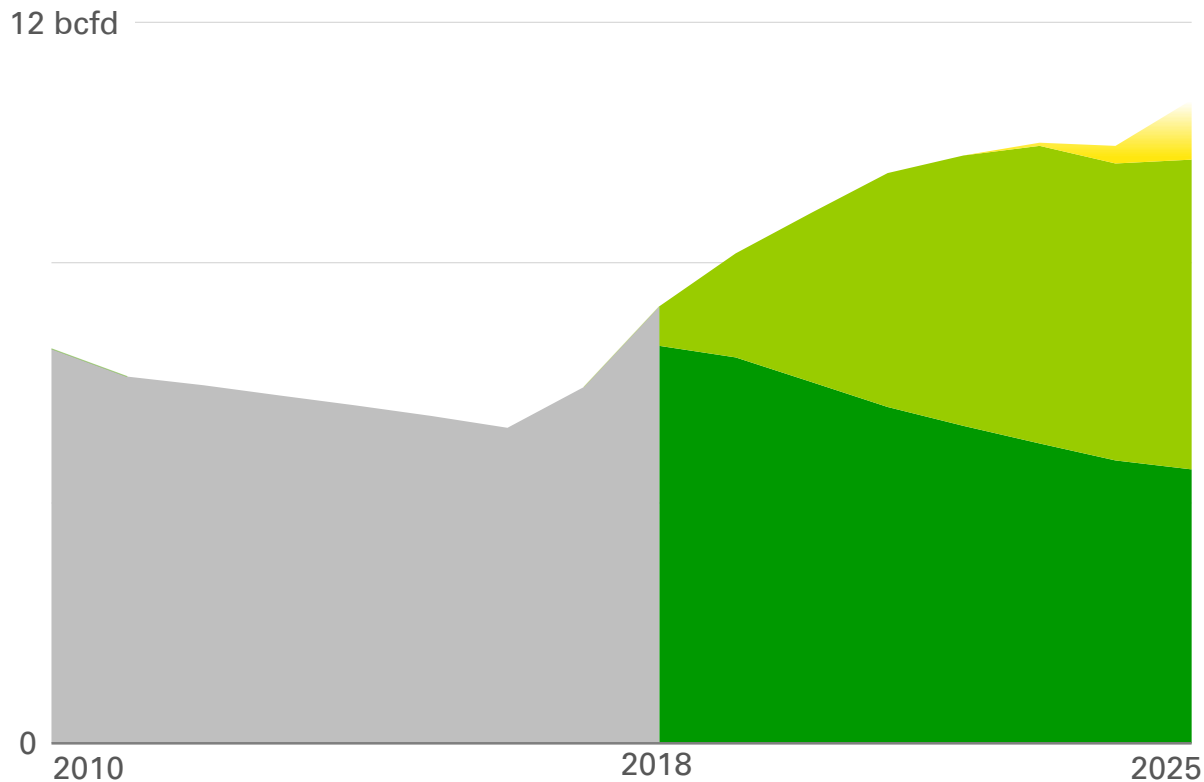


(1) Total production for gas producing regions

Strong growth and quality

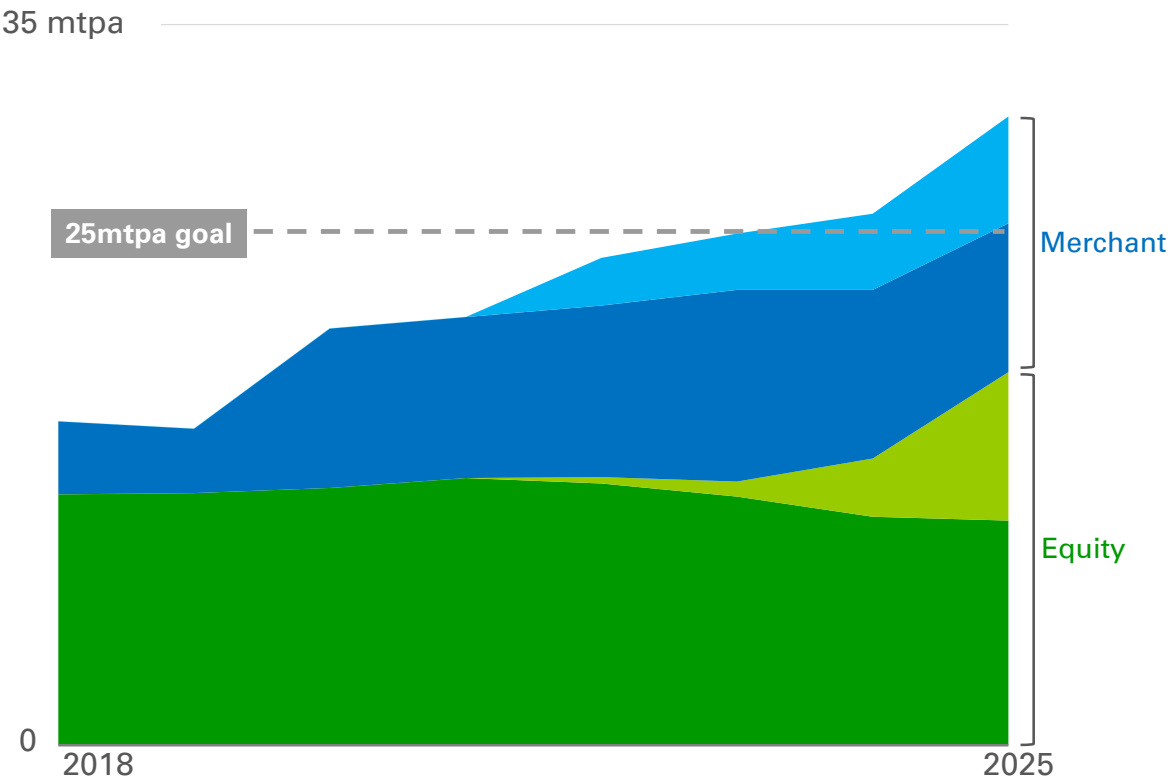
Gas production¹

Managed base Major projects E&A options



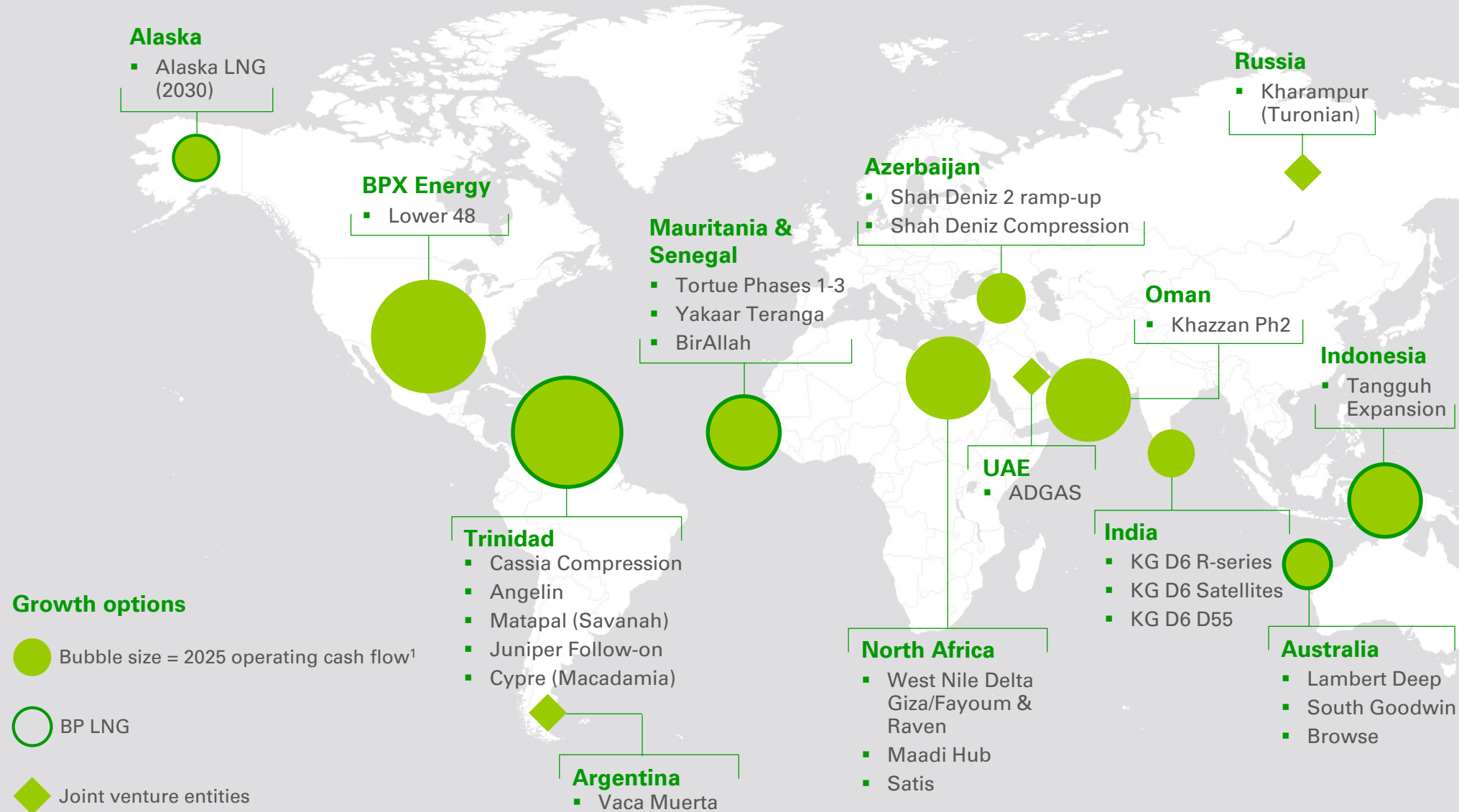
LNG volumes

Equity base Equity opportunity
Merchant base Merchant opportunity



(1) Total production for gas producing regions

Underpinning growth and basin leadership

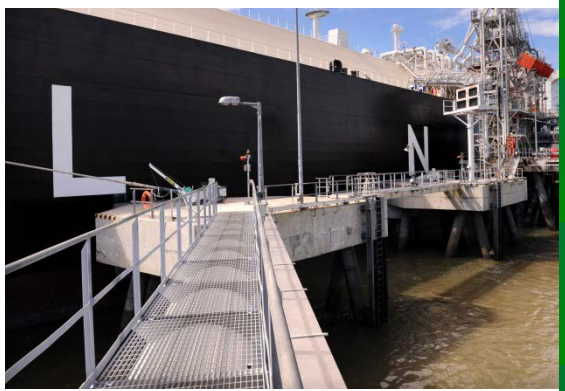


(1) Estimates based on BP planning assumptions

Broad capability – gas value chain optimisation

Global LNG

- Diversified supply of equity and merchant LNG
- Geographic and price exposure balance
- Building markets: Brazil, India, China, other Asia



~200	spot cargos traded in 2018
5	regas plants in US, UK, China, Italy and Spain
13 ships	7 current + 3 on order + 3 charter
2017	CWC/World Gas Awards outstanding contribution to the industry

Gas and Power

- Trading
- Operations
- Origination
- Analytics
- Integrated marketing



>20bcf/d	natural gas marketed in North America
>4mmboed	NGLs traded globally
~50TWh/yr	wholesale power marketed
2018	Energy Risk Awards natural gas house of the year

Broad capability – delivering complex projects

Tangguh LNG



- Located at a remote site in Bintuni Bay, West Papua, Indonesia with 2 LNG trains producing 7.6mtpa
- Operator across the LNG value chain from wellhead to market, with 5 other partners and multiple LNG buyers
- Existing LNG trains started up in 2009 and are expected to deliver 1,000th cargo by January 2019
- Tangguh Expansion will add another 3.8mtpa making the facility the largest gas producer in Indonesia – on track for 2020 start-up

Southern Gas Corridor



- Shah Deniz – world class reservoir in the Caspian, Azerbaijan with up to 40tcf of gas initially in place
- 3,500km pipeline infrastructure linking Caspian to Europe transiting 6 countries
- Started up with delivery of gas in July 2018 into Turkey
- Trans Adriatic Pipeline (TAP) portion and further ramp-up on track for 2020 start-up into Europe

Broad capability – creating innovative solutions

Mauritania & Senegal

Material position in a world class hydrocarbon basin

- ~50,000km² of acreage across 7 blocks
- 50-100tcf estimated gas in place
- Competitive near-shore LNG to Europe
- Phased development options

Greater BirAllah

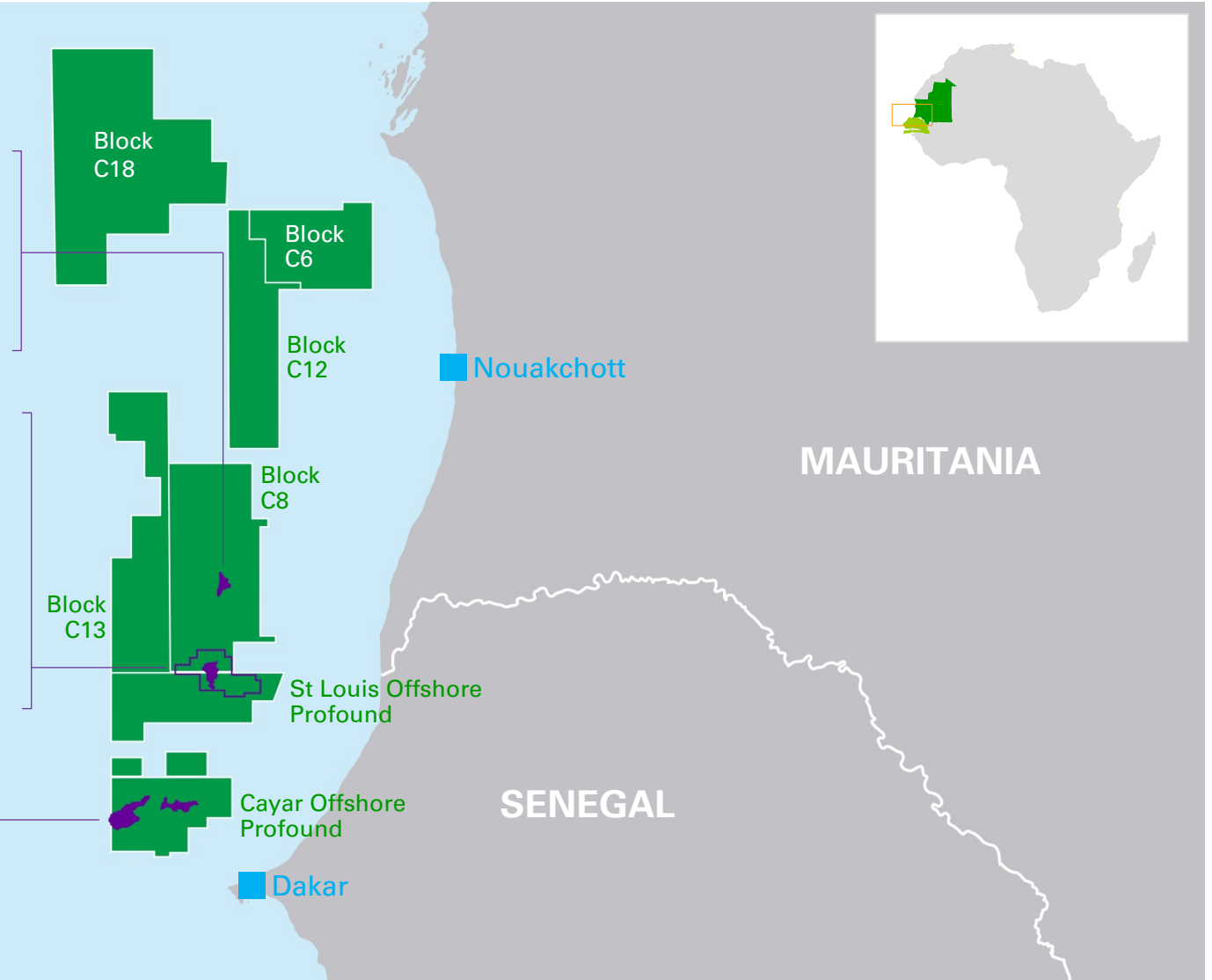
- 12-60tcf GIIP¹
- 2019 appraisal programme

Tortue

- ~15tcf recoverable resource
- Near-shore LNG
- Phased development
 - Phase 1 ~2.5mtpa by 2022
 - Full field development ~10mtpa

Yakaar Teranga

- 10-25tcf GIIP¹
- 2019 appraisal programme



(1) Gas initially in place



BPX Energy

Dave Lawler
CEO, BPX Energy

Brian Pugh
COO, BPX Energy



BPX Energy core values, mission, and strategy

bp^xenergy

Core values

- Safety and the environment

Mission

- Build a premier independent onshore business focused on delivering free cash flow growth

Strategy

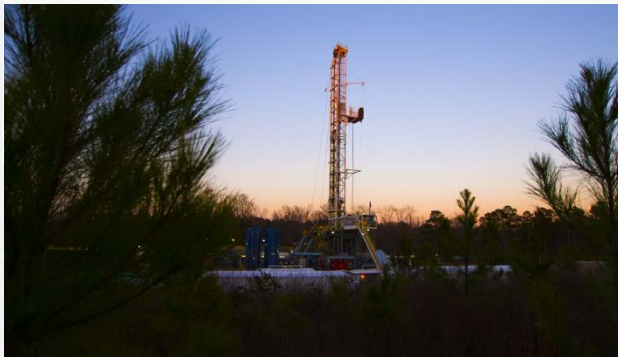
- Develop newly acquired and legacy shale plays through efficient capital investment and advanced technology



Mission delivery

Proven assets

Proven top-tier assets located in the core of the **Permian, Eagle Ford** and **Haynesville** shale plays



Proven track record

Proven track record of execution



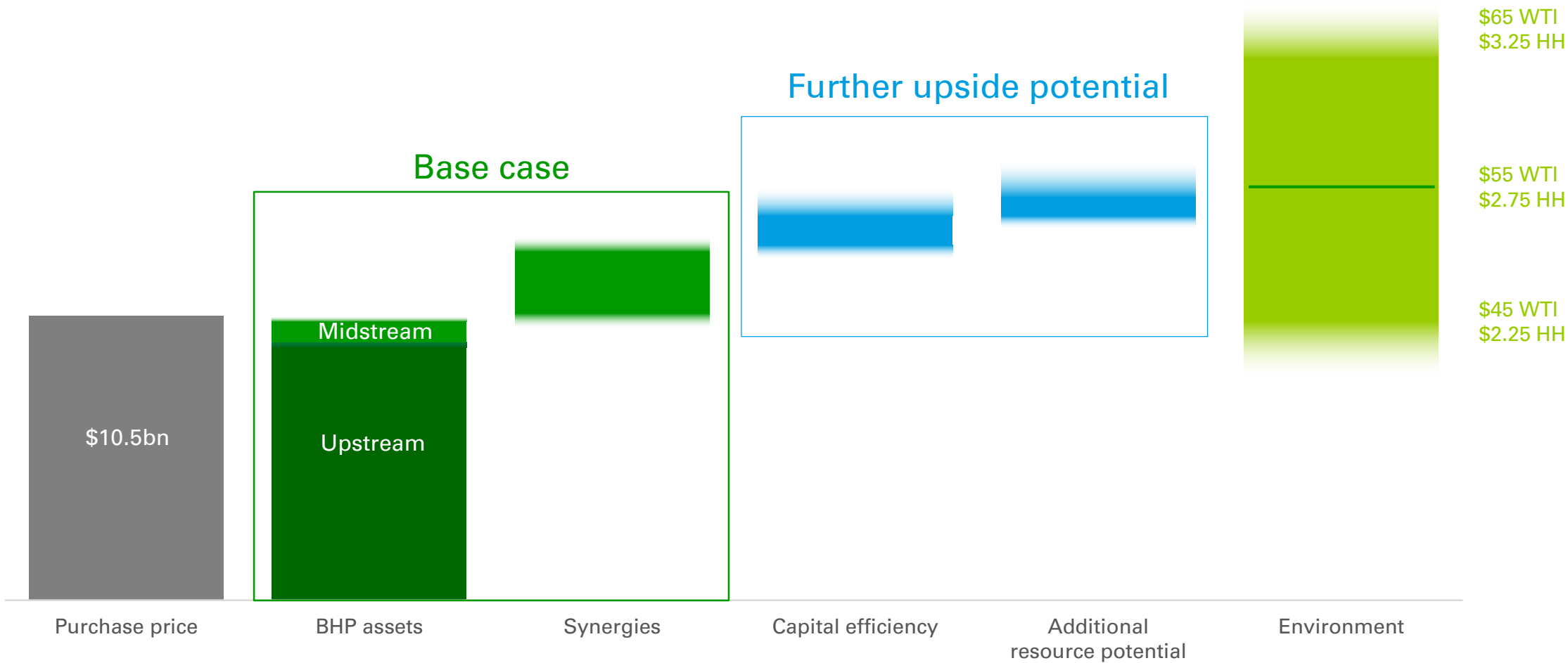
Material free cash flow growth

Material free cash flow growth achieved through **synergies, capital efficiency,** and **development of additional zones**



BHP acquisition – base case + upside¹

increasing confidence that value creation can exceed model

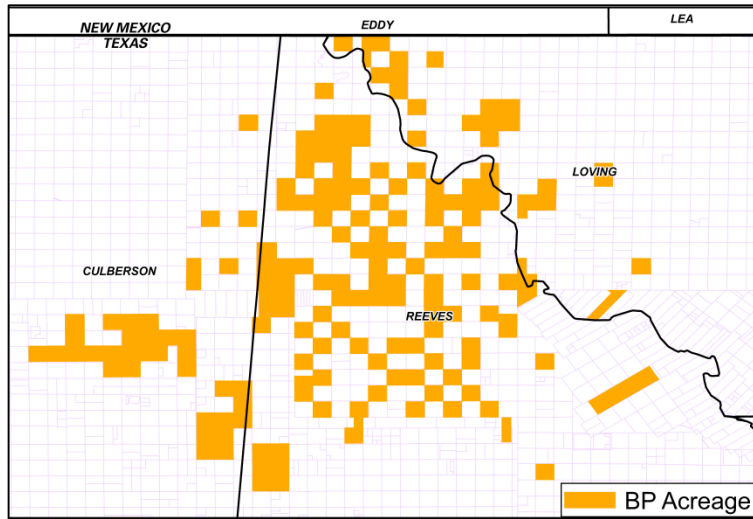


Third-party reserve report confirms >70% of acquisition value is proved reserves²

(1) NPV = net present value at 10% discount rate, \$55/bbl WTI, and Midland discount of \$7/bbl near term and around \$2/bbl longer term, \$2.75/mmBtu Henry Hub (2018 real). Indicative values only
(2) Preliminary 2018 SEC pricing - \$66/bbl oil, \$32/bbl NGLs and \$2.95/mmBtu Henry Hub

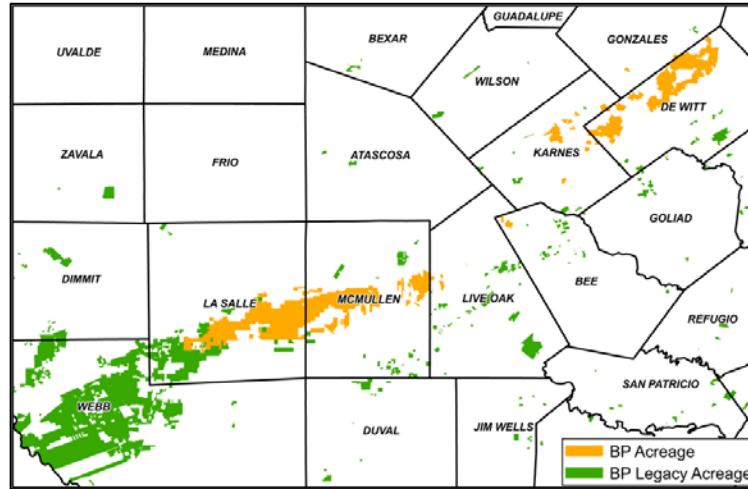
Proven Permian, Eagle Ford, and Haynesville acreage

Permian



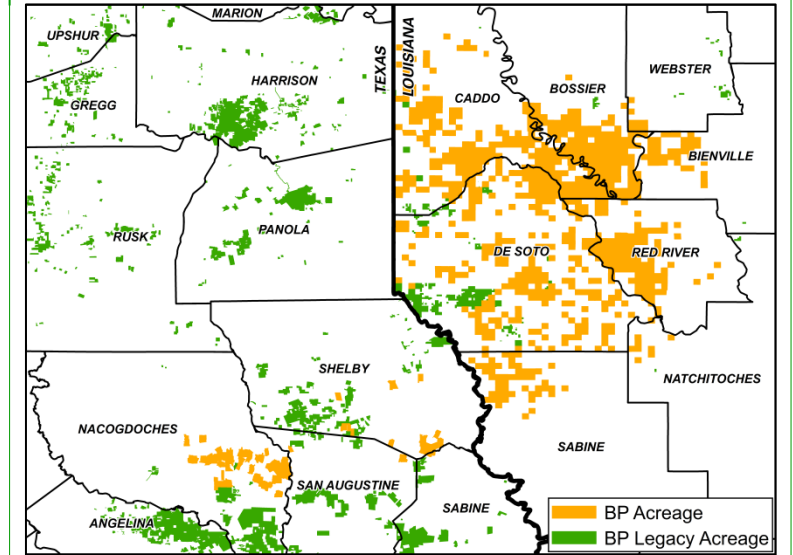
- 128 active rigs in Reeves, Culberson and Loving counties
- >1,800 wells since 2017, with average IP30 of 1.1mboed
- >25% of these wells with IP30s >1.5mboed

Eagle Ford



- 44 active rigs across 5 counties
- >1,800 wells in Eagle Ford since 2017, with average IP30 of 1.2mboed
- In under-developed Austin Chalk, 130 wells since 2017, with average IP30 of 1.7mboed

Haynesville



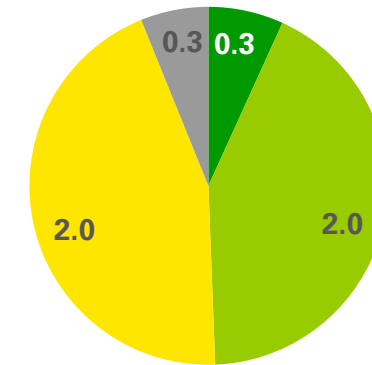
- 51 active rigs in Haynesville
- >275 wells since 2018, with average IP30 >1.7mboed
- Wells produce consistently over time, with low initial decline rate

Stellar economics across a range of prices

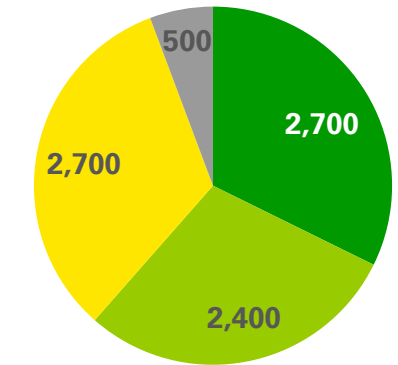
- 4.6bn boe resource base from BHP US onshore asset acquisition
- Highly economic across a variety of price ranges
- Short-cycle position, largely held by production
- Additional resource potential
 - Austin Chalk (Eagle Ford)
 - Avalon and Bone Springs (Permian)
 - Additional Wolfcamp zones (Permian)
 - Bossier shale (Haynesville)

Breakeven WTI¹

Resources
bn boe

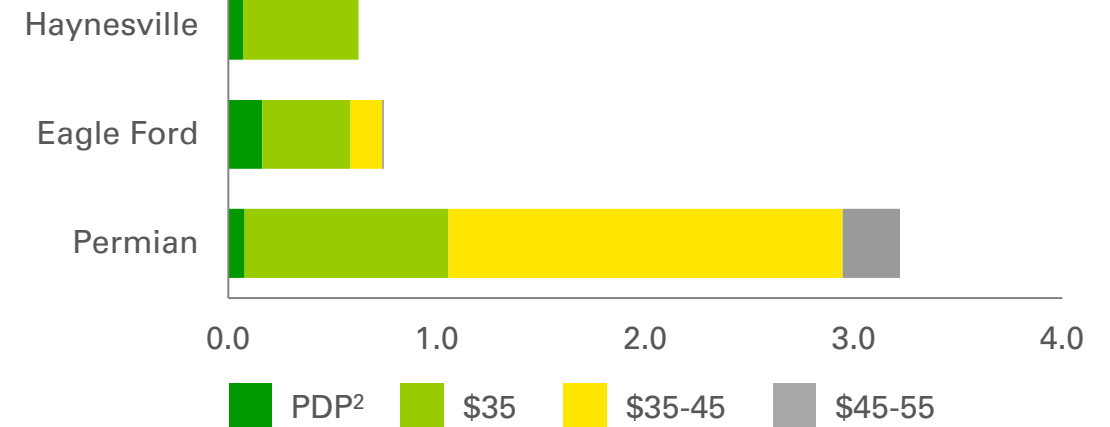


Locations



Resources by play

bn boe



(1) Breakeven calculated per well using post-tax PV10, \$3/mmBtu Henry Hub gas. Real 2018 prices

(2) Proved developed producing

Synergies – >\$350m annually from three categories

On track to deliver synergies ahead of plan

General & administrative **\$200-220m**

- Scaled engineering and development teams
- Reduced back-office headcount
- Simplified support processes



Production cost **\$100-120m**

- Intelligent Operations
- Supply chain optimisation



Financial **\$50-60m**

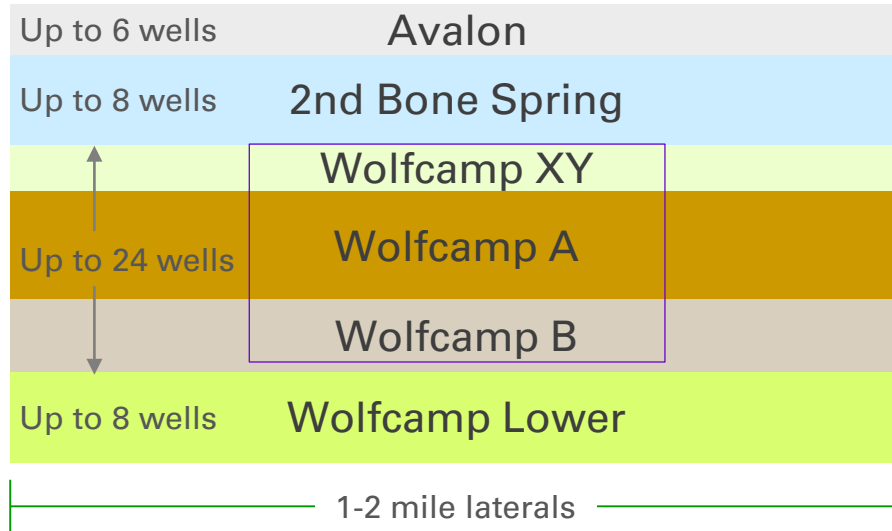
- Trading
- Fiscal



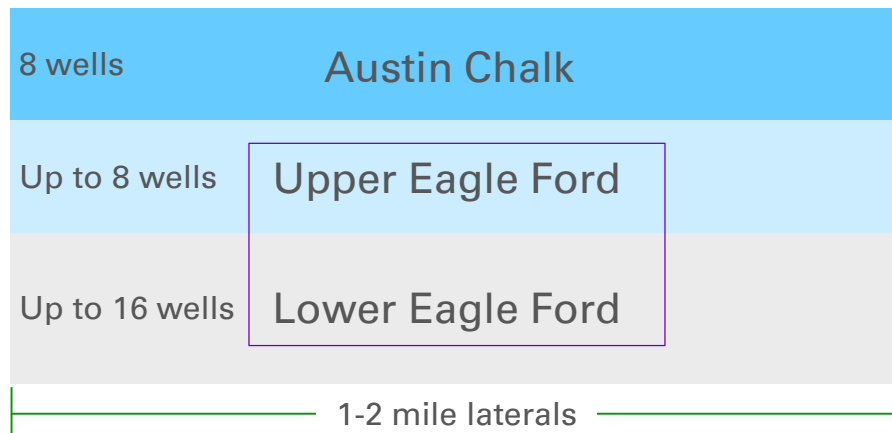
Capital efficiency – primary development

high-density, multi-zone, long-lateral development strategy

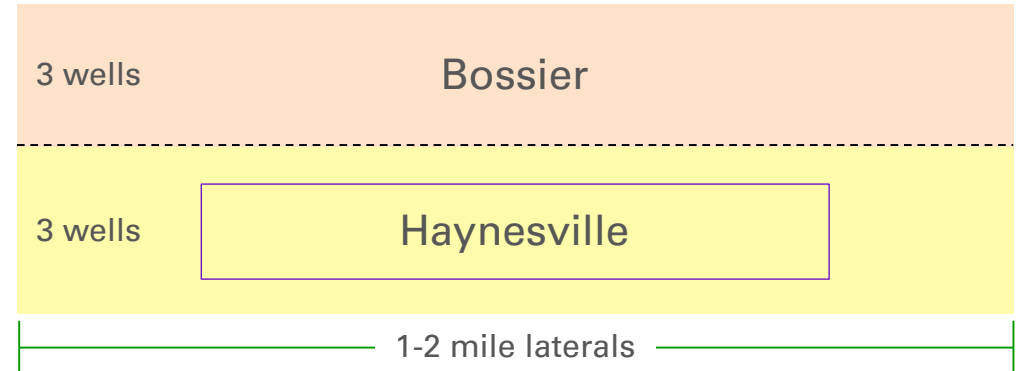
Permian subsurface



Eagle Ford subsurface



Haynesville subsurface (including legacy)

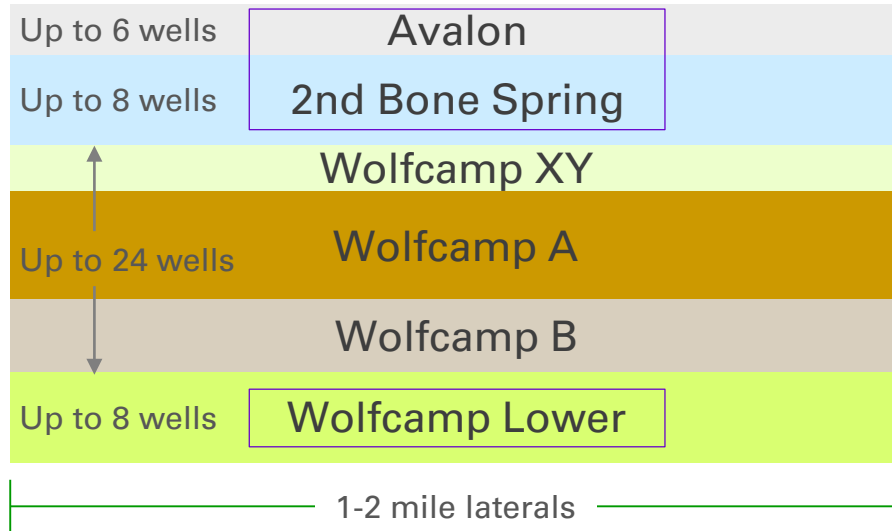


- High-density, long-lateral, multi-zone, sectional development leads to significant improvements in capital efficiency
- Optimised full life cycle artificial lift to increase production and reduce cost
- Multi-lateral well planning underway in all plays

Additional resource potential

under-developed zones prevalent across three plays

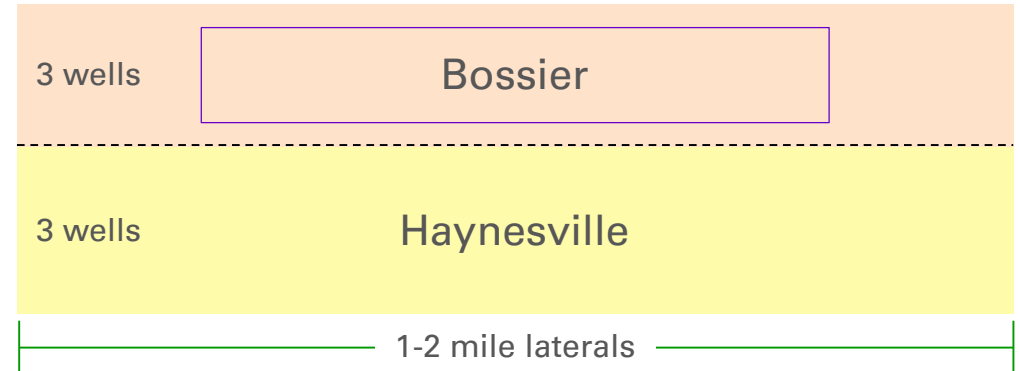
Permian subsurface



Eagle Ford subsurface



Haynesville subsurface (including legacy)

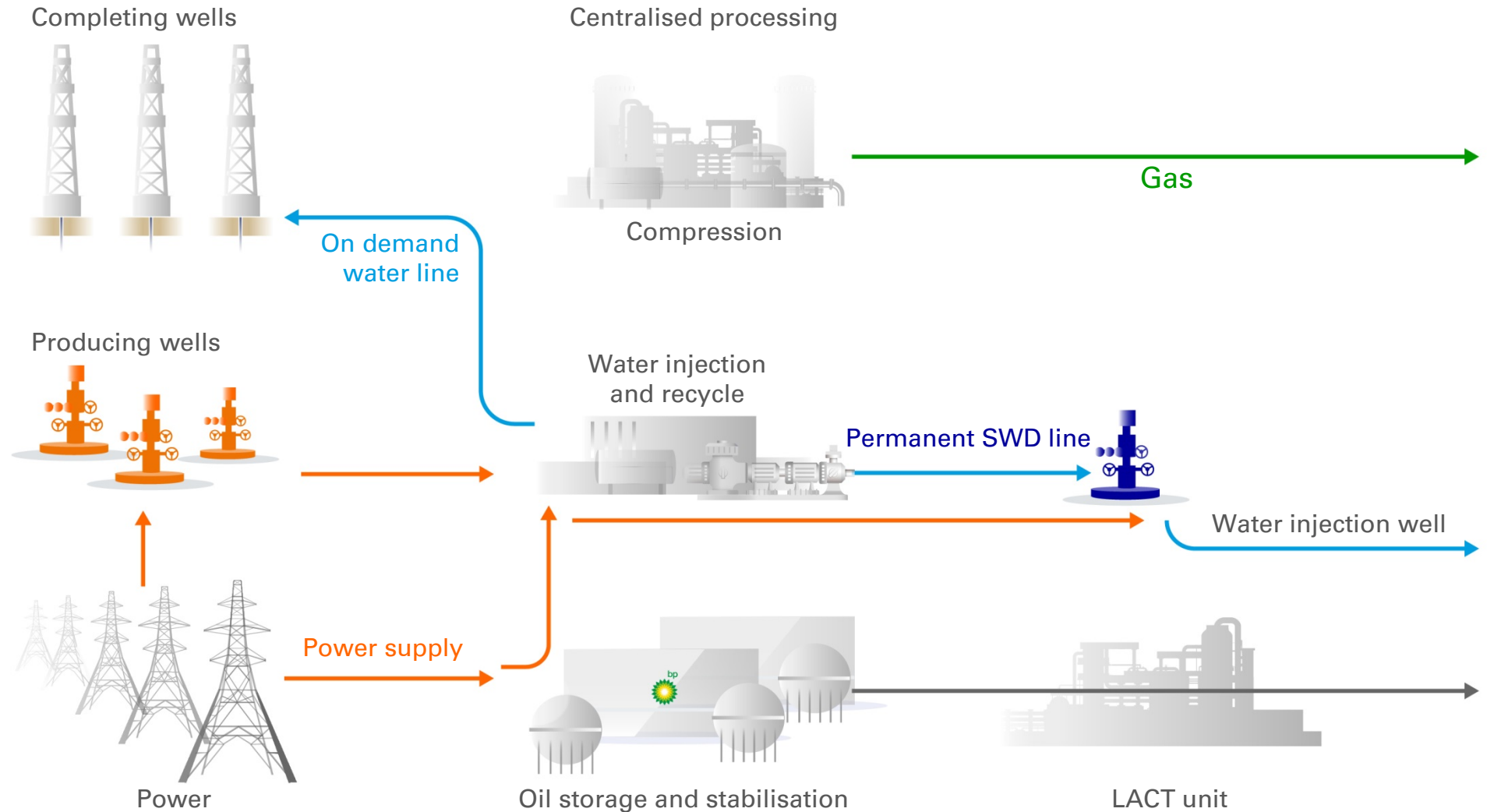


- Multiple benches comprise over 4,000ft of premium gross interval in Permian
- Over 600ft of gross interval in Eagle Ford and the prolific Austin Chalk, with industry-leading returns
- 500ft of combined Haynesville and Bossier targets in both Texas and Louisiana

Permian integrated development plan

installation of midstream assets to improve capital efficiency and decrease operating costs

- Controlling midstream assets aligns the entire value chain for more efficient development
- Oil handling significantly improves price realizations through reduced trucking
- Electrical infrastructure enables optimum life-cycle artificial lift applications

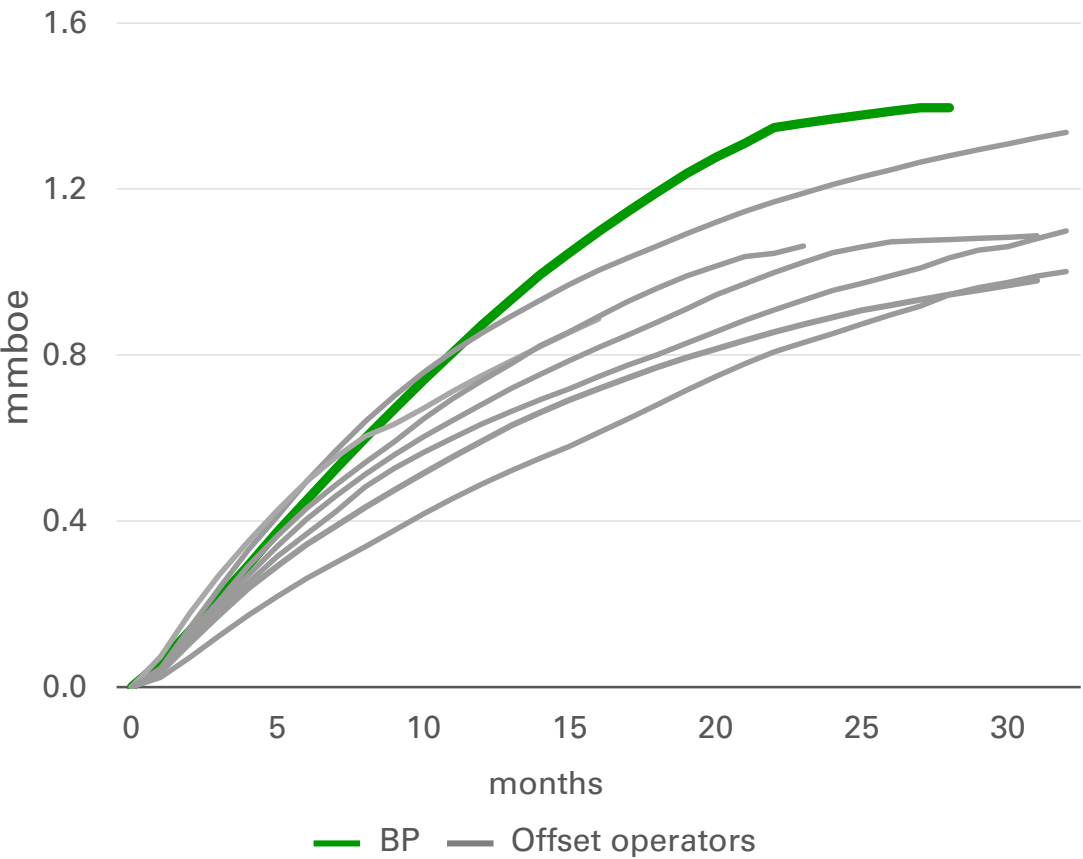


Proven track record

established top tier performance in legacy Southern Haynesville play

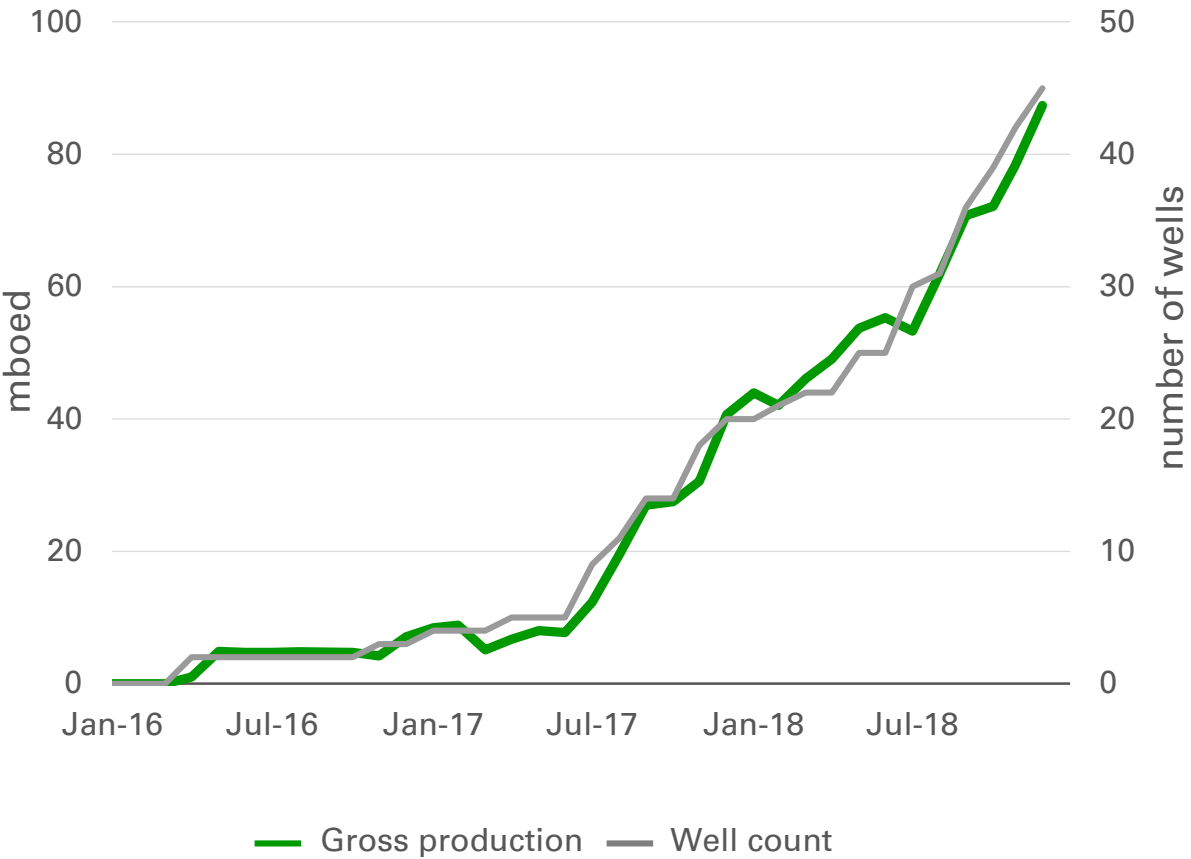
Average single well cumulative production

cumulative gross gas volume, mmboe



BPX gross production in Haynesville

gross production, mboed, number of wells



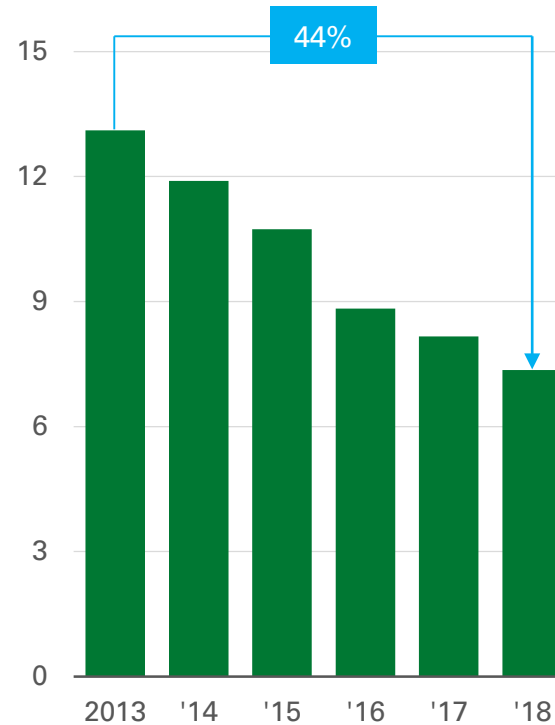
Proven track record

material cost reduction achieved through proprietary intelligent operations model

- **Traditional operating model:** disparate systems and data silo information require labor intensive processes to manage outcomes
- **Intelligent operations model**
 - Real time data aggregation
 - Analytics backed data visualisation
 - Advanced algorithms
 - Advanced technology (augmented reality, drones, smart glasses, etc)

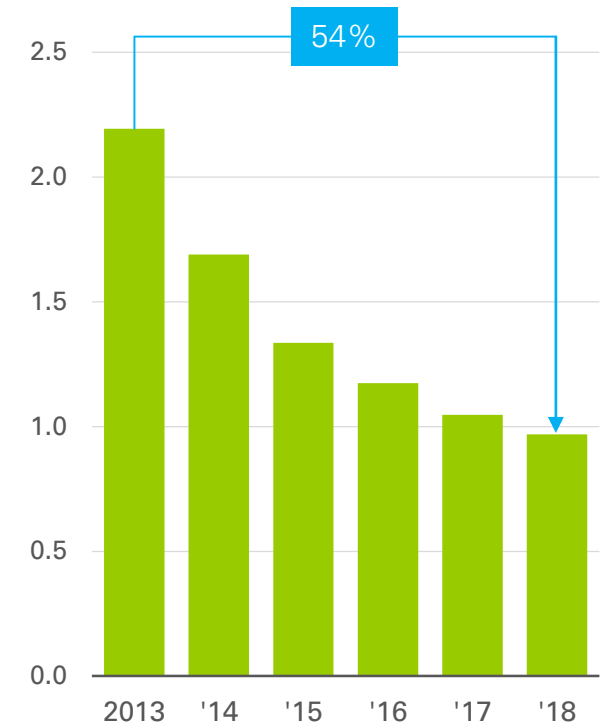
Company operated unit production costs

\$/bbl



Headcount

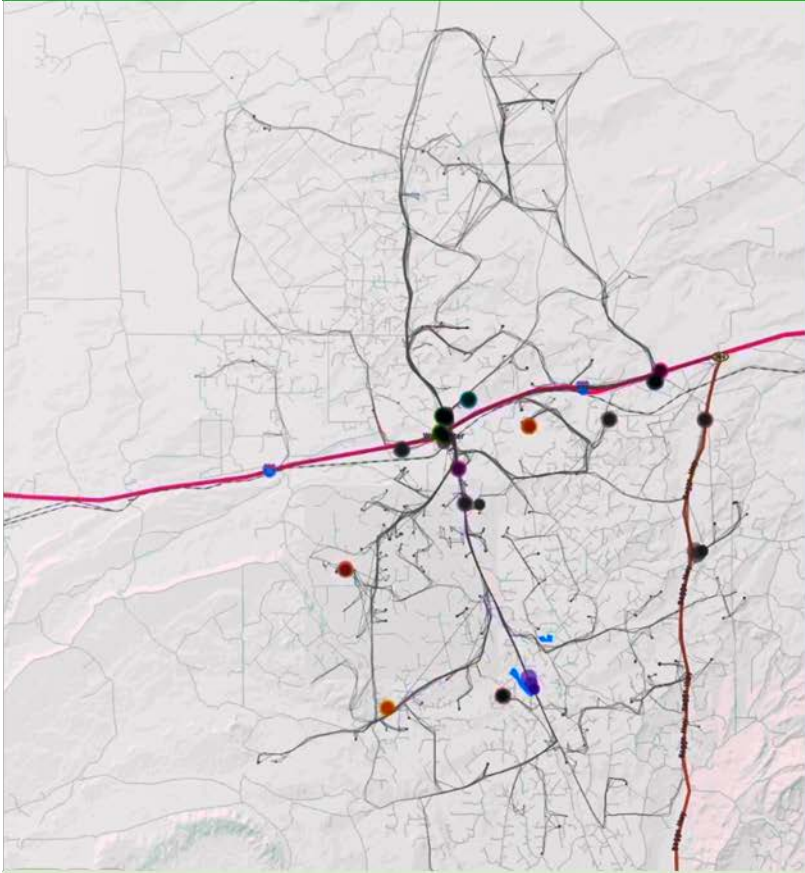
'000s



Intelligent operations example

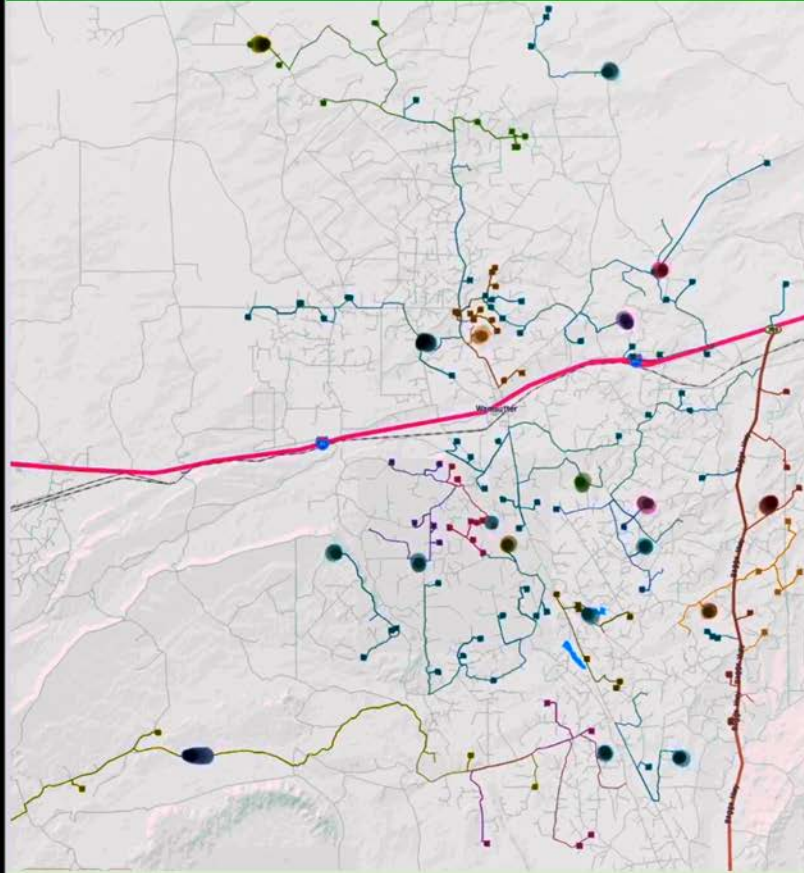
algorithm based work management system

Traditional operating model



▪ 40 workers performing 183 jobs

Algorithm-based BPX Arrow



▪ 23 workers performing 202 jobs

Proprietary system more efficiently manages workforce & activity

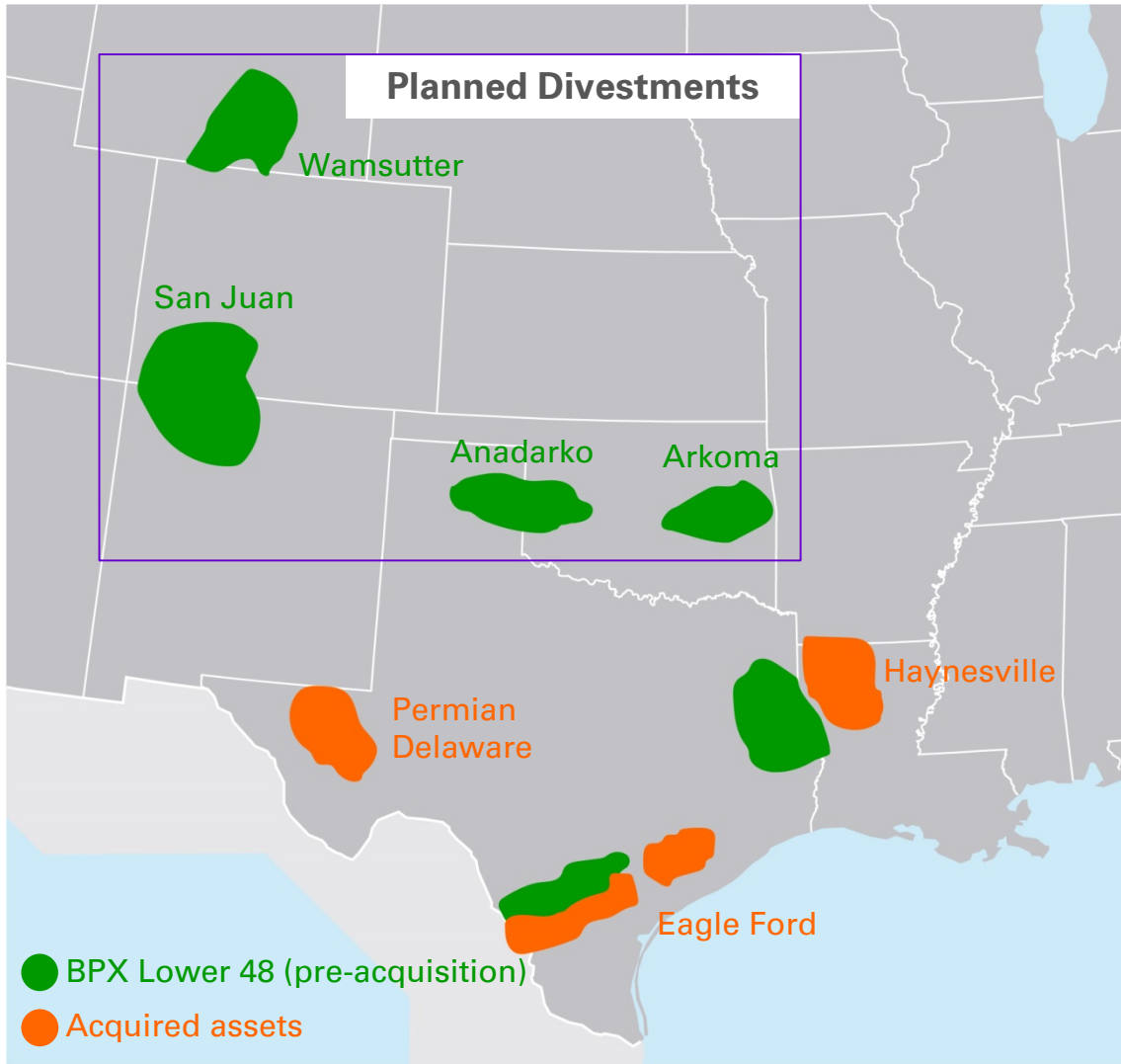
43% fewer workers doing 10% more work, with higher value

- Directly translates to acquired assets
- Creates value through cost savings and revenue maximisation

Near term development – Permian, Eagle Ford & Haynesville

2019 Plan

2019 capital	~\$2bn
Rig count	16 operated rigs
2019 wells to be drilled	>250



2019-2021 Plan

Capital p.a.	~\$2-2.5bn
Rig count	15-25 operated rigs
	<ul style="list-style-type: none">▪ 5-10 in Permian▪ 5-6 in Eagle Ford▪ 4-6 in Haynesville

Transforming the portfolio

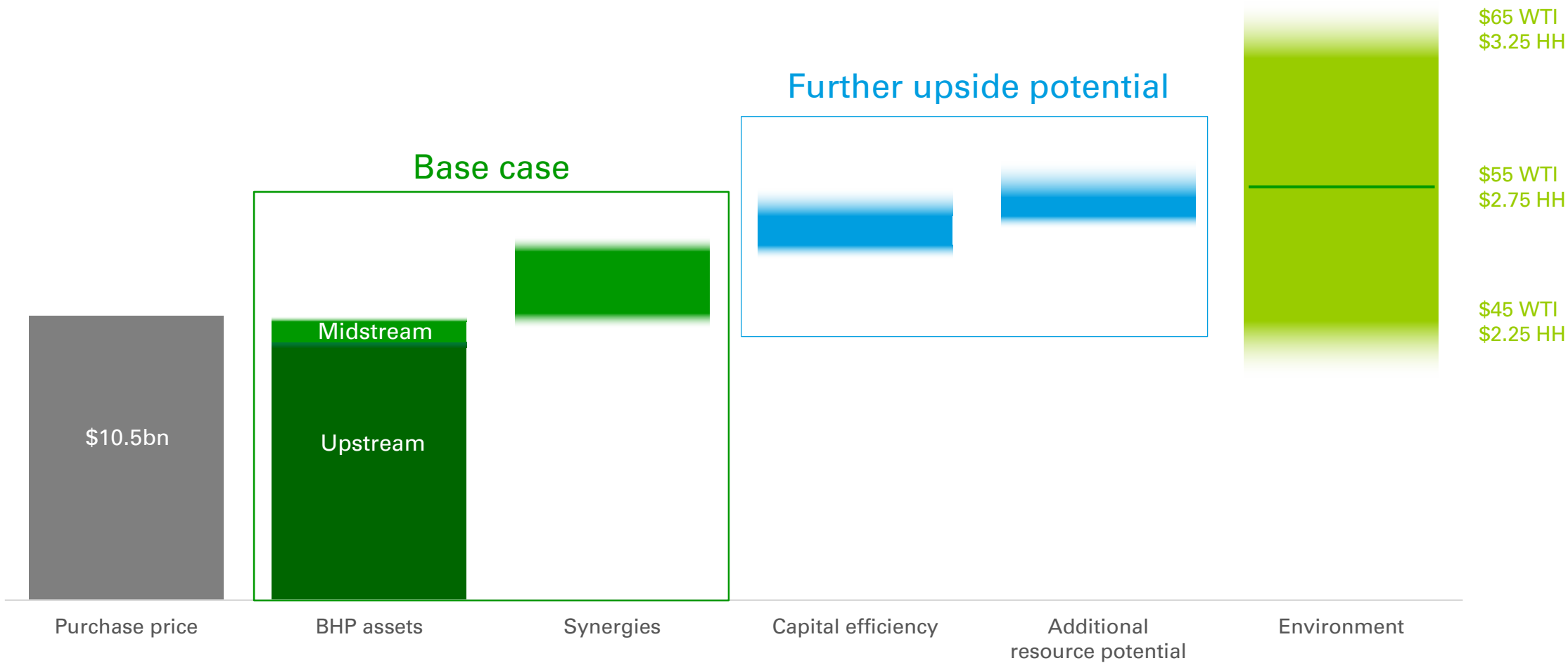
simplifying the business and increasing liquids production

	BP Lower 48 before acquisition (2018)	BPX Energy post-integration (2021)
Operated wells	9,400	3,500
Basins	6	3
Capital budget	~\$950m	~\$2-2.5bn
Production¹	315mboed	~500mboed
Oil % of production mix	~5%	~25%

(1) Net of legacy asset divestitures in 2019 and 2020

BHP acquisition – base case + upside¹

increasing confidence that value creation can exceed model



Third-party reserve report confirms >70% of acquisition value is proved reserves²

(1) NPV = net present value at 10% discount rate, \$55/bbl WTI, and Midland discount of \$7/bbl near term and around \$2/bbl longer term, \$2.75/mmBtu Henry Hub (2018 real). Indicative values only
(2) Preliminary 2018 SEC pricing - \$66/bbl oil, \$32/bbl NGLs and \$2.95/mmBtu Henry Hub

Upstream Investor Day & Fieldtrip Oman 2018

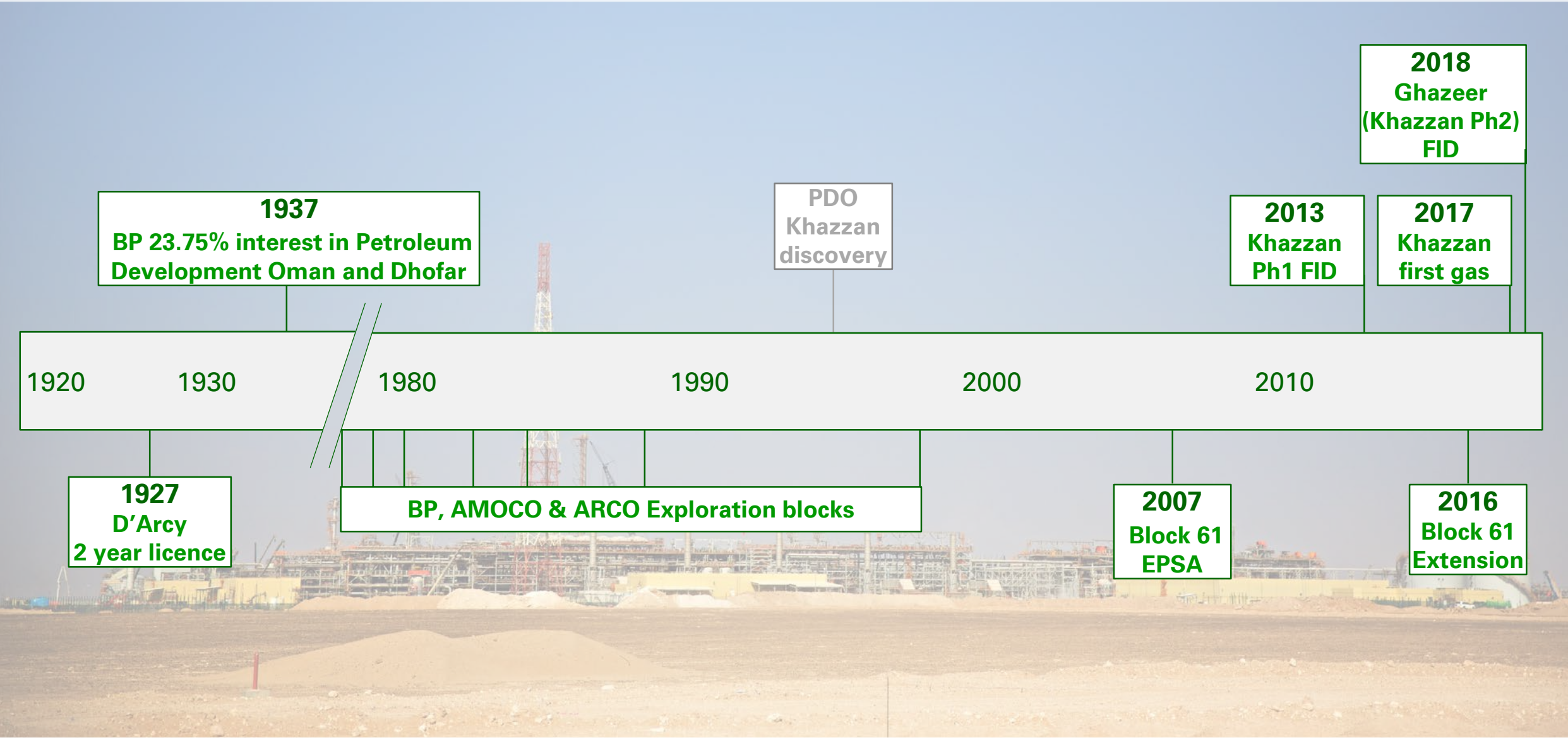


Oman

Michael Townshend
Regional President,
Middle East



BP in Oman – history



Largest tight gas development in Middle East

Block 61 interest

BP **60%**

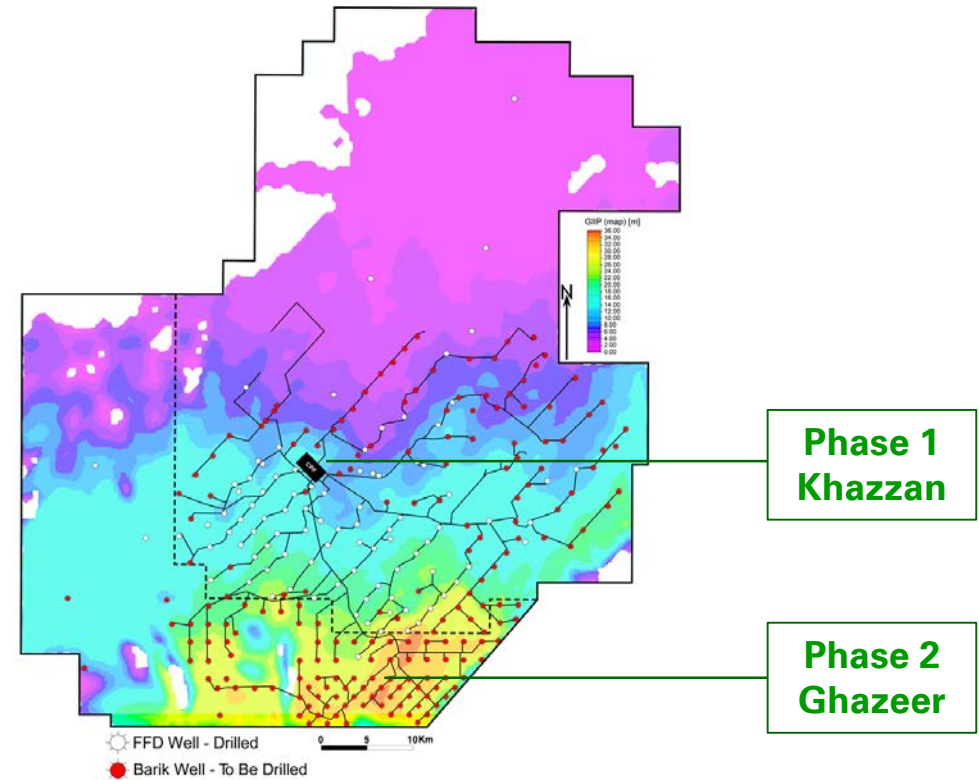
OOCEP¹ 30%

PETRONAS² 10%

**Phase 1
Khazzan** **1bcfd, 25mboed
condensate**

**Phase 2
Ghazeer
plan** **First gas 2021
0.5bcfd gas
30mboed condensate**

Khazzan and Ghazeer
fields combined 2,550km²



- 13,500 construction workforce at peak
- 300 operations staff
- 650 employees
 - >75% Omani
- \$1.3bn local content
- Khazzan produces 25% of Oman supply, meeting domestic demand and enabling export at full LNG capacity

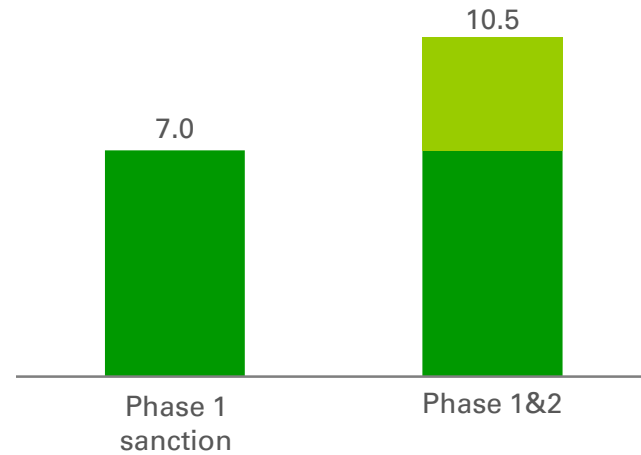
(1) Oman Oil Company Exploration & Production
(2) Subject to completion

Khazzan project progress and plan

Expected recoverable gas

gross tcf

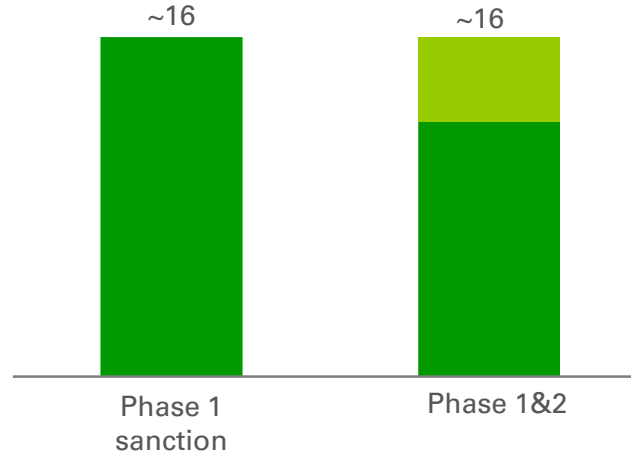
■ Khazzan ■ Ghazeer



Development capital

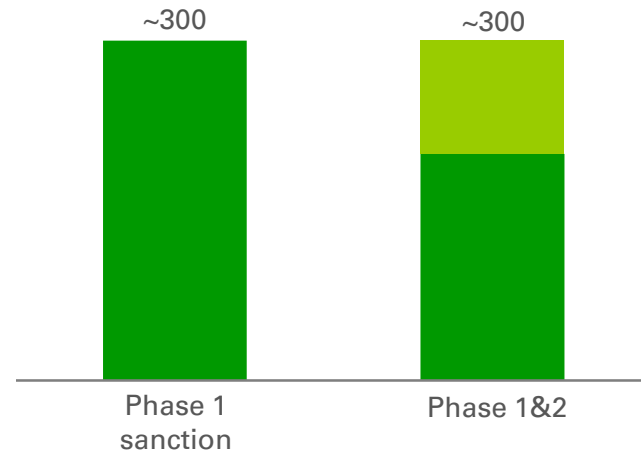
gross \$bn

■ Khazzan ■ Ghazeer



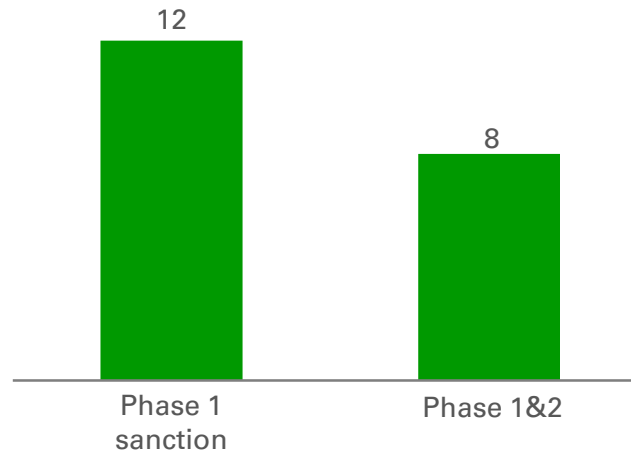
Well count

■ Khazzan ■ Ghazeer



Development cost

\$/boe



2018 highlights:

- ADIPEC Awards – Digital transformation project of the year
- Eleven rigs to four
- Top quartile vertical well cost
- ~ 30% higher rate per well
- 95% operating efficiency
- ~\$3.0/boe production cost
- Plant test >1.25bcfd

Optimisation examples:

- Planning: SIRAAJ
- Production: APEX/ARGUS
- Well design/execution: fracture imaging, auto-ROP¹

(1) ROP – rate of penetration

Project progress – Khazzan Phase 2 (Ghazeer)



First structural concrete pour for utility area foundations in the brownfield (live plant)

- 3rd gas train and 2nd condensate train
- New gas export pipeline
- ~7% ahead of plan
- First gas expected in 2021

- Strong safety performance and culture
- Copy and clone to drive simplicity with lessons learned
- 100 wells

Ongoing installation of pipe rack construction on gas processing train 3



Beyond 2020 – future growth

Block 61

- Increase recovery beyond 10.5tcf
- Get close to 2bcfd with a 1.5bcfd plant
- Maximise condensate production



Downstream

- Gas market development options including acetic acid

Exploration

- Discussions with government ongoing