



Natural Gas – Pathway to a Sustainable Future

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Definitions and cautionary note

Reserves: Our use of the term “reserves” in this presentation means SEC proved oil and gas reserves. Resources: Our use of the term “resources” in this presentation includes quantities of oil and gas not yet classified as SEC proved oil and gas reserves. Resources are consistent with the Society of Petroleum Engineers (SPE) 2P + 2C definitions.

Operating costs are defined as underlying operating expenses, which are operating expenses less identified items. Organic free cash flow is defined as free cash flow excluding inorganic capital investment and divestment proceeds. Clean CCS ROACE (Return on Average Capital Employed) is defined as defined as the sum of CCS earnings attributable to shareholders excluding identified items for the current and previous three quarters, as a percentage of the average capital employed for the same period. Capital employed consists of total equity, current debt and non-current debt. Capital investment comprises capital expenditure, exploration expense excluding well write-offs, new investments in joint ventures and associates, new finance leases and investments in Integrated Gas, Upstream and Downstream securities, all of which on an accruals basis. In 2016, the capital investment was impacted by the acquisition of BG Group plc, which are included in “Change in non-controlling interest” within “Cash flow from financing (CFFF) activities”. Divestments comprises proceeds from sale of property, plant and equipment and businesses, joint ventures and associates, and other Integrated Gas, Upstream and Downstream investments, reported in “Cash flow from investing activities (CFFI)”, adjusted onto an accruals basis and for any share consideration received or contingent consideration recognised upon divestment, as well as proceeds from the sale of interests in entities while retaining control (for example, proceeds from sale of interest in Shell Midstream Partners, L.P.). This presentation contains the following forward-looking Non-GAAP measures: Organic Free Cash Flow, Free Cash Flow, Capital Investment, CCS Earnings, CCS Earnings less identified items, Gearing, Underlying Operating Expenses, ROACE, Capital Employed and Divestments. We are unable to provide a reconciliation of the above forward-looking Non-GAAP measures to the most comparable GAAP financial measures because certain information needed to reconcile the above Non-GAAP measure to the most comparable GAAP financial measure is dependent on future events some which are outside the control of the company, such as oil and gas prices, interest rates and exchange rates. Moreover, estimating such GAAP measures consistent with the company accounting policies and the required precision necessary to provide a meaningful reconciliation is extremely difficult and could not be accomplished without unreasonable effort. Non-GAAP measures in respect of future periods which cannot be reconciled to the most comparable GAAP financial measure are calculated in a manner which is consistent with the accounting policies applied in Royal Dutch Shell plc’s financial statements. The financial measures provided by strategic themes represent a notional allocation of ROACE, capital employed, capital investment, free cash flow, organic free cash flow and underlying operating expenses of Shell’s strategic themes. Shell’s segment reporting under IFRS 8 remains Integrated Gas, Upstream, Downstream and Corporate.

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105 years in Brazil



1913 Activities begin with the Anglo-Mexican Petroleum Products



1957 Shell opens first gas station in Brasilia



1975 Partnership with Petrobras

1997 Acquisition of interest in Comgas



2000 First International Oil company to explore the Campos Basin



2003 First company to produce after state monopoly eases



2009 Production from Parque das Conchas



2011 Raizen formation



2013 Libra auction



2016 Shell e BG operate as one company

2017 Acquisition of 3 new areas – 2nd and 3rd PSC

2017 Shell Energy Brasil (SEB) launched

2018 Acquisition of 6 new areas – 4th and 5th PSC and 15th Round

Deep Water

360 kboe/d
avg. production Q4/17

Largest foreign investor
in Upstream



Some images courtesy of Petrobras

11 partners in Deepwater projects

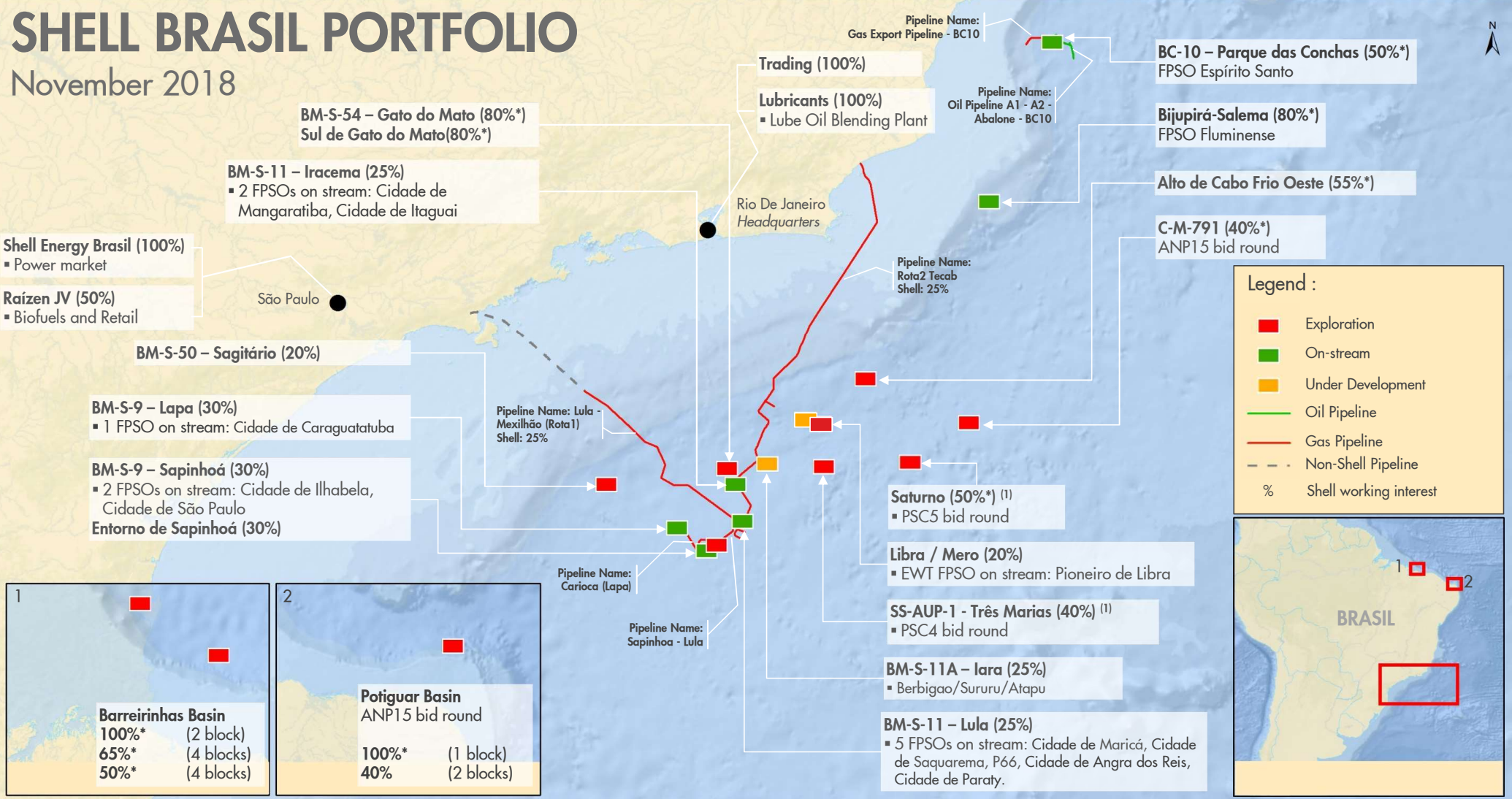
16 FPSOs
on stream YE 2018

Present in **27** agreements
Operator in **19**

March 2018

SHELL BRASIL PORTFOLIO

November 2018



The energy challenge

01



Growing Population

According to the World Bank, global population is expected to increase from around 7 billion today to over 9 billion by 2050, with 66% living in cities.

02



Rising Demand

Over a billion people continue to live without electricity while another billion struggle with unreliable supplies of electricity. According to the International Energy Agency (IEA) New Policies Scenario, global energy demand is expected to grow by 30% between 2015 and 2040.

03



Ongoing Supply

As per IEA, it is expected that renewable energy could increase significantly by 2040. However, we will still need large amounts of oil and gas to provide the full range of energy products that the world needs.

04



Mitigating Climate Change

The world currently emits 32 billion tonnes of energy-related CO₂ each year. To limit the rise in global temperature to 2°C, the IEA has calculated that energy related CO₂ emissions need to fall to around 18 billion tonnes a year by 2040.

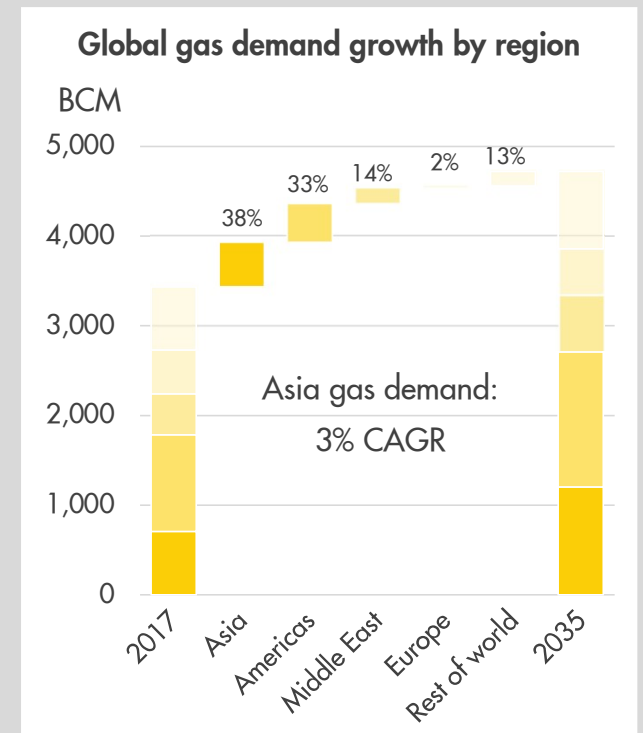
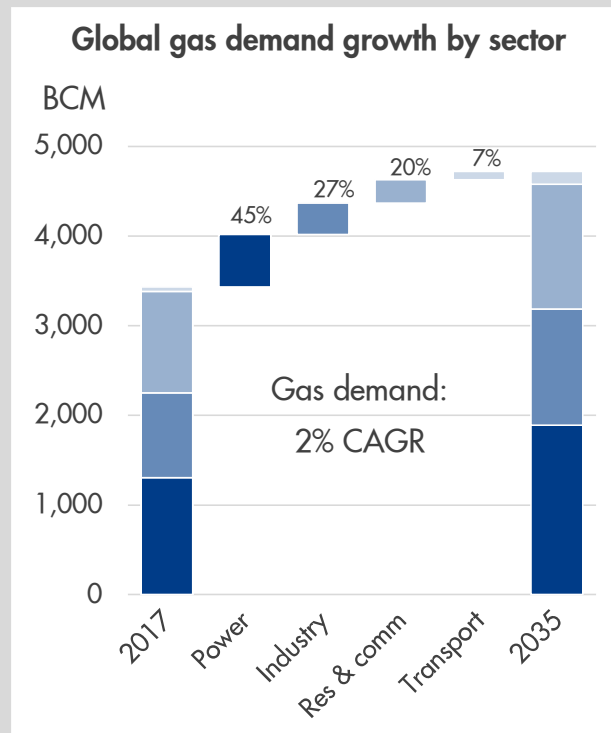
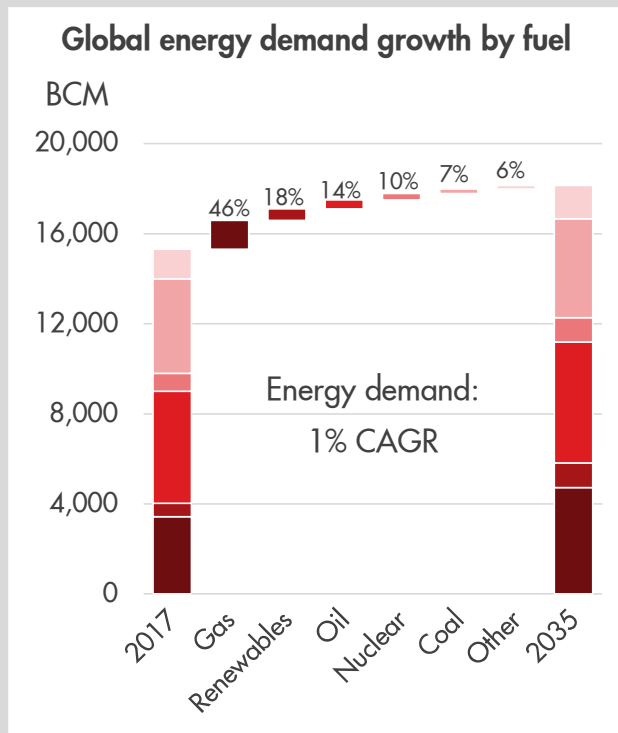
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Improving Air Quality

The World Health Organization (WHO) has found that outdoor air pollution in both cities and rural areas is estimated to cause some 3 million premature deaths a year worldwide.

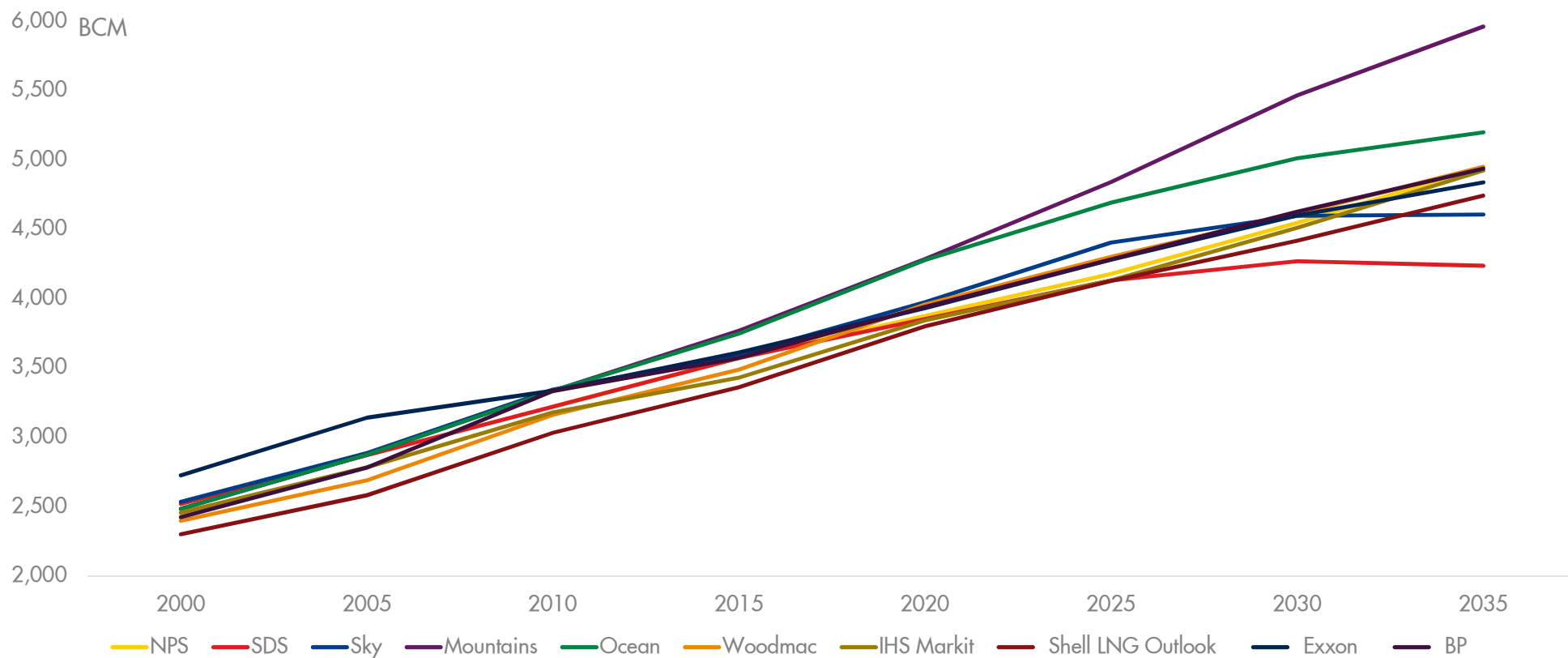
Gas plays growing role to meet energy challenge



Source: Shell interpretation of Wood Mackenzie Q4 2017 data

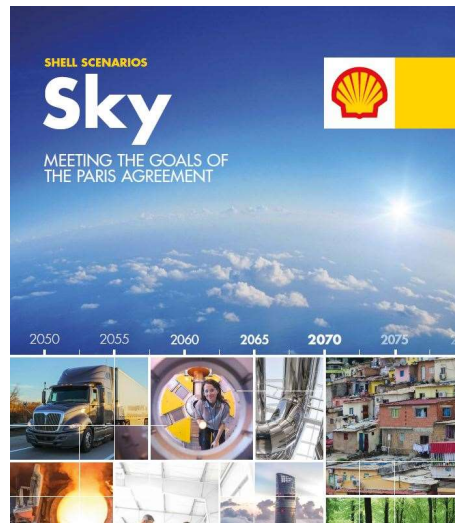
CAGR - Compound Annual Growth Rate

Total global gas demand outlooks / scenarios



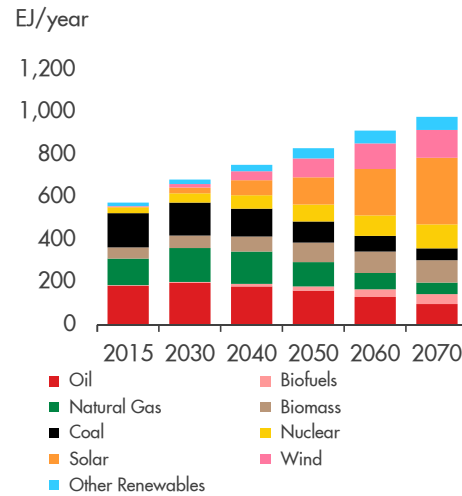
Sky – Meeting the goals of the Paris agreement

New scenario launched March 2018



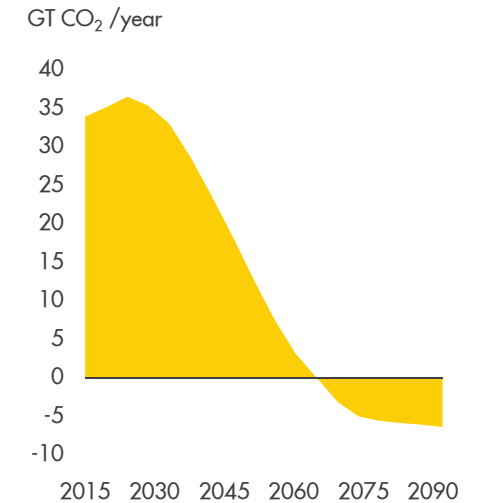
- Grounded in current energy system
- NDC¹ process ratchets aggressively to 2030
- Progressively becomes goal-driven ('normative') to meet Paris aims
- Unprecedented and sustained collaboration required

World primary energy by source



- Deep electrification, global power generation grows by factor of five
- Aggressive efficiency improvement
- Liquid and gaseous fuels remain in hard-to-electrify sectors
- Renewables largest sources of energy from 2050s

World total CO₂ emissions from energy



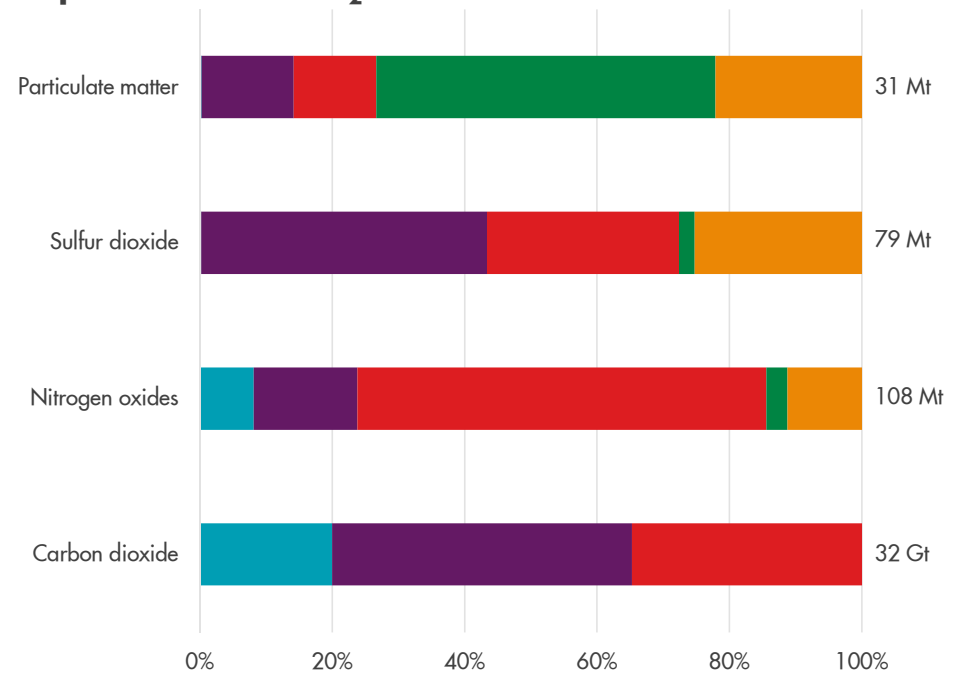
- CO₂ emissions peak in 2020s
- Net-zero emissions by 2070
- Sky scenario impact estimated at around 1.75°C
- Additional potential from greater reforestation
- Collaboration with MIT²

¹ Nationally Determined Contributions; ² Massachusetts Institute of Technology

Natural gas in the energy transition

- One of the few energy sources that can be used across all sectors of the global economy – to generate electricity, provide heat for essential industrial processes, heat homes and fuel the transport of people and goods
- Supporting the integration of variable renewable electricity generation
- Helping to meet increasing demand for energy while lowering greenhouse gas emissions and improving air quality

Share of natural gas in total energy-related emissions of air pollutants and CO₂

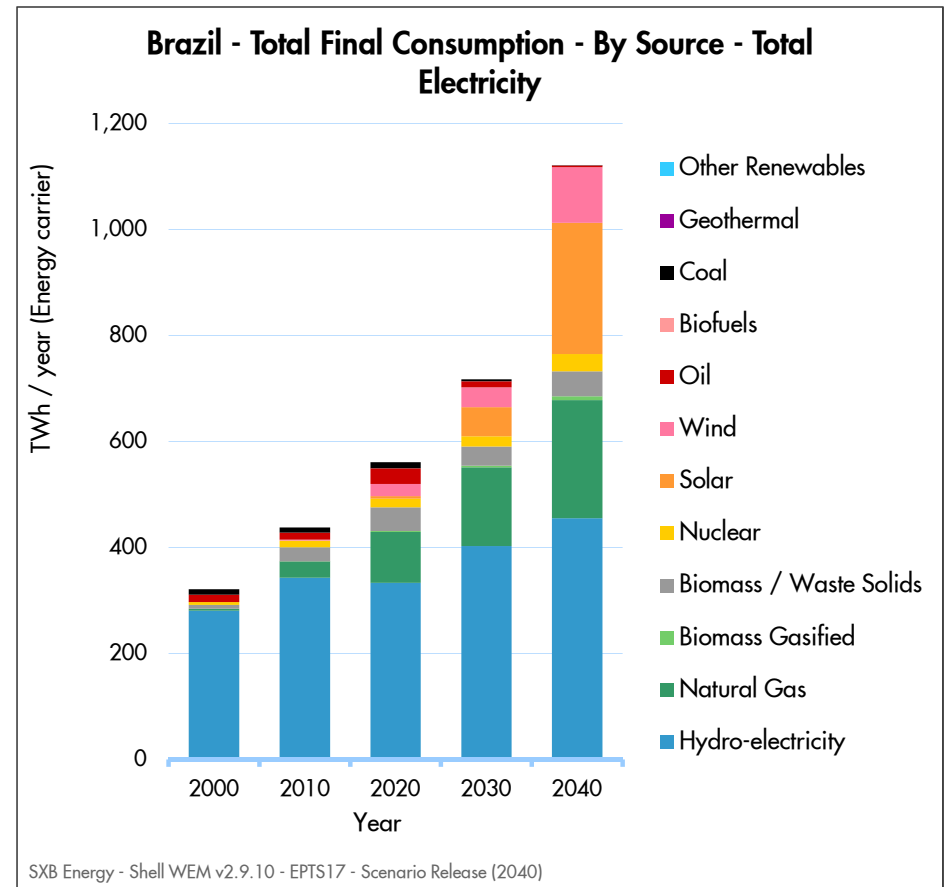
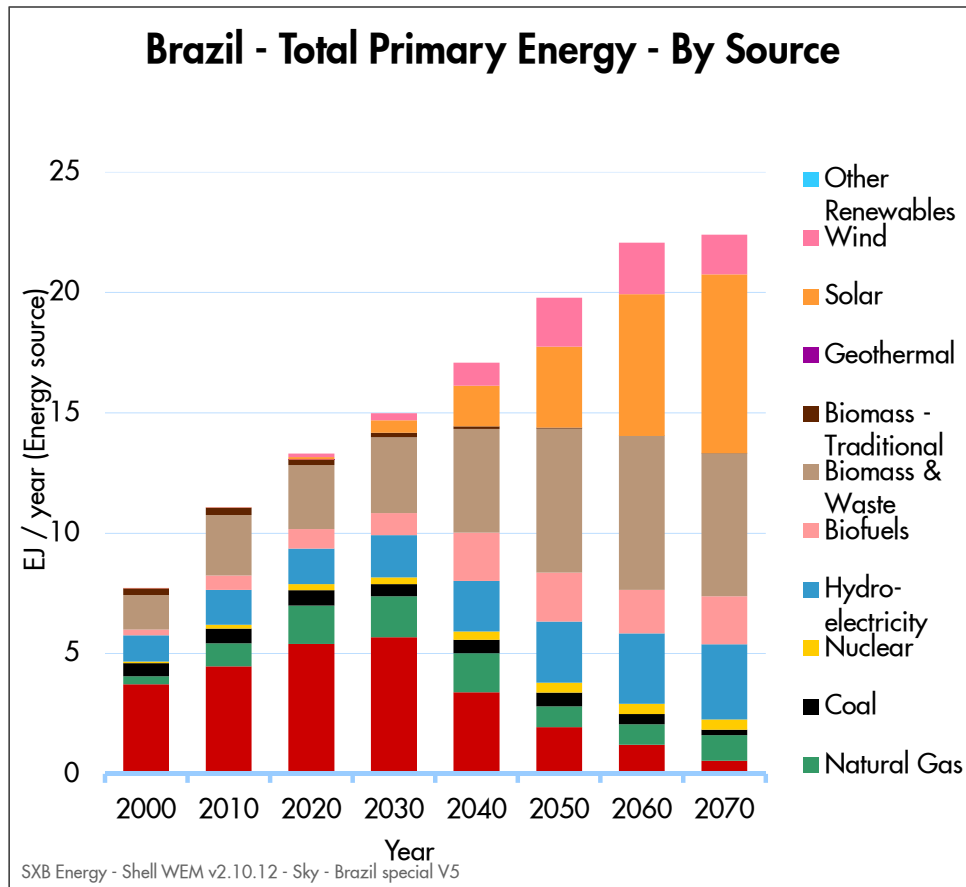


Source: IEA Analysis

■ Gas ■ Coal ■ Oil ■ Bioenergy ■ Non-combustion

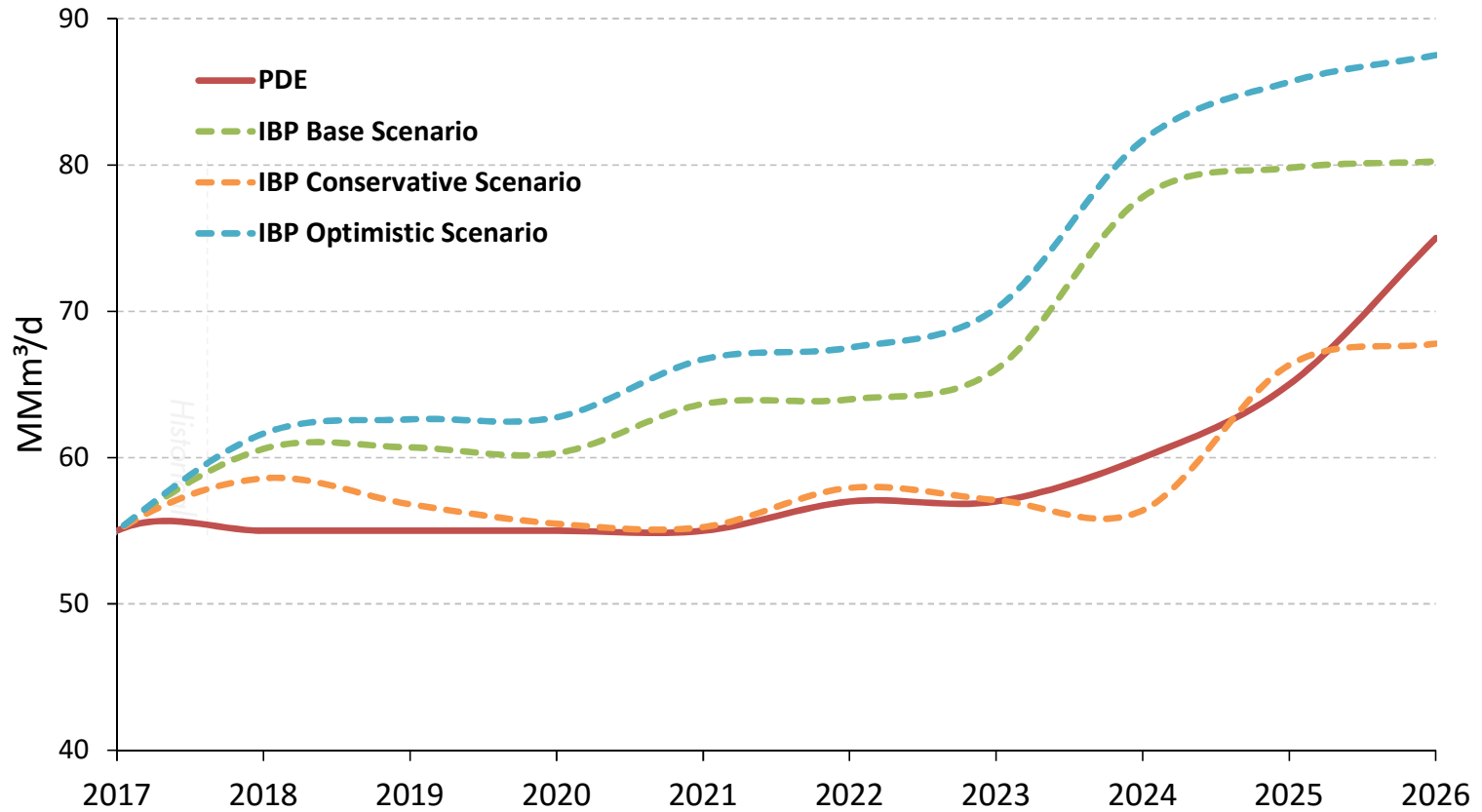
Data are for 2015: Mt = million tonnes, Gt = gigatonnes

Brazil: Gas plays a key role in energy transitions – a plausible scenario



Production forecasts¹

Domestic supply²

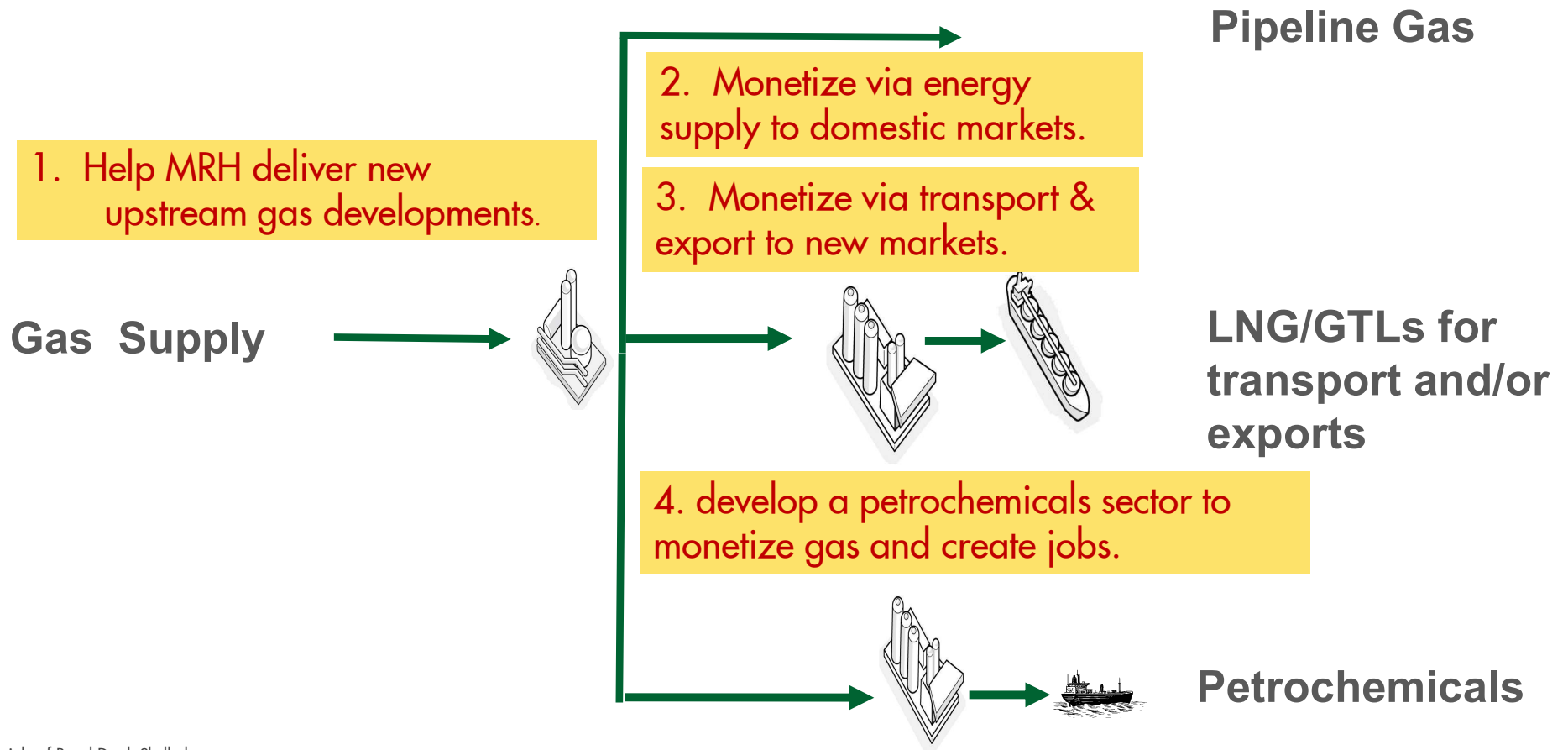


¹ PDE Scenario until 2026 (Ten-year Energy Expansion Plan)

² It considers both integrated and isolated systems, without taking into account imports of natural gas (Bolivia and LNG).

Source: IBP

Integrated Gas Value Proposition



POLICY ACTIONS FOR CLEAN ENERGY SUPPORT GAS AND LNG



GLOBAL

Increasing recognition of environmental benefits

G20 endorses the role of natural gas in energy transition

IEA credits levelling of global CO₂ emissions to coal displacement



REGIONAL

EU policies supporting coal phase out

More than 10 countries announce coal phase-out ambitions - 25% of coal power capacity in EU

EU confirms reforms to strengthen EU Emissions Trading Scheme



NATIONAL

Policies favour gas and renewables

China reforms gas market to increase competitiveness of delivered gas

South Korea's 8th Basic Plan for Energy prioritises renewables and gas, while not sanctioning new nuclear and coal



LOCAL

Policymakers targeting air quality

Berlin closes local coal-fired power plants to improve air quality

Beijing meets ambitious 2017 air quality targets, supported by coal to gas switching



Gas to Grow Programme

Guidelines

The programme should respect/address the following guidelines established by the National Council for Energy Policy – CNPE:

- Adoption of international best practices
- Attraction of investments
- Increase in competition
- Diversity of agents
- Increased dynamics and access to information
- Participation of market agents
- Respect to existing contracts

Gas to Grow Programme

Dimensions and key initiatives

New gas law for re-designing the market

- Alternative Bill of Law 6407 proposed at Congress Energy Ctee in Dec 2017 > all but one entity (ABEGAS) supporting
- New proposal by Abegas offered and rejected in March 2018
- 3rd proposal offered by Abegas in May 2018
- Target to get Congress approval by June 2018
- Plan B: Implement changes depending only on Regulation

Review of gas sector taxation

- SINIEF Protocol # 03/2018 for operational swaps > approved
- Review Customs rules applicable to LNG > sharing storage
- Review Taxation applicable to Regas and Gas processing > reduce cost
- Leveling VAT rules applicable to LNG > reduce disparity amongst States

Power and Gas sectors coordination

- Rolling horizon for reserves certification > implemented
- Plant dispatch by cargoes for LNG supply
- Specific regime for *Reservoir-to-Wire* projects
- Virtual storage
- Sharing of regas storage

New Gas Law

Key Elements of the Proposed Redesign

The proposed changes in the Gas Law currently being discussed at Congress bring the following key elements of change supporting the aspired redesign of the gas market:

- Access to essential infrastructures: gathering ppls, processing and regas plants – mandatory vs negotiated
- Unbundling in Transportation segment – complete, partial, exit from existing?
- Organisation and tariff system for the Transportation segment – from point to point to entry/exit, ISO
- Definition and reach of the Distribution segment – public service tariff or tribute, specificity vs by-pass
- Regulation on Free Consumers, Self-Importers and Self-Producers – State vs Federal

Once the Law passes, there will be considerable effort for definition and issuance of required regulation thereafter



SUMMARY

Shell is working to meet the energy challenge in different ways

- Providing more and cleaner energy
- Reducing its methane emissions intensity

Gas will play a key role in the energy transition

- Gas supports renewable power generation and provides cleaner non-power energy supply
- Strong LNG fundamentals
- LNG in transport helping reduce CO₂ emissions
- Gas to chemicals grows employment, industrialization and GDP directly and indirectly
- Multiple levels of policy needed to support gas and LNG growth

Natural Gas: Providing More and Cleaner Energy



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NATURAL GAS
PROVIDING MORE AND CLEANER ENERGY

CONTENTS

Foreword from the CEO	5	Chapter 3: Industry	44
Introduction from Shell's Integrated Gas and New Energies Director: The critical role of natural gas.....	7	The energy transition in industry.....	45
Chapter 1: An energy transition	8	Light industry.....	45
Powering progress.....	9	Heavy industry.....	46
Growing global demand for energy.....	9	Chemicals.....	49
Urbanisation.....	11	Carbon capture, utilisation and storage in industry.....	49
Powering more and cleaner energy.....	11	Chapter 4: The built environment	51
The challenge of climate change.....	11	The energy transition in the built environment.....	52
Improving air quality.....	13	The role of gas in homes.....	52
Energy transitions.....	15	Decentralised energy systems.....	54
The role of natural gas in the energy transition.....	16	District heating.....	54
An abundant, secure and flexible energy source.....	18	Combining heat and power.....	56
Fulfilling the potential of natural gas.....	22	Increasing city resilience.....	59
Chapter 2: Electricity generation	20	Power to gas: the promise of hydrogen.....	59
The energy transition in electricity generation.....	27	Chapter 5: Transport	60
The role of natural gas in electricity generation.....	29	The energy transition in transport.....	61
Reducing greenhouse gas emissions.....	29	LNG for transport.....	62
Reducing air pollution.....	32	LNG for trucking.....	62
Reducing use of water.....	34	LNG for shipping.....	64
* Natural gas supports the integration of renewables.....	36	Cleaner liquid fuels.....	67
Carbon capture, utilisation and storage in electricity generation.....	42	Compressed natural gas.....	67
		The future of natural gas	66

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