



SHELL IN NIGERIA

BRIEFING NOTES
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shellnigeria.com



WELCOME

Welcome to the 2020 edition of the Shell In Nigeria Briefing Notes.

I always knew growing up Nigeria had a great deal of oil and gas. What I didn't know then was that this Nation would become a leading producer and exporter of these resources. Nigeria's advance in this sector has brought expertise, investment and development. Our nation has reaped many social and economic benefits. We have become known globally, not only for our oil and gas, but also for our music, fashion, football and film industry.

There have been challenges and we continue to face these with courage and innovation. As a community we must draw on this courage, as we confront COVID-19. I encourage Nigerians and indeed everyone to pull together, look out for one another and help keep each other safe.

Nigeria, like the rest of the world is confronted with the reality of the COVID-19 pandemic. The Shell Companies in Nigeria have contributed to the \$30 million Industry intervention led by the Nigeria National Petroleum Corporation to combat the pandemic. And we are enhancing clinical capacity with equipment and infrastructure in a number of hospitals. We live in uncertain times and, yet, these times may be among our most creative as we independently and collectively seek solutions to the challenges that will arise.

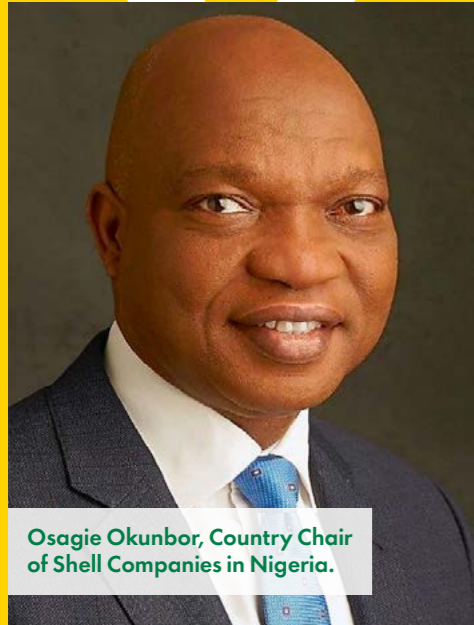
Beyond this immediate challenge, I believe Nigeria can still do more with its energy resources. I see a new focus in the energy sector, and it is driven by Nigerians with supportive foreign investments. There is considerable opportunity to be seized. However, it requires a stable and effective investment environment where local people and businesses are empowered by government and supported by investors and international oil companies, like Shell.

Our vision in Shell is to provide energy to unleash the creativity of our young and aspirational population, enabling them to find their own ways to prosperity. To do this, Shell Companies in Nigeria are working with the government to transform natural gas that was once flared into cleaner, reliable, more affordable energy.

We are also rejuvenating the oil production business in the heartland of the Niger Delta and expanding Nigeria's revenue generating exports. We know the challenges that Nigeria faces but we also know that the breadth of these challenges is mirrored by the breadth of the opportunities and vibrancy and talent of Nigerians. Pulling together to ensure the conditions for commercial success and social advancement are put in place, the Shell Companies in Nigeria are up for the challenge.

As a Nigerian, I know that doing business here is the right choice for the benefit of the current and future generations of Nigerians.

OSAGIE OKUNBOR
Country Chair of Shell Companies in Nigeria
Port Harcourt, Nigeria



Osagie Okunbor, Country Chair of Shell Companies in Nigeria.

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SHELL'S INTERESTS IN NIGERIA

Nigeria is a core part of Shell's global oil and gas business. For more than 60 years, Shell has worked in partnership with the Federal Government of Nigeria, local and international companies, investors, contractors and communities to develop the country's oil and gas sector. Shell Companies in Nigeria employ nearly 3,000 people and more than 11,000 contractors.

Shell is the largest international oil company in Nigeria and focuses on:

- Rejuvenating heartland oil and gas production.
- Developing deep-water exploration and production.
- Expanding availability of gas and power.
- Operating responsibly.



MAJOR OIL EXPORT TERMINALS



DEEP-WATER FLOATING PRODUCTION, STORAGE & OFFLOADING (FPSO) VESSEL



LIQUEFIED NATURAL GAS (LNG) TRAINS



INDUSTRIAL GAS CUSTOMERS

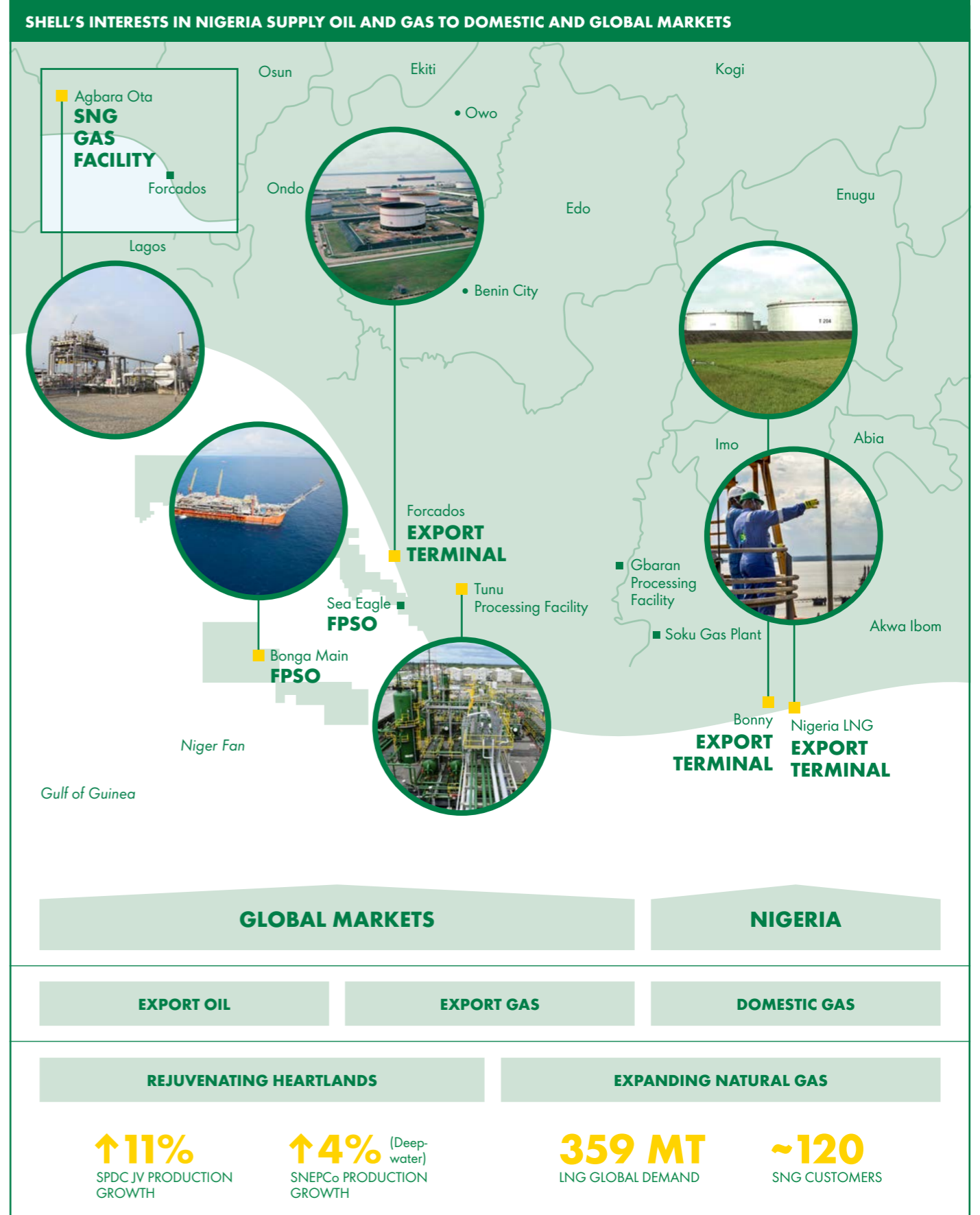
The Nigeria Briefing Notes update on activities and programmes undertaken by several Nigerian companies either wholly-owned by Shell or in which Shell has an interest. Together these are referred to as the Shell Companies in Nigeria (SCiN). Four of these are:

- Shell Petroleum Development Company of Nigeria Limited (SPDC); a wholly-owned Shell subsidiary, which operates an unincorporated joint venture (SPDC JV) in which SPDC holds a 30% interest.
- Two other wholly-owned Shell subsidiaries; Shell Nigeria Exploration and Production Company Limited (SNEPCo) and Shell Nigeria Gas Limited (SNG).
- And Nigeria Liquefied Natural Gas (NLNG) Limited; an incorporated joint venture in which Shell has a 25.6% interest.

Shell is rejuvenating its conventional oil and gas business by re-opening wells and strengthening pipelines, flowlines and infrastructure in the Niger Delta, while continuing to develop and grow offshore shallow and deep-water production in the Gulf of Guinea. It is also expanding the availability of natural gas for export and for supply to domestic industries.

SHELL INTERESTS IN THE NIGERIAN OIL & GAS SECTOR

	NAME OF COMPANY	DESCRIPTION AND MAIN ACTIVITIES	OPERATING ASSETS
HEARTLAND	The Shell Petroleum Development Company of Nigeria Limited (SPDC)	Supplies onshore and shallow water oil and gas to domestic and export market	Operator and 30% participant interest holder in SPDC joint venture: <ul style="list-style-type: none"> 340 producing oil wells (97 land, 181 west and 62 central assets). 56 producing gas wells (10 land, three west and 43 central assets). A network of approximately 4,000 kilometres of oil and gas pipelines and flowlines. 10 gas plants. Two major oil export terminals. One power plant.
DEEP-WATER	Shell Nigeria Exploration and Production Company Limited (SNEPCo)	Produces deep-water oil and gas	Operator of the Bonga field floating production, storage and offloading vessel (FPSO). Interests in two Shell-operated deep-water blocks under production sharing contracts: <ul style="list-style-type: none"> Bonga (OML-118 - 55% interest) and Bolia/Doro (OML-135 - 55% interest). Interests in two non-operated deep-water blocks: <ul style="list-style-type: none"> Zabazaba, Etan (OPL-245 - 50% interest) operated by Agip under a production sharing agreement. Ehra (OML-133 - 43.75% interest) operated by Esso under a production sharing contract.
GAS FOR NIGERIA	Shell Nigeria Gas Limited (SNG)	Only Nigerian subsidiary of an international oil company in domestic gas distribution	Operator and 100% Shell share: <ul style="list-style-type: none"> Two LNG trains with processing capacity of over 100 mmscfd. Pressure reduction and metering station. Gas transmission and distribution network of approximately 150 kilometres. Serving over 100 industrial and commercial customers, mostly in Ogun, Abia, and Rivers states.
GAS FOR EXPORT	Nigeria Liquefied Natural Gas Company Limited (NLNG)	Processes and exports liquefied natural gas (LNG)	25.6% shareholder in NLNG joint venture: <ul style="list-style-type: none"> Six LNG trains with total processing capacity of 24.1 million tonnes a year of LNG and up to 5 million tonnes of natural gas liquids (LPG and condensate) from 3.5 billion standard cubic feet per day of natural gas. NLNG is serviced by fleet of 23 LNG vessels.



REJUVENATING HEARTLAND OIL AND GAS PRODUCTION

The Shell Petroleum Development Company of Nigeria joint venture (SPDC JV)

The SPDC JV's assets include:

- 340 producing oil wells (97 land, 181 west and 62 central assets).
- 56 producing gas wells (10 land, three west and 43 central assets).
- A network of approximately 4,000 kilometres of oil and gas pipelines and flowlines.
- 10 gas plants.
- Two major oil export terminals.
- One power plant.
- One shallow water FPSO ("Sea Eagle").

Key developments 2019:

- The SPDC JV production rose more than 10% to 514,000 barrels of oil equivalent per day.
- 106 producing wells added.
- Trans Ramos Pipeline re-opened.
- Gbaran-Ubie gas plant achieved peak production with 175,000 barrels of oil equivalent per day.

The Shell Petroleum Development Company of Nigeria joint venture (SPDC JV) focuses on oil and gas production in the Niger Delta. The joint venture has the largest acreage in the country and operates a leased area of 31,000 square kilometres. It produces more than half a million barrels of oil per day on average with additional capacity to produce more.

Shell Petroleum Development Company of Nigeria Limited (SPDC), wholly-owned by Shell, has a 30% interest in the SPDC JV and is the operator. Other partners are Nigerian National Petroleum Corporation (NNPC, 55%), Total E&P Nigeria Ltd (10%) and ENI subsidiary Nigerian Agip Oil Company Limited (5%).

Following divestments of some assets in the Warri area of the Niger Delta, the SPDC JV is improving its remaining assets. The company is restoring and repairing oil and gas wells. Many of these wells were either damaged or closed due to previous unrest. The Trans Ramos Pipeline, which feeds into Shell's Forcados oil export terminal, is once again supplying crude oil after being shut due to leaks in 2018.

The SPDC JV's production has shown significant growth over the past three years. The SPDC JV increased its 2019 production to 514,000 boe/d from 465,000 boe/d in 2018. The growth was delivered through improved availability and increasing activity levels. Oil production is exported to global markets via the Forcados and Bonny Terminals as well as the Sea Eagle floating production storage and offloading (FPSO) vessel. Gas is supplied to the domestic market and to the export market through the Nigeria LNG plant. The SPDC JV supplies approximately 50% of the Nigeria LNG plant capacity largely from the Gbaran-Ubie and Soku plants. Soku gas production increased from 100MMscf/d in 2018 to 350MMscf/d in 2019.

The SPDC JV has produced neither oil nor gas in Ogoniland since 1993 and has transferred operatorship of its assets in Ogoniland to the Nigerian Petroleum Development Company (NPDC). However, the Trans Nigeria Pipeline (TNP), which belongs to the SPDC JV and carries crude oil from various companies, passes through Ogoniland. The SPDC JV responds to any operational incident that may occur on the TNP as well as sabotage and theft incidents on its assets in the region.

The SPDC JV, in compliance with statutory requirements, paid more than \$116 million in 2019 to the Niger Delta Development Commission (NDDC), which undertakes sustainable development projects in the Niger Delta area.



Routine gas pressure meter readings being taken at the Gbaran-Ubie gas plant.

ELIMINATING CONTINUOUS FLARING

As a signatory to the World Bank's "Zero Routine Flaring by 2030" initiative, Shell continues to pursue its 2015 commitment to eliminate associated gas flaring from its operations around the world, including Nigeria.

Since 2000, all new SPDC JV facilities are designed to have no continuous flaring. Soku, Bonny, Gbaran and Agbada facilities have fully functional solutions to address routine flaring. For other facilities, solutions have been identified to capture the associated gas.

A series of investments by the SPDC JV since 2010 to capture and commercialise associated gas for domestic and export markets has decreased routine flaring by almost 90%. Recent examples include the Southern Swamp, Forcados Yokri, Oloma, Adibawa and Otumara gas gathering projects. Remaining sites with low volume flares are in remote areas and SPDC has been working with the federal government and other partners to develop small-scale projects to capture the associated gas for local use.

Progress continues to be made and a further reduction in flaring is anticipated in 2020 and beyond. However, flaring did increase by about 20% in 2019 compared with 2018 due to the re-opening of the Trans Ramos Pipeline and the delayed start-up of some gas gathering projects.



Bringing new facilities into operation that collect gas that was once flared (Gbaran-Ubie).

DEVELOPING DEEP-WATER EXPLORATION AND PRODUCTION

Shell Nigeria Exploration and Production Company Limited (SNEPCo)

Operator of the Bonga field floating production, storage and offloading vessel (FPSO):

Interests in two Shell-operated deep-water blocks under production sharing contracts:

- Bonga (OML-118 – 55% interest) and Bolia/Doro (OML-135 – 55% interest).

Interests in two non-operated deep-water blocks:

- Zabazaba, Etan (OPL-245¹ – 50% interest) operated by Agip under a production sharing agreement.
- Ehra (OML-133 – 43.75% interest) operated by Esso under a production sharing contract.

Key developments 2019:

- SNEPCo production rose to 164,000 barrels of oil equivalent per day from 158,000.
- Bonga operational availability improved to 94% from 85% in 2018.

Shell Nigeria Exploration and Production Company Limited (SNEPCo) pioneered deep-water oil and gas production from the Bonga field in the Gulf of Guinea where depths reach more than 1,000 metres. When Bonga began production in 2005, it increased Nigeria’s oil production capacity by 10%. Today, nearly one-third of Nigeria’s deep-water production comes from the Bonga and Erha fields.

SNEPCo, a wholly-owned Shell company, has interests in four deep-water blocks; two of which it operates. The company develops and deploys the latest deep-water drilling techniques to reduce drilling times, cut costs and increase production.

The Bonga floating production, storage and offloading (FPSO) vessel has a total production capacity of 225,000 barrels of oil per day and 150 standard cubic feet of gas export per day. Since production began in 2005, Bonga alone has produced about 880 million barrels of oil. In 2019, the FPSO improved its availability from 85% in 2018 to 94% in 2019 meaning more production capacity.

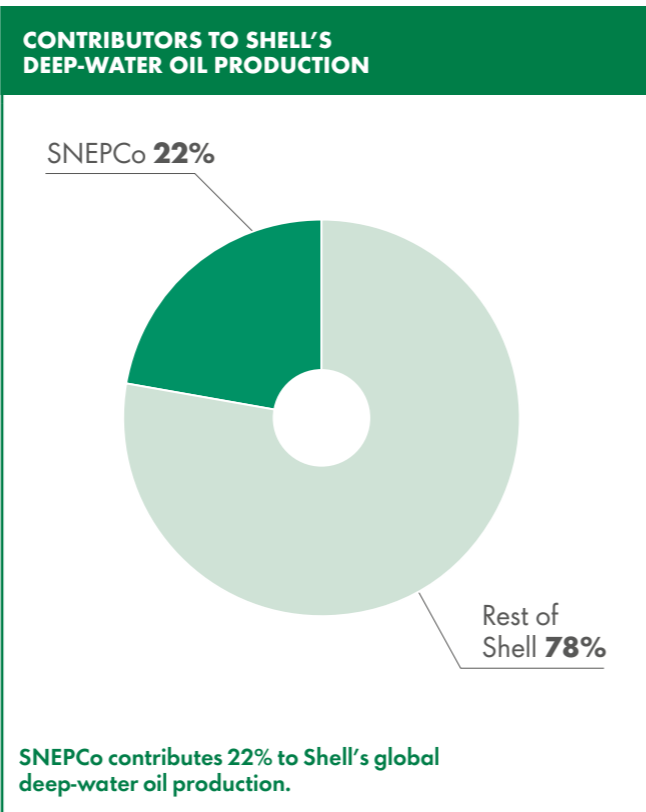
SNEPCo’s production in 2019 rose to 164,000 boe/d from 158,000 and this was largely due to Bonga.



The 12-storey high Bonga floating production, storage and offloading (FPSO) vessel.

SNEPCo contributes around 22% to Shell’s global deep-water oil production and its growth ambitions include expansion of natural gas production.

In addition to Bonga, SNEPCo’s exploration activities have led to several significant discoveries of oil and gas over the last two decades, including Bolia, Zabazaba and Doro fields.



A 7th generation, state of the art, twin-decked rig is currently active over the southwestern portion of the Bonga field.

BONGA 7TH GENERATION RIG ACHIEVES WORLD FIRST

“It’s incredible,” says Elohor Aiboni, Bonga Asset Operations Manager, describing the new rig active over the southwestern portion of the Bonga field where Shell Nigeria Exploration and Production Company Limited (SNEPCo) operates.

The secret to SNEPCo’s success is its deployment of the latest proven technology when it comes to exploring and developing the oil and gas fields in the deep waters of the Gulf of Guinea. This new 7th generation, twin-decked rig cuts drilling times and costs and was the first in the world to perform a well-drilling completion operation in a single trip rather than several. The operation entailed placing valves and delicate instruments in the well.

Also, on the Bonga field is a floating production, storage and offloading (FPSO) vessel with a total production capacity of 225,000 barrels of oil per day and 150 standard cubic feet of gas export per day. The height of a 12-storey building and spanning an area the size of three football fields, the FPSO explores for and extracts oil from more than 1,000 metres below sea level.

Since production began in 2005, Bonga has produced about 880 million barrels of oil. In 2019, it improved its availability to 94% from 85% in 2018.

¹Authorities in various countries are investigating our investment in Nigerian oil block OPL 245 and the 2011 settlement of litigation pertaining to that block (see Note 25 to the Consolidated Financial Statements in Royal Dutch Shell PLC’s Annual Report).

EXPANDING AVAILABILITY OF GAS AND POWER

Nigeria LNG and Shell Nigeria Gas Limited

NLNG assets include:

- Six LNG trains with a total processing capacity of 24.1 million tonnes a year of LNG and up to five million tonnes of natural gas liquids.
- NLNG is serviced by a fleet of 23 LNG vessels.

SNG assets include:

- Two gas trains with network capacity of over 150 mmscfd.
- A pressure reduction and metering station.
- Gas transmission and distribution network of around 150 kilometres, serving over 115 industrial and commercial customers, mostly in Ogun, Lagos, Abia, and Rivers states.

Key developments 2019:

- Southern Swamp Associated Gas (SSAGS) and Forcados Yokri facilities achieved first production.
- Assa North/Ohaji South Gas Development Project construction begins.
- NLNG took the Final Investment Decision to build seventh LNG production line subject to conditions².
- SNG increased its gas processing capacity by over 150%.

Shell is working with the Federal Government of Nigeria to expand the availability of gas for Nigerian industries and export to world markets. Shell has interests in two gas supply operations in Nigeria: the Nigeria Liquefied Natural Gas (NLNG) Limited joint venture and the wholly-owned Shell Nigeria Gas Limited (SNG). Both are supplied with gas by SPDC and SNEPCo.

NLNG accounts for about 7% of the world's total LNG production and is a joint venture between four natural gas suppliers: NNPC (49%), Shell (25.6%), and subsidiaries of Total (15%) and ENI (10.4%). NLNG processes and exports liquefied natural gas (LNG) and Shell provides technical services to NLNG with approximately 20 staff members seconded to support operations.

Gas from the SPDC JV and the Bonga deep-water field is piped to the NLNG plant on Bonny Island. Here it is cooled to produce LNG for export to consumers in Atlantic Basin countries, such as Spain, Italy, Turkey, Mexico and the US, as well as markets in Asia.

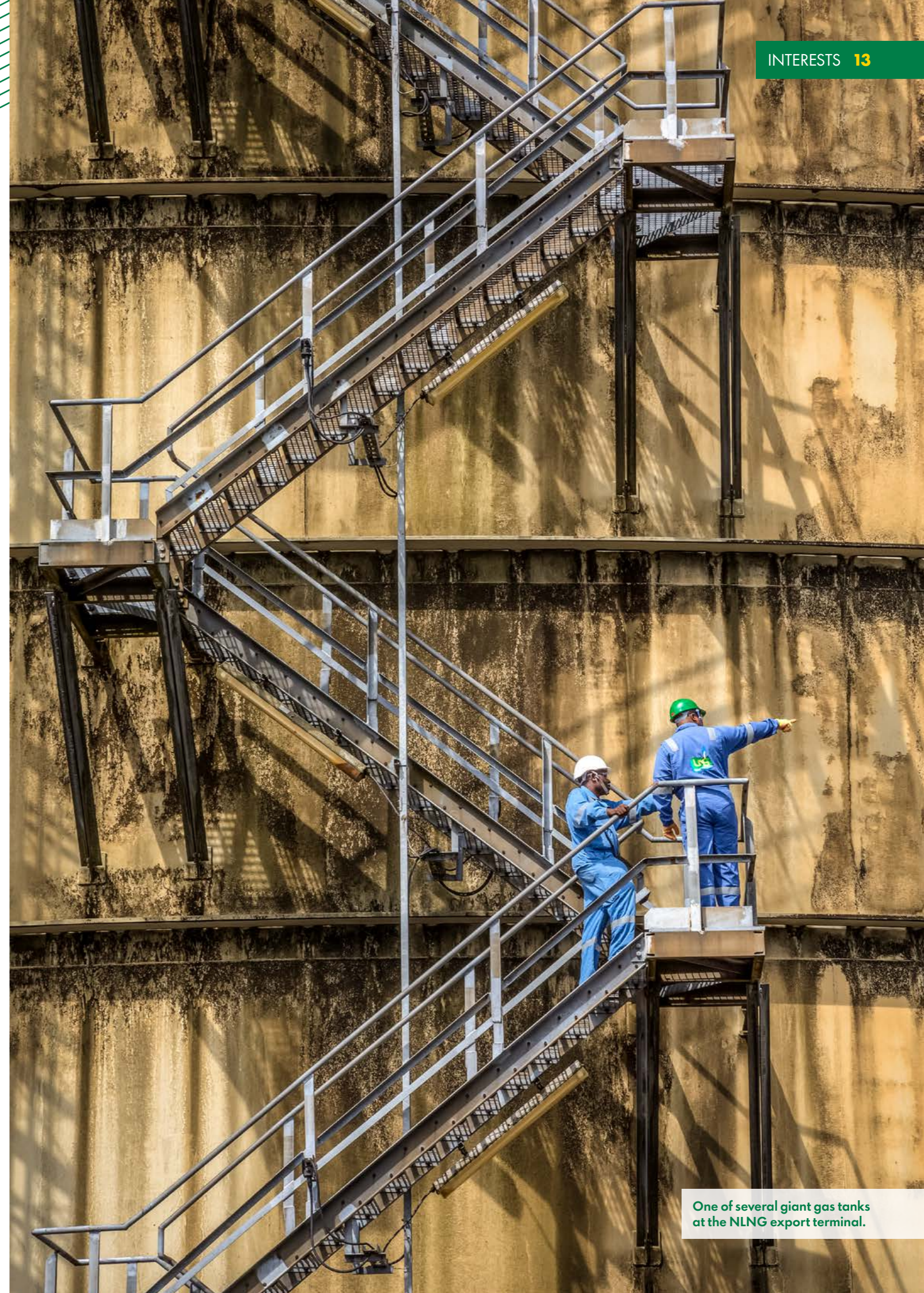
SNG is the only wholly-owned gas distribution subsidiary of an international oil company in Nigeria and is at the forefront of providing domestic gas to industrial customers and manufacturing plants. SNG markets gas within Nigeria as a more reliable and affordable alternative to liquid fuels and its gas is used by local manufacturers to make household consumables, utensils and hardware. SNG is the only gas distribution company in Nigeria certified according to the ISO14001 international standard for an effective environmental management system.

LNG OUTLOOK

Global demand for liquefied natural gas (LNG) grew by 12.5% to 359 million tonnes in 2019, according to Shell's latest annual LNG Outlook – a significant increase that bolsters LNG's growing role in the transition to a lower-carbon energy system.

➔ [View more information on the LNG Outlook here.](#)

²FID is subject to certain conditions being met.



One of several giant gas tanks at the NLNG export terminal.

OPERATING RESPONSIBLY

Safety

Safety and security remain top priorities and Shell applies international standards to help create a safe operating environment. We work closely with communities, civil society, contractors and joint venture partners, as well as federal and state government agencies to promote a secure and safe environment.

Shell companies aim to achieve no harm to people and no leaks across operations. Shell refers to this as the Goal Zero ambition. In Nigeria, Shell drives safety performance by constantly discussing with staff their challenges and dilemmas. Shell expects staff and contractors to comply with safety rules and regulations relevant to their work, to intervene to prevent unsafe conditions, and to respect fellow workers and the communities in which we work.

In 2019, Shell Companies in Nigeria focused on three safety areas: improving how managers stop unsafe work in their teams, preventing objects being dropped from height – a common hazard in the industry – and marine safety.

However, in 2019, there were 16 cases of personal injuries that required medical treatment or time off work at Shell Companies in Nigeria. And tragically, in 2019, two contractor personnel working for the SPDC JV died when an oil and gas vessel they were travelling on capsized in bad weather. The government regulator is yet to share its investigation into the cause(s) of the incident at the time of publishing this report. As always, we will review the findings and learn from the investigation to avoid this happening again.

Shell Companies in Nigeria continue to contribute to the safety of communities around facilities by responding to third-party emergencies in the communities where they operate. In 2019, Shell companies responded to 44 of these incidents, including an overturned fuel tanker and a search and rescue operation on a collapsed hotel building under construction, both in Port Harcourt.

Operating with integrity

In Nigeria, Shell insists on the same ethical and behavioural standards as elsewhere in the Shell Group. Shell has a set of core values – honesty, integrity and respect for people – which underpin the work done. For the last two years, Shell Companies in Nigeria have hosted a day-long event on Ethics and Compliance. In 2019, Mele Kyari, the Group Managing Director of NNPC joined the session with his leadership team as guests.

The Shell General Business Principles, Code of Conduct and Ethics and Compliance Manual help Shell employees, contractors and those working in joint ventures that we operate act in line with these values and comply with relevant laws and regulations.

The Shell Code of Conduct supports every employee and contractor who works for or on behalf of Shell. It sets out expected behaviours of Shell employees and how they relate to the Shell Business Principles and Core Values.

Shell's Ethics and Compliance Manuals build on the Shell General Business Principles and the Shell Code of Conduct to provide practical advice on how to comply with laws and regulations and how to relate to customers, communities and colleagues.

Shell subsidiaries and associates operating in Nigeria are party to various environmental and contractual disputes brought in the courts of Nigeria, England and the Netherlands.



THE MAGIC STARTS WHEN YOU EMPOWER PEOPLE.

Elohor Aiboni,
Asset Manager Bonga FPSO



Elohor Aiboni,
Asset Manager Bonga FPSO.

EMPOWER PEOPLE TO SUCCEED

Interview with Elohor Aiboni, Asset Manager Bonga FPSO

Education: Bachelor in Chemical Engineering,
MSC in Environmental Management
Joined Shell: April 2002

Impact:

Our operational availability is back on track. Our safety record is good and we're in control of costs. We've got to ensure that our operational availability remains high and that we stay efficient and safe.

Approach:

The magic starts when you empower people. My teams know the asset better than anyone, so we ask them to speak up. We train across multiple disciplines and use digital tools to improve productivity. We keep safe by creating 'family units' that look after each other and celebrate success.

Hopes:

The Bonga field is prolific and we see a future. It's professionally satisfying to know that we have the technology to get through our drilling campaign and our cost journey. If the government creates the right investment climate then there could be more oil and gas finds with the potential to expand and create jobs and opportunities for people.

Challenge:

We aim to work up new projects and investment opportunities that meet international standards. Without these opportunities, Shell loses and Nigeria loses. As a Nigerian, I don't want that.

*Empower people
to succeed.*

Elohor

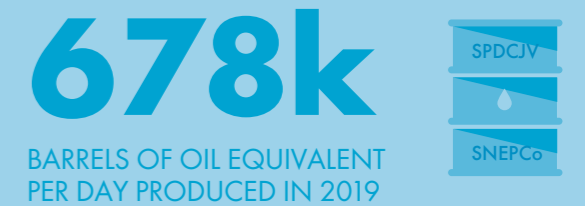
A team of employees at Shell Nigeria Gas facility at Agbara, Ogun State Nigeria.

POWERING NIGERIA'S ECONOMY

Nigeria's oil and gas resources can power a diverse economy, expand domestic industries and increase the prosperity of its people. In 2019, Shell Companies in Nigeria paid about \$1.5 billion³ in taxes and royalties to the Nigerian government.

With business interests from the oil and gas producing heartlands of the Niger Delta to the growing industries of Ogun State and Lagos, Shell Companies in Nigeria provide technical expertise, a global perspective and strong governance that can unlock opportunities for Nigeria and Nigerians.

- Prosperity through power.
- A pipeline of projects.
- Future opportunities in deep-water.
- Developing Nigerian talent and supply chains.



SPENT ON CONTRACTS TO NIGERIAN COMPANIES IN 2019 (scIN)

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- Two other wholly-owned Shell subsidiaries; Shell Nigeria Exploration and Production Company Limited (SNEPCo) and Shell Nigeria Gas Limited (SNG).
- And Nigeria Liquefied Natural Gas (NLNG) Limited; an incorporated joint venture in which Shell has a 25.6% interest.

³Shell share of royalties and corporate taxes paid to Nigerian government (SPDC \$0.7 billion; SNEPCo \$0.8 billion)

Nigeria has some of Africa's largest reserves of oil and natural gas, giving it a resource foundation to build a prosperous economy for its growing population of around 200 million people. The country makes over 90% of its export earnings and about 70% of government revenue from the oil and gas industry⁴.

However, development is held back by a lack of infrastructure. Intermittent power from the electricity grid causes power shortages in urban as well as rural areas and the need for back-up generators adds to the cost of energy. Natural gas and off-grid renewable energy projects are proving a new way forward for Nigeria to power its homes and businesses.

PROSPERITY THROUGH POWER

Economic growth relies on access to reliable, affordable energy. The Federal Government of Nigeria has made it an economic priority to harness the potential of its natural resources and expand access to energy as it strives to raise the living standards of its people. Shell wants to be part of this opportunity for the next generation of Nigerians.

Today, the SPDC JV supplies about 10% of Nigeria's domestic gas, most of which is used for power generation. The SPDC JV operates the joint venture's power plan, AFAM VI, which has a nameplate capacity of 650MW although often only operates between 350MW and 450MW depending on grid allocations. AFAM VI uses combined cycle gas turbine technology that burns 40% less gas than plants using older open cycle technologies. This can help contribute to reduction in greenhouse gas emissions. Shell Nigeria Gas (SNG) provides gas to industrial and commercial customers in Nigeria. Challenges like building a more extensive gas distribution pipeline network remain but the Shell Companies in Nigeria have an existing foundation that is creating more opportunities.



Gas-powered electricity is beginning to replace diesel generators at one of Africa's largest open markets.

SNG distributes gas to more than 115 commercial and industrial customers across Ogun and Lagos States, such as Nigeria's first float glass manufacturer and first producer of antiretroviral drugs. Other customers include international consumer goods companies and Nigeria's largest desktop water supplier. This industrial hub underpins a vibrant local economy, providing employment and making Ogun one of just two states to generate more revenue than it receives from the federal government.

In Lagos, the other state that generates more revenue than it receives, SNG is exploring opportunities to distribute gas to the Lagos State Government as part of the 'Light Up Lagos' initiative that could distribute gas to wholesale and retail customers in Victoria Island, Ikoyi, Lekki and Epe in the metropolitan Lagos area.

In Abia State, gas from SNG is already used to produce electricity to light the thousands of stalls at the Ariaria Market, one of West Africa's largest open markets with over 37,000 stalls. Over time the gas-generated power will replace the diesel generators that the over two million traders use for power.



Gas from SNG is already supplied to commercial and industrial customers in Ogun and Lagos States.

⁴Nigerian National Bureau of Statistics, 2017 (latest available).

A PIPELINE OF PROJECTS

The SPDC JV has long produced oil in the Niger Delta. Today, it aims to produce more natural gas, much of which was once flared. In 2019, the Southern Swamp Associated Gas (SSAGS) and Forcados Yokri gas gathering facilities achieved first production. This gas is destined for domestic and global markets.

The SPDC JV is also working with the Federal Government of Nigeria and Nigerian National Petroleum Corporation (NNPC) on developing four of the government's seven gas supply projects.

One of these projects is the Assa North/Ohaji South Gas Development Project⁵ in Imo State where construction began in 2019. The project, with a capacity for 300 million standard cubic feet of gas per day, has the potential to be one of the largest domestic gas projects in the country when completed. The development will help the federal government deliver on its ambition to provide enough gas for domestic consumption, power generation and gas-based ammonia and urea fertilizers for farmers.

The other three projects are in early stages and investment decisions have not been taken. However, if all four projects were completed, together they might be expected to deliver more than three billion standard cubic feet of gas per day for domestic use and export.

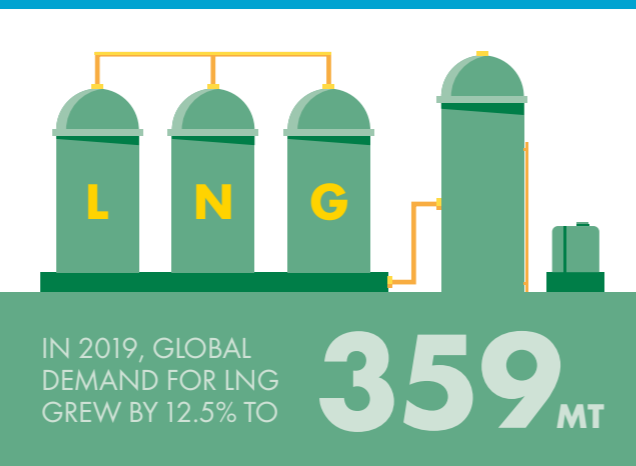
SPDC also operates the Gbaran-Ubie gas plant in the heart of the Niger Delta. In 2019, Gbaran-Ubie achieved peak production with about 175,000 barrels of oil equivalent per day – approximately 864 million standard cubic feet per day (MMscf/d) and 26,000 barrels of condensate per day.

Much of this gas is for export but in 2019 SNG signed agreements to supply gas to industrial clusters and parks in Bayelsa State, the SPDC JV Gbaran-Ubie gas facility, and for offtake of the Assa North/Ohaji South Gas Development Project in Imo State. SNG sees further expansion opportunities in Rivers, Abia, Bayelsa, Ogun and Lagos states.

Nigeria's growing population means the country needs more gas infrastructure to meet rising demand for energy. Additional investment is required to build a pipeline network that can reach more customers.

⁵The project is a joint development between SPDC, NNPC, Total, Agip and SEPLAT.

2019 WAS A YEAR OF RECORD LNG SUPPLY GROWTH



Global demand for LNG continues to grow. The Nigeria LNG (NLNG) joint venture (Shell interest 25.6%) was created 30 years ago.

SNG is already working to increase its gas distribution capacity and in 2019 increased capacity by over 150% after the completion of its second gas train, the Agbara-Ota Capacity Increase Project. This facility enables regular gas supply to industries in Ogun State. SNG and its partners continue to try to expand to reach more states. SNG now has a network capacity to deliver over 150 mmscfd.

Outside Nigeria, global demand for LNG continues to grow. In 2019, NLNG reached a final investment decision to build a seventh LNG production line (known as a train) subject to certain conditions being met. The expansion would ensure Nigeria's continued place as a global player in an energy source that helps replace coal-use in power plants, reducing the CO₂ emissions by 45-55% as compared to coal when producing electricity.

In addition to direct investment, Shell also hopes that its substantial funding to create a not-for-profit impact investing company called All On will bring reliable power to largely off-grid urban and rural customers across Nigeria. All On works with commercial partners to expand access to energy to about five million people, specifically in the Niger Delta.



NLNG plans to build a 7th LNG production line⁶ that will ensure Nigeria's key role in supplying an energy source that helps reduce CO₂ emissions in power stations when compared to coal.

UNLOCKING NATURAL GAS FOR ECONOMIC GROWTH

Nigeria has around 202 trillion cubic feet of proven gas reserves and about 600 trillion cubic feet of unproven reserves, according to the government-owned Nigerian National Petroleum Corporation (NNPC). However, only 25% of these reserves are being produced or are under development.

The Federal Government of Nigeria (FGN) has made it a priority to unlock and harness the potential of this resource to increase domestic and industrial power supply, raise living standards and support sustainable economic growth and diversification.

The FGN also aims to increase electricity generation. Nigeria currently has around 12 gigawatts (GW) of installed electricity capacity but often less than 5 GW is available in the grid due to transmission capacity

and other challenges. The FGN wants to increase this to 20 GW and this represents a huge development opportunity for Nigeria's domestic gas industry.

SPDC is working with the FGN on four of its seven gas development projects. The Assa North/Ohaji South gas development project is under construction. The other three are in early stages of planning. The projects are:

- Assa North/Ohaji South field.
- The 4 Unitized Gas fields – Samabri-Biseni, Akri-Oguta, Ubie-Oshi and Afuo-Ogbainbri.
- Gas supply to Brass Fertilizer Company.
- Okpokunou/Tuomo West field cluster.

⁶Financial Investment Decision is subject to certain conditions being met.

FUTURE OPPORTUNITIES IN DEEP-WATER

Future opportunities also lie in the deep waters of the Gulf of Guinea. Through its subsidiary SNEPCo, Shell is using its technological and operational expertise to help Nigeria access these oil and gas resources. Since 2010, industry-wide production from these deep-water fields has added more than 930,000 barrels per day to Nigeria's total oil output, which in 2019 was around 2.1 million barrels per day.

Three decades ago, Shell brought its expertise to Nigeria, after honing its deep-water skills in the Gulf of Mexico. SNEPCo's vision is simple: to be the best deep-water business in the world. It pioneered the advance into Nigeria's deep-water frontier and today its operation is run by Nigerians and contributes around 22% to Shell's total deep-water oil production.

In the right investment climate, there are opportunities to expand and in 2019, SNEPCo took steps to increase production by inviting contractors to bid to develop the 150,000 bpd-capacity Bonga South West Aparo oil field. The project's first phase will include developing around 20 deep-water wells and subsea infrastructure, as well as building a new floating, production, storage and offloading vessel (FPSO).

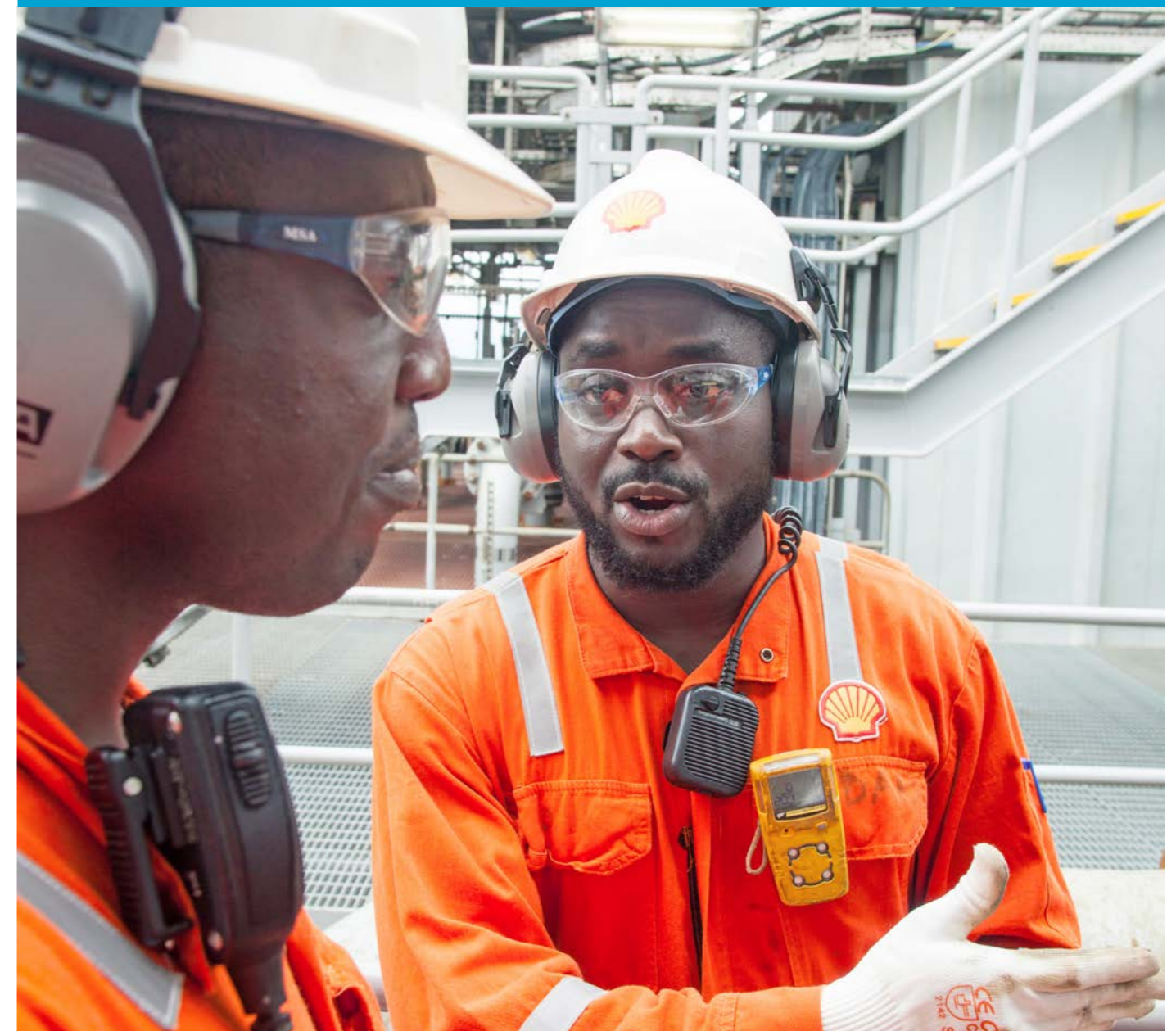


Bonga floating production, storage and offloading (FPSO) vessel.

DEEP-WATER ENGINEERS

The development of the Bonga field by Shell Nigeria Exploration and Production Company Limited (SNEPCo) gave rise to the first generation of Nigerian deep-water oil and gas engineers. SNEPCo was the first Nigerian company to venture into the deep waters of the Gulf of Guinea and this required the application of cutting-edge technology. SNEPCo hired Nigerian engineers who cut their teeth on this project, developing knowledge and skills that would advance the country's oil and gas sector.

SNEPCo continues to cultivate Nigerian engineers through its annual university scholarships. In 2019, Maikanti Baru, the then Group Managing Director of the Nigerian National Petroleum Corporation (NNPC) described SNEPCo as a trail blazer and clear leader in deep-water exploration with an exemplary performance. SNEPCo Managing Director Bayo Ojulari, responded by saying the company was mindful of its pioneering role and wanted to continue to pass on its technical expertise.



DEVELOPING NIGERIAN TALENT AND SUPPLY CHAINS

Shell's investment in Nigeria goes beyond oil and gas infrastructure. It extends to Nigerians themselves. Shell employs Nigerians in all roles and 96% of its around 3,000 employees in the country are nationals. Nigerian staff also work outside Nigeria and share their expertise with their colleagues in Shell's operations around the world.

At Shell Companies in Nigeria, employees work to global standards, are exposed to ideas and training and are empowered to make decisions and deliver. Shell's talent building, however, starts through support for Nigerian students via its social investment initiatives. The various Shell Companies in Nigeria also provide specialised training for semi-skilled Nigerians to work in the energy industry as welders and scaffolders, for example.

Shell also assists Nigerian companies to achieve the necessary certification for their products and services to ensure they qualify for tenders and contracts to provide goods and services across its operations and the Nigerian oil and gas sector. In 2019, 98% of Shell Companies in Nigeria contracts worth \$1.1 billion were awarded to Nigerian companies.

Sometimes, a lack of access to capital hinders many Nigerian companies from competing for and executing contracts effectively. Shell has provided access to nearly \$1.5 billion in loans to 637 Nigerian vendors under the Shell Contractor Support Fund since 2012. These loans help improve their tendering opportunities.

Shell's activities continue to help create Nigerian businesses that can provide technical and support services to the industry. This includes the manufacture of tools and technical kits, the operation of helicopter flights in the Niger Delta, strategic partnerships between foreign and local companies to stimulate technology transfer and capacity development.

SNEPCo has awarded major engineering and construction contracts to companies that are indigenous, have local staff, or possess domestic capabilities in the country. These companies were involved in the installation of new production manifolds, subsea umbilical systems, oil production and water injection flowlines. In 2019, a local company refurbished one of Bonga's subsea wellhead control systems, known as a tree.

CONTRACTING LOCAL BUSINESSES

Shell Companies in Nigeria contribute to the development of the Nigerian business sector by contracting local companies. For example, the Southern Swamp Associated Gas (SSAGS) project, which began production in 2019, contracted 286 Nigerian companies. These included:

- SAIDEL Nigeria Limited, which deployed the first Nigerian Flagged Pipelay Vessel (\$900).
- AOS Orwell Limited, which built new workshops and facilities for assembling control and security panels. They also developed capacity for carrying out testing of the panels in Nigeria, which previously had been done outside of the country.
- Kasal Engineering Limited and Pamac Engineering Limited, which fabricated steel structures and expanded their fabrication yard and standardised their processes.



WE HOPE TO INCREASE EXPORTS BUT THE OPPORTUNITY FOR THIS GENERATION IS TO BRING MORE ENERGY TO THE NIGERIAN ECONOMY.

Simon Roddy,
Deputy Managing Director of SPDC



Simon Roddy,
Deputy Managing Director of SPDC.

OPPORTUNITY OF A GENERATION

**Interview with Simon Roddy,
Deputy MD, SPDC**

Education: BSc Honours in Physics from the University of Bristol; MBA from INSEAD
Joined Shell: 1993

Impact:

Last year oil and gas production increased and we paid a healthy dividend to government and shareholders. We still have a lot of work to do but believe we are turning a corner on creating a more normal operating environment.

Approach:

Operating in the Niger Delta represents a significant challenge but this must not be an excuse. We are embracing the challenge, working hard towards our Goal Zero commitments and safely re-opening wells, flowlines and pipelines. As we say in Nigeria, "one team, one family, one T-shirt."

Hopes:

Production is at a five-year high and we are looking to grow further. But oil and gas production is not only about revenues. In Nigeria it is an enabler that helps to deliver the aspirations of a generation. We hope to increase exports but the opportunity for this generation is to bring more energy to the Nigerian economy.

Challenge:

Our biggest challenge remains sabotage, which causes spills, and regrettably we can't eliminate that. But what we are doing is working continuously to respond faster to spills and to clean them up in a shorter timeframe. We never take our eye off the security and safety of our employees, contractors and ultimately the communities where we operate. Everyone has to go home safely.

*Energy is the opportunity
of a generation.*

Simon

Secondary school students in Port Harcourt. More than 80% of Cradle-to-Career scholars go on to receive university scholarships from Shell Companies in Nigeria.



EMPOWERING PEOPLE, COMMUNITIES & BUSINESS

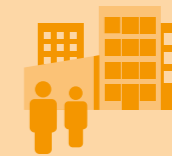
Nigeria is a thriving and vibrant country, offering opportunities for people to improve their livelihoods. The scale of the opportunity is mirrored by the scale of the challenges to provide affordable energy, education, healthcare and conditions for local businesses to grow.

In 2019, Shell's Nigerian businesses SPDC, SNEPCo and SNG made direct social investments of \$40 million in Nigeria, making the country the largest concentration of social investment spending in the Shell Group.

- Access to affordable healthcare.
- Supporting education.
- Enterprise support.
- Accelerating access to energy.
- Assistance and safety.

\$40mIn

IN DIRECT SOCIAL INVESTMENT IN 2019
(The SPDC JV, SNEPCo & SNG)



COMMUNITY-DRIVEN PROGRAMMES SINCE 2006 WORTH

\$252mIn

667k

MOBILE HEALTH OUTREACH BENEFICIARIES SINCE START



6,000

UNIVERSITY GRANTS SINCE 2011 (SCIN)

The Nigeria Briefing Notes update on activities and programmes undertaken by several Nigerian companies either wholly-owned by Shell or in which Shell has an interest. Together these are referred to as the Shell Companies in Nigeria (SCIN). Four of these are:

- Shell Petroleum Development Company of Nigeria Limited (SPDC); a wholly-owned Shell subsidiary, which operates an unincorporated joint venture (SPDC JV) in which SPDC holds a 30% interest.
- Two other wholly-owned Shell subsidiaries; Shell Nigeria Exploration and Production Company Limited (SNEPCo) and Shell Nigeria Gas Limited (SNG).
- And Nigeria Liquefied Natural Gas (NLNG) Limited; an incorporated joint venture in which Shell has a 25.6% interest.

Shell Companies in Nigeria have invested in healthcare and education initiatives in Nigeria for decades and they continue to support a range of programmes.

The companies undertake two types of social investment activities:

- Direct social investment across Nigeria, which focuses on community and enterprise development, education, community health, access-to-energy, road safety and since 2018, biodiversity.
- Community-driven development programmes and initiatives in the Niger Delta, which focus on various themes as determined by benefitting communities and delivered through a Global Memorandum of Understanding (GMOU).

There are 39 active GMOUs in Abia, Bayelsa, Delta, Imo and Rivers States. In 2019, three new GMOUs were deployed and 10 GMOUs renewed. The GMOUs provide a secure five-year funding for communities to implement development projects of their choice. GMOU projects cover community health, education, enterprise development and social infrastructure, such as improved water and power supply, and sanitation. Since 2006, a total of \$252 million has been disbursed to communities through these GMOUs.



TOP TEN INNOVATOR IN 2018

In 2018, Nigerian Yolo Bakumor Smith, CEO of De-Rabacon Plastics, won the first-ever Shell LiveWIRE Top Ten Innovators Awards for his business. De-Rabacon is a Nigeria-based plastic recycling and waste management solution company that recycles end-consumer plastics to viable commercial products such as pavement blocks, buckets, cans, and carpets.

"There is often a paper-thin line between success and failure in business, especially for a start-up. The training, support systems and valuable networks I have gained over the last five years courtesy of Shell LiveWIRE, have gone a long way to ensure that my business start-up, De-Rabacon Plastics is thriving," he said.

"Shell's approach to supporting local enterprises to grow and excel is enabling us to scale up our business and focus on designing eco-friendly, energy-efficient and affordable products. Today, my organisation employs 16 people and has recycled over 800,000 tonnes of plastic waste. We plan to achieve two million tonnes by the end of 2020."



Since 2010, more than 27,000 babies have been delivered safely at Obio Cottage Hospital in Port Harcourt.



The Community Health Insurance Scheme was launched in 2010 at the Obio Cottage Hospital, a secondary health care centre in Port Harcourt.

ACCESS TO AFFORDABLE HEALTHCARE

Affordable quality healthcare is a critical enabler to any community. It improves health indicators and outcomes and strengthens families, educational attainment and business opportunities.

Shell has supported community health programmes in Nigeria since the 1980s with equipment and pharmaceutical donations, emergency care and screening services, hospital maintenance and focused interventions on HIV/AIDS, malaria, cancer and vision care. Today, Shell seeks to increase access to health services, introduce health insurance schemes and strengthen health systems.

Shell continues to work with key stakeholders to achieve universal health coverage by increasing access to health and the uptake of services in the communities. The SPDC JV and SNEPCo support 20 healthcare centres and signature intervention projects throughout the country. They include:

Health-In-Motion community care programme

Health-in-Motion (HIM) is a mobile health outreach programme that takes free medical services to where people live and work. Funded by the SPDC JV and SNEPCo, it reaches an average of 50 communities annually. In 2019, HIM services benefitted 27,490 individuals in Imo, Bayelsa, Delta, Rivers and Ogun States. Since its launch in 2010, more than 667,000 people have benefitted from the programme.

Community Health Insurance Scheme

The Community Health Insurance Scheme (CHIS) is a partnership between SPDC, Rivers State Government and local communities. The programme aims to provide affordable, quality healthcare to the people of Rivers State.

CHIS was launched in 2010 at Obio Cottage Hospital, a secondary health care centre, just a short walk from the SPDC JV offices in Port Harcourt. CHIS costs individuals \$30 per year and covers about 95% of people's health care needs. Since 2010, more than 67,000 people have been enrolled. In 2019, nearly 8,500 new clients registered.

The hospital has also seen an increase in the uptake of services. For example, the average number of patients using the facility increased from about 600 at inception to about 7,700 per month in 2019, making Obio one of the most utilised health facilities in the region.

This successful pilot has now been expanded to three other locations, highlighting the possibility for extended healthcare coverage in Nigeria.

Oloibiri Health Programme (OHP)

The Oloibiri Health Programme is a Shell-sponsored local government initiative in the Ogbia area of Bayelsa State. It is designed to improve health outcomes in an innovative and holistic way. The initiative included a full refurbishment of the Kolo General Hospital, which was inaugurated in July 2019.

More broadly, the initiative focuses on improving and maintaining health, not just treating illness. It strengthens local healthcare systems by upgrading and integrating facilities, training and supporting local healthcare and community workers and ensuring a reliable supply of medicines.

The programme has seen a five-fold increase in service utilisation to 4,210 patients in 2019 from an average 833 patients in 2017. It has also provided training for over 130 health workers at community, local and state government levels. In addition to this, it has trained 117 volunteers as facility-based extension workers in house-to-house healthcare.

To anchor the sustainability of the OHP, the initiative aims to establish the Oloibiri Health Foundation that will institute the Ogbia Health Insurance Scheme akin to the scheme in place at the Obio Cottage Hospital. The scheme will be launched with a one-time contribution from Shell and the Bayelsa State Government.



The Oloibiri Health Programme included a refurbishment of the Kolo General Hospital, which was inaugurated in 2019.

SUPPORTING EDUCATION

Educating Nigeria's young population is critical to the success of the country. Shell Companies in Nigeria have a long history of supporting education through scholarships and other initiatives. Since the 1950s, the Shell scholarship schemes have supported several thousands of students many of whom are among Nigeria's business, political and social leaders.

In 2019, the SPDC JV and SNEPCo invested \$7.8 million in scholarships. Since 2011, the schemes have awarded more than 9,400 secondary school grants and over 6,000 university grants to students.

Cradle-to-Career Scholarships

The SPDC JV and SNEPCo invest in the Cradle-to-Career scholarship programme, which pays for children from rural communities to attend some of the country's top secondary schools. The SPDC JV has awarded a cumulative 600 Cradle-to-Career (c2c) scholarships in the Niger Delta. In 2014, SNEPCo began offering these scholarships to applicants across the country, and so far, 471 students have benefitted.

Since 2010, more than 1,000 students have received scholarships. The scholarships cover the full cost of tuition, travel, accommodation, uniforms, books and laptops.

Students completing the c2c secondary school scheme also receive support from Shell through the University Scholarship scheme. This support is dependent on them securing admission to a Nigerian University.



Shell Companies in Nigeria have provided scholarship and education support to thousands of Nigerian children over many years. Here is a class in Otuogidi College of Health Technology.

Tertiary education

Lack of world-class research institutions and limited access to technology are key challenges in enabling Nigerians to play an even greater role in the oil and gas sector. Shell invests in advancing education through university scholarships, student exchange programmes and focused research.

Since 2011, the SPDC JV and SNEPCo have awarded more than 6,000 university scholarships. As part of the drive to motivate students and reward the high performers in the University Scholarship Scheme, the highest-achieving students are then also given the opportunity to participate in the SPDC JV Students Industrial Work Experience (SIWE) programme.

The SPDC JV also established the Shell Niger Delta Post Graduate scholarship programme which has benefitted 92 students from the region over the last decade. The programme offers one-year scholarships to three UK universities for studies related to the oil and gas industry.

To promote the emergence of industry-ready graduates at university level, Shell also invests in specific initiatives at Nigerian universities. The SPDC JV, in collaboration with the University of Benin, funds a Centre of Excellence (CoE) in Geosciences and Petroleum Engineering and has more recently (in 2017), collaborated with the Rivers State University to set up a CoE, which specialises in Marine and Offshore Engineering. The CoEs offer specialised post-graduate degrees in Geosciences, Petroleum Engineering and Marine and Offshore Engineering respectively. Each programme lasts for 18 months and culminates in a six month internship with an oil and gas company, some within Shell. By the end of 2019, over 75 students had graduated from the programmes and over 81% of these graduates are currently employed.



Cradle-to-Career scholarships cover the full cost of tuition, travel, accommodation, uniforms, books and laptops.



Shell LiveWIRE winner Esther Bolouebi Ekiotenne, the founder and CEO of FarmToJuice.

ENTERPRISE SUPPORT

Shell works to improve the chances for Nigerians to achieve their ambitions. In addition to providing access to loans to small and medium businesses which could become Shell suppliers and contractors, there is also the LiveWIRE youth enterprise development programme. LiveWIRE was launched in Nigeria in 2003 and provides training and finance to young people between the ages of 18-35 to start or expand their own businesses.

In 2019, 140 people benefitted from the LiveWIRE programme, receiving training in enterprise development and management, as well as business start-up grants. More than 7,000 Nigerian youths have so far been trained under the programme and almost 4,000 young entrepreneurs were provided with business grants.

Two Nigerian enterprises were shortlisted in 2019 for the Shell Global Top Ten Innovators Awards – a global competition which highlights and rewards businesses that demonstrate excellence in innovation as well as giving entrepreneurs a chance to shine on a global platform. The enterprises were FarmToJuice and Foods Nig. Ltd (“FarmToJuice”) and Basiled Energy Ventures. FarmToJuice produces juices, processing any waste into livestock feed and using a biogas digester to provide energy. Basiled provides solar lamps, solar installation maintenance and repair and solar battery recycling services.

Shell LiveWIRE in Ogoniland

In 2014, Shell extended LiveWIRE to Ogoniland despite the SPDC JV no longer producing oil and gas in the area. Shell’s aim was to help raise living standards and reduce crude oil theft in the area through the promotion of sustainable alternative livelihoods. This was in line with one of the recommendations of the 2011 United Nations Environment Programme (UNEP) Report for the restoration of the Ogoni environment.

In 2018, 100 Ogoni youths from communities near the Trans Niger Pipeline participated in training with 80 top performing trainees receiving business start-up funding amounting to more than \$90,000.

In 2019, the Ogoniland programme gave way to a livelihood programme led and executed by the Hydrocarbon Pollution Remediation Project (HYPREP), an agency established by the federal government and to which the SPDC JV contributes funds. The programme will train 1,200 Ogoni women in various skills.

SHELL LIVEWIRE

Every year Shell LiveWIRE supports thousands of individuals to access the knowledge, skills, networks and resources to turn their business ideas into successful enterprises which provide a sustainable income, create jobs and drive innovation.

The purpose of LiveWIRE is to improve opportunities for young people to realise their potential through the creation and development of their own businesses. Such businesses will contribute towards a more buoyant economy and communities with more fulfilled young people.



Click on this link to read about some of the entrepreneurs who have benefitted from the programme.

➔ <https://ng.livewire.shell/case-studies.html>

ASSISTANCE AND SAFETY

Shell Companies in Nigeria understand their responsibility when it comes to providing support for humanitarian and safety programmes, such as those providing relief to displaced persons or training for emergency workers.

Humanitarian Assistance

For many years, Shell has sustained a culture of care by supporting humanitarian programmes in Nigeria to save lives, especially during crisis and disaster.

In 2017, a contribution of more than \$3 million to the Mercy Corps and Family Health International programme benefitted over 70,000 displaced persons in north eastern Nigeria. Then in 2018, SPDC provided relief materials worth \$1 million to communities hit by floods in the Niger Delta and two other severely impacted states in the country.

Road safety and firefighting

In 2019, SNG continued to demonstrate its commitment to road safety in Nigeria by extending existing collaboration with the Federal Road Safety Corps in Ogun State to Rivers State. The campaign has held 26 road safety awareness events and reached more than 5,000 people since its launch in 2007.

SNG also held a one-day hydrocarbon training for firefighters from Abia and Ogun States to further strengthen their capability.



Shell Companies in Nigeria provide support and relief to thousands of displaced persons in north eastern Nigeria.

Humanitarian Relief in the North East

Since 2018, SPDC and SNEPCo have committed \$6 million to the government-driven strategic intervention projects for Internally Displaced Persons (IDP) in Yobe and Borno States. The projects focus on immediate relief and critical support development related to health, water and sanitation, education and shelter.

By the end of 2019, the SPDC JV and SNEPCo completed the distribution of food, essential hygiene kits and other relief items to over 5,500 vulnerable households in IDP camps and impacted communities. SPDC also commenced project work on school reconstruction, and teacher training, upgrading of a Primary Health Care Centre and water and toilet facilities in Yobe State.



Financial support for humanitarian relief in north-eastern Nigeria.

ACCELERATING ACCESS TO ENERGY

Enterprise development, opportunities for education and access to affordable healthcare hinge upon being able to have reliable and cost-effective energy. Shell aims to provide a reliable electricity supply to 100 million people, primarily in Africa and Asia by 2030. Nigeria features in that vision.

Despite its oil and gas resources, Nigeria has one of the highest levels of energy poverty in the world⁷. In addition to investing in Nigeria's gas development and distribution network, Shell has established All On to boost off-grid supply to homes and small businesses in the Niger Delta.

All On, an impact investing company, became operational in 2017 and is an independent Nigerian company that works with partners to increase access to commercial energy products and services. In December 2019, Shell made a significant additional long-term financing commitment to All On.

⁷The Nigeria Energy Report, All On publication.



Employees assemble solar panels at an Auxano factory in Lagos. Auxano is one of All On's impact investment partners.

All On invests in off-grid energy solutions spanning solar, wind, hydro, biomass and gas technologies that complement available grid power across Nigeria. It also aims to help create a more enabling environment for start-ups and to provide them with low-cost financing.

In 2019, All On executed an innovative financing instrument with Renewvia (www.renewvia.com) to provide affordable access-to-energy solutions. Through this financing, at least eight mini-grids with a target capacity of 900kW will be installed in various communities.

Working with Breakthrough Energy Ventures, Norfund and ElectriFi, All On also participated in the \$9 million equity financing round in Arnergy (www.arnergy.com) which has enabled Arnergy to scale operations and provide solar energy systems for 1,500 small and medium-sized enterprises.



Dr. Wiebe Boer, CEO of All On.

ACCESS TO AFFORDABLE OFF-GRID ENERGY

Interview with Dr. Wiebe Boer, CEO, All On

Education: PhD, Yale

Joined All On: 2017

Impact:

Nigerians deserve more reliable energy. Positive change is coming. Already All On has invested in 21 off-grid energy companies and two funds, leading to 21,000 new connections for low income households and businesses. The journey is just beginning.

Approach:

Getting Nigerians energy is what we do. Today, grid electricity can be unreliable and back-up generators are expensive and noisy. We help finance businesses that use emerging clean energy technologies to support the creation and growth of sustainable off-grid energy businesses for urban and rural customers.

Hopes:

Affordable, available energy changes lives. School kids can do their homework, agriculture products can be processed and preserved, businesses can thrive, and hospitals and schools can function.

Challenge:

About 75% of Nigerian households and small businesses are either off-grid or have poor-grid connection. The scale of the energy access gap in Nigeria is a formidable and urgent problem. My challenge is how do I execute fast enough to make a significant impact without compromising on safety, quality, or anything else.

Off grid energy will drive a transformation in Nigeria.

Wiebe

SPDC is making good progress on responding to spills through a solid strategy, active partnerships, closer community engagements and bold security measures.



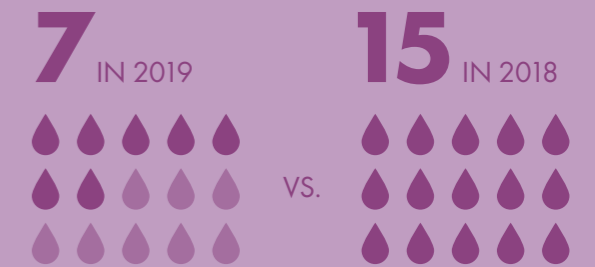
SPILL RESPONSE & PREVENTION IN THE NIGER DELTA

The SPDC JV continues its relentless focus to prevent spills from oil production in the Niger Delta. In 2019, the company reduced operational spills to their lowest levels, significantly reduced breaches from wellheads and cleaned up more spill sites than ever before.

There is still much work to do but through a solid strategy, active partnerships, closer community engagements, bold security and new surveillance equipment, the company is making good progress.

- Improving performance.
- Preventing illegal activity.
- Response and investigation.
- Improving remediation.
- Clean-up in Ogoniland.

OPERATIONAL SPILLS FALL TO



7 DAYS

CLEAN-UP IN 2019 VS 13 IN 2016

THEFT AND SABOTAGE-RELATED SPILLS IN 2019

156

130



SITES REMEDIATED IN 2019

Data for spills >100kg.

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- And Nigeria Liquefied Natural Gas (NLNG) Limited; an incorporated joint venture in which Shell has a 25.6% interest.

The Shell Petroleum Development Company of Nigeria joint venture (SPDC JV) produces oil and gas in the Niger Delta. The region is made up of lush forest, farmland for cassava, pineapples and cattle grazing, large and small communities and rivers and marshes that stretch into the Gulf of Guinea. Past spills from operational and illegal activities have been well documented, resulting in a clean-up programme and, where appropriate, compensation.

The SPDC JV is working to eliminate spills from its operational activities, remediate past spills and prevent spills caused by crude oil theft, sabotage of pipelines or illegal oil refining. While SPDC operates to the same technical standards as other Shell companies globally, illegal activities continue to inhibit a normal operating environment.



SPDC Remediation and Oil Spill Response Team are always ready to respond.



When a leak is identified, the team responds to contain any spilled oil and clean up.

IMPROVING PERFORMANCE

Shell has a global ambition to achieve no harm and no leaks across all its operations. This is known as Goal Zero. To reduce the number of operational spills in Nigeria, the SPDC JV is focused on implementing its ongoing work programme to appraise, maintain and replace key sections of pipelines and flow lines. In 2019, SPDC completed another 30 kilometres of new pipelines, bringing the total laid over the last eight years to around 1,330 kilometres.

These efforts have significantly reduced operational spills over 100 kilograms to seven incidents and 28 tonnes of crude in 2019, compared to 15 incidents and 413 tonnes in 2018. This represents a year-on-year reduction of more than 90% by volume, returning the joint venture to its trend of reducing operational spills.

Community engagement and the ongoing commitment from government agencies has also helped shorten response times to incidents. SPDC's average⁸ time to complete the clean-up of free and/or residual spilled oil

has halved from 13 days in 2016 to seven days in 2019. Closer engagement with communities has helped SPDC to access spill locations more quickly, meaning on average that joint investigations now commence within three days in 2019 compared to six days in 2016.

However, the challenge of preventing spills relating to sabotage and theft by third parties remains. These illegal activities accounted for 95% of the SPDC JV spill incidents in 2019, a similar proportion to previous years.

In 2019, there were 156⁹ theft and sabotage-related spills over 100 kilograms, up from 109 in 2018. This is due to factors such as increased availability of production facilities after a major export line repair in 2017, crude theft activities in an election year when government security agents can be reassigned, and the price of crude oil and refined products that is seen as an opportunity for illegal refining. Despite preventive efforts, spilled volumes from illegal activities increased to around 2,000 tonnes of crude in 2019, compared with around 1,600 tonnes in 2018.

⁸Averages exclude sites where significant delays were encountered outside of our operational control due to security, community disturbance of flood conditions.

⁹In addition, there were four separate sites where crude oil was released from a tanker truck onto SPDC's pipeline right of way. The source of the crude is not known and could not be linked directly to any unique or identifiable SPDC assets or spill points.



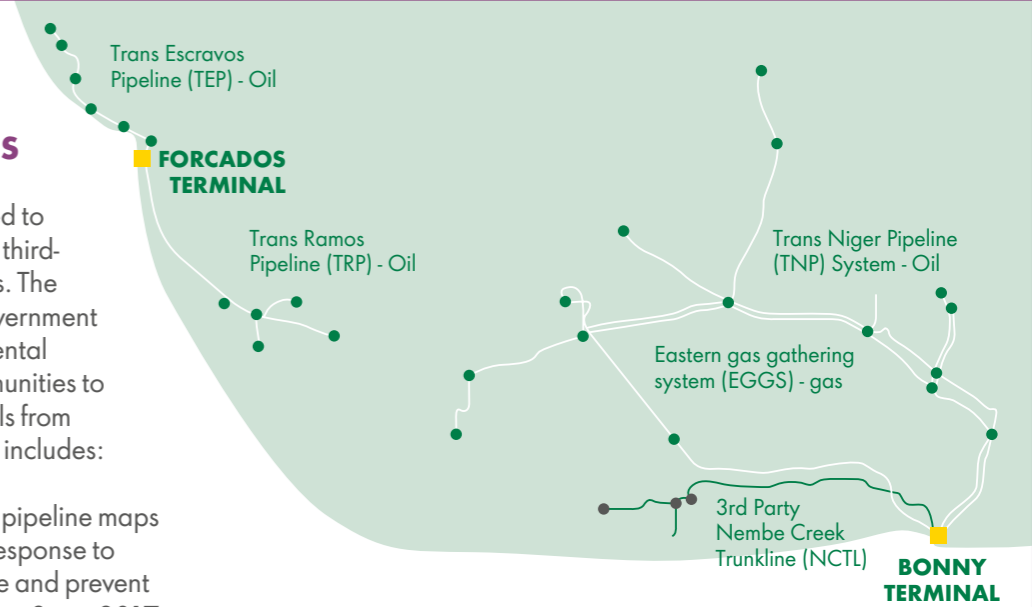
Wellhead cages like this one protect infrastructure and deter illegal activities.

THE SPDC JV PIPELINE SYSTEM IN THE NIGER DELTA

PREVENTING ILLEGAL ACTIVITIES

The SPDC JV is committed to minimising the impact of third-party incidents and spills. The company works with government agencies, non-governmental organisations and communities to proactively minimise spills from illegal activity. This work includes:

- Using simplified zonal pipeline maps to enhance targeted response to third-party interference and prevent incidents from occurring. Since 2017, SPDC has also been able to remove more than 523 illegal theft points. Illegal theft points are identified by daily inspections from the air and on the ground.
- The company has also implemented anti-theft protection mechanisms, such as anti-tamper locks and steel cages for wellheads. Around 301 cages have been installed so far and around 80 more are planned for 2020 that will all come with CCTV technology. In 2019, three breaches of the cages were recorded out of 300 attempts. As a result, wellhead-related losses significantly dropped from about 30 kb/d in 2016 to less than 1 kb/d in 2019 across all SPDC operations.
- SPDC has also implemented several initiatives and partnerships to raise awareness of the negative impact of crude oil theft and illegal oil refining. Examples include community-based pipeline surveillance, radio jingles and the promotion of alternative livelihoods through Shell's youth entrepreneurship programme, Shell LiveWIRE.



PREVENTION



New pipeline



Wellhead cages



Anti-tamper locks



Surveillance



Community liaison

CLEAN UP



Spill response workers

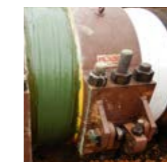


Remediated site



Wildlife returns

CAUSATION



Illegal connections



Illegal refineries

RESPONSE AND INVESTIGATION

When a leak is identified, production is suspended, and efforts made to contain any spilled oil. We regularly test our emergency spill response procedures and capability to ensure staff and contractors can respond rapidly to an incident. In line with government regulations, a Joint Investigation Visit (JIV) team visits the spill site to establish the cause and volume of oil spilled. The team comprises representatives from SPDC, regulators, government security agencies, state governments and communities.

IMPROVING REMEDIATION

In addition to responding to recent spill incidents, the SPDC JV continues to identify and remediate legacy spill locations. In 2019, 130 sites were remediated and 123 certified by Nigerian government regulators, compared to 116 certified and 45 remediated in 2018.

Regardless of the cause, SPDC cleans up and remediates areas impacted by spills that come from its operations. In the case of operational spills, SPDC also pays compensation to communities impacted by the spill. Once the clean-up and remediation are completed, the work is inspected and, if satisfactory, approved and certified by Nigerian government regulators.

SPDC works with a range of stakeholders in the Niger Delta to build greater trust in spill response and clean-up processes. Local communities take part in the remediation work for operational spills. In certain instances, some non-governmental organisations have also participated in joint investigation visits along with government regulators, SPDC and members of impacted communities to establish the cause and volume of oil spilled.

SPDC has also worked with the International Union for Conservation of Nature (IUCN) since 2012 to enhance remediation techniques and protect biodiversity at sites affected by oil spills in SPDC's areas of operation in the Niger Delta. This work includes using bioremediation, a process that uses micro-organisms to naturally break down and, ultimately, remove oil contamination.

In 2019, SPDC and IUCN joined forces on the Niger Delta Biodiversity Technical Advisory Group, which also includes representatives from the Nigerian Conservation Foundation and Wetlands International. The groups will continue to work together to monitor biodiversity recovery of remediated sites. Four sites have been assessed and selected as pilot sites for monitoring. These sites represent three ecosystems in the Niger Delta: land, seasonal swamp and swamp.

The Niger Delta Panel, an independent scientific advisor, has also provided input on oil spill response and remediation of soil and groundwater contamination. Based on this, SPDC strengthened its approach in this area.

BIOREMEDIATION USING LAND FARMING TECHNIQUES

SPDC's remediation practices are compliant with the Environmental Guidelines and Standards for the Petroleum Industry in Nigeria (EGASPIN). The techniques adopted by SPDC are believed to be the most effective for the soil and climate conditions in the equatorial heat of the Niger Delta.

Bioremediation using land farming techniques is recognised internationally and often advocated by regulators such as the United States Environmental Protection Agency and the Environment Agency in the UK. It aims to restore the

land to conditions acceptable to human health and the environment. It stimulates the natural microbial processes that break down and use the carbon-rich oil contamination as a source of food and energy, ultimately leading to its removal.

Bioremediation has wider positive impacts, for example in developing local expertise and generating employment. SPDC, however does use other technologies where appropriate.



Bioremediation techniques enable the natural habitat to recover.



SPDC continues to identify and remediate legacy spill locations.

CLEAN UP IN OGONILAND

SPDC is working with the relevant stakeholders to implement the 2011 United Nations Environmental Programme (UNEP) Report on Ogoniland. Over the last eight years, SPDC has taken action on all, and completed most, of the UNEP recommendations addressed specifically to it as operator of the joint venture.

The UNEP report recommended the creation of an Ogoni Trust Fund with \$1 billion capital to be co-funded by the Nigerian government, the SPDC JV and other operators in the area. The SPDC JV remains fully committed to contributing its share of \$900 million over five years to the fund and made \$10 million available in 2017 to help set up the Hydrocarbon Pollution and Remediation Project (HYPREP¹⁰), an agency established by the federal government to lead the clean-up effort.

In 2018, the SPDC JV deposited a further \$170 million into the escrow account to fund HYPREP's activities, to complete its first-year contribution of \$180 million. The SPDC JV in 2019 contributed the next tranche of \$180 million. At the end of 2019, the total contribution made was \$360 million which represents the full amount due for the two years.

SPDC continues to work with the Bodo community and others to clean up areas affected by two operational spills in 2008. A memorandum of understanding granting SPDC access to begin the clean-up was signed in 2015 and two contractors were selected to conduct the clean-up, overseen by an independent project director.

The clean-up consists of three phases: 1) removal of free-phase surface oil, 2) remediation of soil, 3) planting of mangroves and monitoring.

- The removal of surface oil started in September 2017 and was completed in August 2018.
- Field remediation activities started in November 2019 following a contract procurement process to select remediation contractors.
- 800 community workers have been medically checked, assessed for their swimming ability to ensure they can safely respond to incidents in rivers and creeks, and trained to International Maritime Organisation oil spill response Levels one and two.

Remediation is expected to take around 18 months. The clean-up will only be successful if the repeated re-contamination of cleaned-up sites from illegal third-party activity stops.

SPDC ACTIONS ON UNEP RECOMMENDATIONS

Since 2011, SPDC has taken action on all the recommendations addressed specifically to it as operator:

- Re-assessed 15 SPDC JV sites mentioned in the UNEP report and remediated further where required with the sites certified by government regulators.
- Completed an inventory and physical verification of assets for decommissioning and working with joint venture partners and the FGN to develop a decommissioning plan for these assets.
- Completed a comprehensive review of its oil spill response and remediation techniques and made a number of improvements in line with industry best practices.
- Collaborated with the Rivers State Government to deliver water to impacted communities and built water facilities, which are expected to be upgraded as part of HYPREP's planned activities.
- Trained contractors on clean-up and remediation techniques and assigned specialist supervisors to a number of project sites to ensure effective oversight and compliance.
- Continuing to carry out regular aerial monitoring of the JV's facilities in Ogoniland, including the creeks and pipelines, to identify new incidents or activities (such as theft and sabotage) which may result in environmental damage.
- Providing improved public access to information such as Joint Investigation Visit reports and spill incident data via a spills information web site (<https://www.shell.com.ng/sustainability/environment/oil-spills.html>).

¹⁰For more information on the activities of HYPREP go to hyprep.gov.ng.



I GET THE MOST PRIDE AND SATISFACTION WHEN I SEE THAT THE LEAK HAS STOPPED AND THE SITE IS CLEAN.

Chima Nicholas Agomuo,
Remediation Certification Inspector,
Remediation and Oil Spill Response Team



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Remediation and Oil Spill Response Team.

FROM THE FRONTLINE

**Interview with Chima Nicholas Agomuo,
Remediation Certification Inspector,
Remediation and Oil Spill Response Team**

Background/education: B.Sc. Geology
Joined Shell: June 2000

Impact:

I get the most pride and satisfaction when I see that the leak has stopped and the leak site is clean. Then some time later, I'll return and see that the restoration process is ongoing; that I've been able to take care of that.

Approach:

We work to stop the free flow of the spill and reduce it as much as possible to reduce the impact on the environment. We work as a team and this makes it so much easier and faster to do what we do.

Hopes:

We work as a team to protect the environment. If we protect it, we make it safe for generations to come, to enjoy it and to live comfortably on it.

Challenges:

The response team is the first line of response activity. It is a collective effort, not a sole responsibility. You have team members that are there any time you call them to support the response activity.

*We work
as a team.*

Chima

RECOGNITION AND AWARDS

Shell Companies in Nigeria have received numerous awards in recognition of their contribution to the country's social and economic development. Among these are:

2018

Sustainability Enterprise and Responsibility Awards (SERAs): Shell Companies in Nigeria awarded "Best in Climate Action" for the Afam VI Power Plant.

SNEPCo was named the "Best Nigerian Oil and Gas Company in Technology and Innovation" at the Nigerian International Petroleum Summit (NIPS). SNEPCo won the award for pioneering in-country subsea tree refurbishment. This was the first time in the Nigerian oil and gas industry that a subsea tree was fully stripped down and refurbished locally with its original functionality restored.

Petroleum Technology Association of Nigeria (PETAN) names SPDC "Local Content Operator of the Year", marking the third time Shell Companies in Nigeria have won the PETAN award.

Shell Companies in Nigeria were also awarded the "Best Performing International Company in Technology and Innovation" at the first Nigeria International Petroleum Summit, which included recognition of their role in local capacity development and Nigerian content.

2019

Jobberman report names Shell Companies in Nigeria the "Best Company to Work For". Shell led the pack of top 100 companies that respondents admire, respect and desire to work for the most.

Petroleum Technology Association of Nigeria (PETAN) awards Shell Companies in Nigeria "Local Content Operator of the Year" at the 2019 Annual Oil Industry Achievement Awards.

SPDC won the 2019 Nigeria Oil and Gas Conference (NOG) Excellence Award presented to a member of the Nigerian Oil and Gas value chain with the most positive commercial or technical contribution to the industry.

OUR PERFORMANCE DATA

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
FLARING OF ASSOCIATED GAS FROM THE SPDC JV AND SNEPCO OPERATIONS										
Flaring (upstream) (million tonnes hydrocarbon flared)										
Nigeria [A] [F]	0.7	0.6	0.8	0.5	0.9	1.2	1.2	1.5	2.0	2.4

OIL SPILLS AND DISCHARGES FROM THE SPDC JV AND SNEPCO OPERATIONS [B] [C] [D]										
Sabotage spills - volume (thousand tonnes)	2.0	1.6	1.4	3.9	2.3	2.7	2.2	3.3	1.6	3.0
Sabotage spills - number [F]	156	109	62	48	94	139	157	138	118	112
Operational spills - volume (thousand tonnes) [D] [F]	0.03	0.4	0.1	0.3	0.2	0.3	0.4	0.2	5.3	0.7
Operational spills - number [E] [F]	7	15	10	8	16	40	31	37	64	32

- A. Nigeria includes SPDC onshore operations (0.6 million tonnes flared in 2019) and SNEPCo offshore operations (0.02 million tonnes flared in 2019).
- B. All spill volumes and numbers are for spills of more than 100 kilograms.
- C. As of the end of March 2020, there was 1 spill under investigation in Nigeria that may result in adjustments.
- D. Nigeria includes SPDC onshore operations and SNEPCo offshore operations. A single spill at the Bonga field offshore Nigeria amounted to 4.8 thousand tonnes in 2011.
- E. Nigeria includes SPDC onshore operations (7 operational spills in 2019) and SNEPCo offshore operations (0 operational spills in 2019).
- F. We have updated some of our historical figures following review of the data.



CAUTIONARY NOTE

The companies in which Royal Dutch Shell plc directly and indirectly owns investments are separate legal entities. In this Briefing Notes "Shell", "Shell group" and "Royal Dutch Shell" are sometimes used for convenience where references are made to Royal Dutch Shell plc and its subsidiaries in general. Likewise, the words "we", "us" and "our" are also used to refer to subsidiaries in general or to those who work for them. These terms are also used where no useful purpose is served by identifying the particular entity or entities. "Subsidiaries", "Shell subsidiaries" and "Shell companies" as used in this Briefing Notes refer to entities over which Royal Dutch Shell plc either directly or indirectly has control. Entities and unincorporated arrangements over which Shell has joint control are generally referred to as "joint ventures" and "joint operations", respectively. Entities over which Shell has significant influence but neither control nor joint control are referred to as "associates". The term "Shell interest" is used for convenience to indicate the direct and/or indirect ownership interest held by Shell in an entity or unincorporated joint arrangement, after exclusion of all third-party interest.

This Briefing Notes contains forward-looking statements (within the meaning of the U.S. Private Securities Litigation Reform Act of 1995) concerning the financial condition, results of operations and businesses of Royal Dutch Shell. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements. Forward-looking statements are statements of future expectations that are based on management's current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in these statements. Forward-looking statements include, among other things, statements concerning the potential exposure of Royal Dutch Shell to market risks and statements expressing management's expectations, beliefs, estimates, forecasts, projections and assumptions. These forward-looking statements are identified by their use of terms and phrases such as "aim", "ambition", "anticipate", "believe", "could", "estimate", "expect", "goals", "intend", "may", "objectives", "outlook", "plan", "probably", "project", "risks", "schedule", "seek", "should", "target", "will" and similar terms and phrases. There are a number of factors that could affect the future operations of Royal Dutch Shell and could cause those results to differ materially from those expressed in the forward-looking statements included in this Briefing Notes, including (without limitation): (a) price fluctuations in crude oil and natural gas; (b) changes in demand for Shell's products; (c) currency

fluctuations; (d) drilling and production results; (e) reserves estimates; (f) loss of market share and industry competition; (g) environmental and physical risks; (h) risks associated with the identification of suitable potential acquisition properties and targets, and successful negotiation and completion of such transactions; (i) the risk of doing business in developing countries and countries subject to international sanctions; (j) legislative, fiscal and regulatory developments including regulatory measures addressing climate change; (k) economic and financial market conditions in various countries and regions; (l) political risks, including the risks of expropriation and renegotiation of the terms of contracts with governmental entities, delays or advancements in the approval of projects and delays in the reimbursement for shared costs; and (m) changes in trading conditions. No assurance is provided that future dividend payments will match or exceed previous dividend payments. All forward-looking statements contained in this Briefing Notes are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. Readers should not place undue reliance on forward-looking statements. Additional risk factors that may affect future results are contained in Royal Dutch Shell's 20-F for the year ended December 31, 2019 (available at www.shell.com/investor and www.sec.gov). These risk factors also expressly qualify all forward looking statements contained in this Briefing Notes and should be considered by the reader. Each forward-looking statement speaks only as of the date of this Briefing Notes, April 9, 2020. Neither Royal Dutch Shell plc nor any of its subsidiaries undertake any obligation to publicly update or revise any forward-looking statement as a result of new information, future events or other information. In light of these risks, results could differ materially from those stated, implied or inferred from the forward-looking statements contained in this Briefing Notes.

This Briefing Notes may contain references to Shell's website. These references are for the readers' convenience only. Shell is not incorporating by reference any information posted on www.shell.com.

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We may have used certain terms, such as resources, in this Briefing Notes that United States Securities and Exchange Commission (SEC) strictly prohibits us from including in our filings with the SEC. U.S. Investors are urged to consider closely the disclosure in our Form 20-F, File No 1-32575, available on the SEC website www.sec.gov.



SPDC Remediation and Oil Spill Response Team sets out to deal with a spill.

