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UNVEILING OF SHELL'S NEW LENS SCENARIOS

Shell has been developing scenarios to explore the future and deepen its strategic thinking for 40 years. These scenarios draw on wide-ranging expertise from inside and outside the company and over time, have gained a global following among governments, academia and businesses.

On February 28, 2013, Shell released new scenarios that explore two possible ways the 21st century could unfold, with dramatically different implications for society and the world's energy system. One scenario sees cleaner-burning natural gas becoming the most important energy source globally by the 2030s and early action to limit carbon dioxide emissions. The other sees solar becoming the top source by about 2070, but with slower action to address the threat of climate change.

The New Lens Scenarios, which look at trends in the economy, politics and energy as far ahead as 2100, underscore the critical role that government policies could play in shaping the future.

Brunei Shell Petroleum Company Sdn Bhd (BSP) today launched the New Lens Scenarios in Brunei Darussalam at the Goldstone Ballroom, Centrepont Hotel in Gadong, to share results of its global outlook on long-term trends in the energy sector over the next fifty years.

"The roll out of the New Lens Scenarios in Brunei Darussalam reinforces Shell's commitment to collaborate on relevant energy agenda items for Brunei Darussalam and the ASEAN region, " said BSP's Managing Director Ken Marnoch in his welcoming remarks.

He further added, "These areas are of particular relevance to Brunei Darussalam, where energy and water demand continues to grow due to the expansion of energy intensive industries, which are vital to fulfilling the Brunei Darussalam's Economic Vision 2035."

Invited speaker Dr Cho-Oon Khong, Chief Political Analyst at Shell International, provided an overview of the New Lens Scenarios to the guests at the launch.

Dr Khong has 20 years of experience in leading and participating in country scenario projects. He was actively involved in developing the 1995, 1998, 2001 and 2005 sets of Shell Global Scenarios, the 2008 Shell Energy Scenarios and the 2013 New Lens Scenarios.

The launch was followed by a workshop in the afternoon, where participants took part in discussions to better understand the two scenarios and draw out specific Brunei and ASEAN geopolitical, economic and energy storylines.

Dr Khong's presentation explained how Shell's New Lens Scenarios provide an in-depth analysis of how economic, social and political forces might play out over the 21st century, as well as their consequences for the global energy system and environment.

With the world's population headed toward 9.5 billion by 2060 and the rapid growth of emerging economies lifting millions of people out of poverty for the first time, the scenarios project that world energy demand could double over the next 50 years.

Called Mountains and Oceans, Shell's scenarios explore two plausible future pathways for society. Each scenario dives into the implications for the pace of global economic development, the types of energy we use to power our lives and the growth in greenhouse gas emissions. The scenarios look further into the future than many other outlooks and highlight some surprising possible developments. Both see global emissions of carbon dioxide (CO₂) dropping to near zero by 2100. One factor is increasing use of technology that takes CO₂ out of the atmosphere, for instance by burning biomass to produce electricity, and then storing emissions underground. Although the Oceans scenario sees a dramatic increase in solar power, it also envisions greater fossil fuel use and higher total CO₂ emissions over the century than the Mountains scenario, which will likely have more impact on the world's climate.

The scenarios highlight areas of public policy likely to have the greatest influence on the development of cleaner fuels and renewables, improvements in energy efficiency and on moderating greenhouse gas emissions. They include:

- Measures to promote the development of compact, energy-efficient cities, particularly in Asia and other rapidly urbanising parts of the world.
- Mandates for greater efficiency in areas such as transportation and buildings.
- Policies to encourage the safe development of the world's abundant supply of cleaner-burning natural gas -- and to promote its wider use in power generation, transport and other areas.
- A price on CO₂ emissions and other incentives to speed the adoption of technologies to manage emissions, particularly carbon capture and storage (CCS).

Mountains

The Mountains scenario imagines a world of more moderate economic development in which policy plays an important role in shaping the world's energy system and environmental pathway. Cleaner-burning natural gas becomes the backbone of the world's energy system, in many places replacing coal as a fuel for power generation and seeing wider use in transport.

A profound shift in the transportation sector sees global demand for oil peaking in about 2035. By the end of the century, cars and trucks powered by electricity and hydrogen could dominate the road. Technology to capture carbon dioxide emissions from power stations, refineries and other industrial installations becomes widely used, helping to reduce CO₂ emissions from the power sector to zero by 2060. Another factor is the growth of nuclear power in global electricity generation. Its market share increases by around 25% in the period to 2060.

With these changes to the energy system, greenhouse gas emissions begin to fall after 2030. Nevertheless, emissions remain on a trajectory to overshoot the target of limiting global temperatures rise to 2 degrees Celsius.

Oceans

The Oceans scenario envisions a more prosperous, volatile world with an energy landscape shaped mostly by market forces and civil society, with government policy playing a less prominent role. Public resistance and the slow adoption of both policies and technology limit the development of nuclear power and restrict the growth of natural gas outside North America. Coal remains widely used in power generation until at least the middle of the century.

Without strong support from policymakers, carbon capture and storage catches on slowly. By mid-century CCS captures only about 10% of emissions, growing to about 25% in 2075. This slow uptake is the main reason

electricity generation becomes carbon-neutral some 30 years later in the Oceans scenario than in the Mountains scenario.

Higher energy prices encourage the development of hard-to-reach oil resources, as well as the expansion of biofuel production. Oil demand continues to grow through the 20s and 30s, reaching a plateau after 2040. Liquid fuels still account for about 70% of road passenger travel by mid-century.

High prices also spur strong efficiency gains and the development of solar power. By 2070, solar photovoltaic panels become the world's largest primary source of energy. Wind energy expands at a slower pace, due to public opposition to large installations of wind turbines. Elevated demand for coal and oil, a lack of support for CCS and less natural gas development outside of North America contributes to about 25% higher total greenhouse gas emissions than in the Mountains scenario.

To explore Mountains and Oceans in more detail, download Shell's New Lens Scenarios at www.shell.com/scenarios.

Shell has a 40-year history of using scenario planning to explore possible future landscapes and aid strategic decision-making. The latest publication continues a tradition of sharing summaries of the scenarios to contribute to the public debate about possible ways to tackle some of society's long-term challenges.

ENDS.

Notes to Editors: Brunei Shell Petroleum Company Sdn Bhd (BSP) should be referred as BSP or Brunei Shell Petroleum for abbreviation or headline purposes. Brunei Shell Petroleum Company Sdn Bhd's activity is primarily for the exploration and production of crude oil and natural gas from onshore and offshore fields. The Government of Brunei Darussalam and a company in the Royal Dutch Shell Group of Companies each owns a 50% stake in BSP.