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New Members

The ASEG welcomes the following new members to the Society. Their membership was approved at the Federal Executive meeting held on 29 November 2006.

Name	Organisation	State
Darren Ferdinando	ARC Energy Ltd	WA
Ghassan Sweidan	Integrated Geophysical Solutions	WA



Eve Howell receives award for contributions to industry in WA

Congratulations to Eve Howell, Woodside's Director of the North West Shelf Venture. She has been awarded Western Australia's annual Gas Industry Development Award for outstanding contributions to the industry in Western Australia.

Howell has only recently joined NWSV; the award recognises her achievements as

managing director of Apache Energy's Australian operations.

Under Howell, Apache built a strong record of exploration and development in northwest Australia. It discovered and brought into production the John Brookes Gas Field, and developed a gas hub at Varanus Island, northeast of Barrow Island.

Chamber of Minerals and Energy chief executive Tim Shanahan said Howell oversaw an increased volume of gas sales into WA's domestic market. Today Apache provides about 40% of the state's domestic gas – about 230 petajoules a year.

In her new role with NWSV, Howell oversees all liquefied natural gas, domestic gas and condensate production from the giant petroleum development.

Previous winners of this Award include former premier Sir Charles Court, environmentalist and consultant to Chevron Harry Butler, former Woodside chief Bill Rogers, and AlintaGas' founding chief executive Phil Harvey.

And for those who do not know Eve, she was President of the ASEG in 1988.



Anton Linder Hales

1 March 1911–11 December 2006

Anton Hales, a distinguished geophysicist whose career spanned three continents, died peacefully at Queanbeyan on 11 December 2006 aged 95. He served as the first Director of the Research School of Earth Sciences (RSES) of the Australian National University (ANU) from 1973 to 1978 and during this period RSES became one of the leading geoscience institutions in the world.

Anton was born on 1 March 1911 in Mossel Bay, South Africa. Showing an early brilliance for science, he graduated from

the University of Cape Town at age 18 in physics and mathematics, awarded with distinction, and received an MSc the following year. At age 20 he was appointed a junior lecturer in Applied Mathematics at the University of the Witwatersrand in Johannesburg. The following year he went to the University of Cambridge, where he studied with the famous mathematician and geophysicist Harold Jeffreys. Jeffreys' influence can be seen in the geophysical pursuits he followed for the rest of his life. He finished the 'maths tripos' at Cambridge in 1933, and returned to the Applied Mathematics Department at Witwatersrand, where he carried out geophysical research, notably in seismology. He was awarded his PhD from the University of Cape Town.

World War II interrupted his scientific career, and he served as an engineering officer in the North African Campaign, exploring for sources of fresh water. After the war, Hales joined the Bernard Price Institute of Geophysical Research at Witwatersrand, developing seismic equipment, and gravity measurements using pendulums, before returning to Cape Town as Professor and Head of Applied Mathematics. In 1954 he was appointed Director of the Bernard Price Institute, and put great energy into advancing geophysical methods. These included paleomagnetism, which was used at the time to demonstrate continental drift.

In 1962 Hales moved to the USA where he became first head of a new geoscience program at the Southwest Center for Advanced Studies (later the University of Texas) at Dallas. This decade was one of great activity in geophysics and geochemistry, and Hales made his laboratory a front-runner in a number of key areas. One was seismology, in which he conducted experiments designed to understand the structure of the crust and upper mantle, an interest which he was to develop further at ANU.

After 11 years building a new department and a new university in Texas, Hales, at an age when many people contemplate retirement, joined the ANU and established the RSES. He accomplished this task with distinction, and was a strong supporter of a non-departmental structure, so that the science would not be constrained within traditional boundaries. His bold style of leadership with minimal bureaucracy was indicative of the period, and led to successes such as the development of the SHRIMP ion microprobe.

Hales actively pursued science which was focussed on the Australian continent and its setting, in all of field studies, laboratory analyses and instrument development.

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Chevron Texaco awarded \$60 million to bury CO₂ beneath Barrow Island

The Australian government has awarded a \$60 million grant from the 'Low Emissions Technology Demonstration Fund' to Chevron Texaco. The grant will be used on a CO₂ geosequestration project on Barrow Island associated with the development of the Gorgon Gas Fields, which are located about 200 km offshore, west of Dampier, on the north-west coast of Western Australia.

A total investment of about US\$11 billion will be required by the Gorgon Joint Venture to fully develop the gas fields.

Chevron Texaco is the operator with ExxonMobil and Shell being the other joint venture partners. It will be a massive project with the China National Offshore Oil Corp Ltd (CNOOC) by itself purchasing up to 100 million tonnes of gas over 25 years.

The plan is to pipe all the gas from the Gorgon Fields to Barrow Island where the CO₂ will be stripped from the LNG, liquefied and pumped into the Upper Jurassic Dupuy Formation at a depth of about 2.5 km. Figure 4 shows schematically what is envisaged.

The aim will be to bury 3 million tonnes of CO₂ per year over the 40 year length of the project. As a consequence (according to a Chevron media release) the greenhouse gas emissions from the Gorgon LNG Development are forecast to be reduced

from 1.22 to 0.81 tonnes of CO₂-equivalent per tonne of produced LNG. So the CO₂ will not be eliminated completely but will be reduced significantly.

The only question I have is; why does the government have to give \$60 million to Chevron, which in 2006 made a profit of US\$14.1 billion?

The precedent has now been set for all the new coal fired power stations and all the new LNG developments to queue up for government handouts for sequestering the unwanted CO₂ by-products. I would have thought that if the government was serious in reducing greenhouse gas emissions it would require all new projects of this nature to have a sequestration strategy in place before approval was given.

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He encouraged his staff to become globally engaged and led by example, serving as President of the Inter-Union Commission on Geodynamics and being active in the International Union of Geodesy and Geophysics.

After his retirement from ANU in 1978, Hales resumed his research activities in Dallas as a professor of geosciences, at the same time maintaining his family home in Canberra. He retired from Dallas in 1982, and back in Australia the great energy that remained with him went into establishing a new family house and garden on a bush block in Wamboin (NSW). His geophysics interests continued, with him contributing and mentoring in a visiting position at RSES. Hales' career spanned much of the twentieth century, and his scientific honours included Fellowships of the Royal Society of South Africa, the American Geophysical Union, and the Australian Academy of Science. They indicate the esteem in which he was held in these three continents.

Anton married Marjorie Carter in 1936, and they had two sons, James and Peter. Marjorie died in 1957, and his second marriage was in 1962 to Denise Adcock, to whom two further sons were born, Mark and Colin. Mark died in a car accident in 2004. Denise provided strong support throughout the forty-four years of their marriage, and her love and care ensured that Anton enjoyed his retirement up to the end. He is survived by Denise, three sons, and seven grandchildren.

Ted Lilley (with contributions by Kurt Lambeck and Charles Barton)



Satoru Ohya

25 February 1932–13 November 2006

Satoru Ohya, a former President of the Society of Exploration Geophysicists of Japan (SEGJ) died on 13 November 2006 from injuries he sustained after a cycling accident.

Satoru was President of SEGJ in 2001 and came to the Brisbane ASEG conference in August that year, where he was instrumental in negotiating a cooperation agreement, between ASEG and SEGJ. He also initiated the publication of the joint Exploration Geophysics issues involving the ASEG, the SEGJ and the Korean SEG.

He was a champion of increasing cooperation in Exploration Geophysics in the Asian region.

Satoru Ohya was born in February 25, 1932. He graduated with Masters in Geology from the University of Tokyo in 1955. In 1957 he joined OYO Corporation (a Japanese geotechnical consulting company) where he worked for many years serving as its President and CEO from 1993–2001.

In recent years he served as a member of many advisory boards of Government and non-Government organisations including: the Advisory Board in Geosciences, Stanford University; Board of Directors of World Seismic Safety Initiative (WSSI); Chairman of Geohazard International National Institute of Advanced Industrial Science and Technology (AIST); Chairman of the Geological Information Utilization and Promotion Initiative (NPO-REIC); member of the Technical Committee of the Japan Geotechnical Consultants Association (JGCA) and Vice Chairman of the Real Time Earthquake Information Consortium (NPO-REIC).

Satoru Ohya never retired. On Saturday 11 November, he was bicycling to his office when he remembered that he had left something at home and U-turned. He was then hit by a motor bike, was severely injured, and died in hospital two days later, primarily from the loss of too much blood.

He will be greatly missed by all his colleagues for his encouragement and optimism. His wake on 16 November and funeral on the following day were attended by more than 1000 mourners each.

Koya Suto

Preview



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