

## Success Stories from the WTIA SMART TechNet Project

SUCCESS STORY NUMBER 2: OFFSHORE OIL AND GAS – *Technology introduced by WTIA improves productivity for a major exploration company as well as spins off new business opportunities for a local Western Australian SME.*

### The background

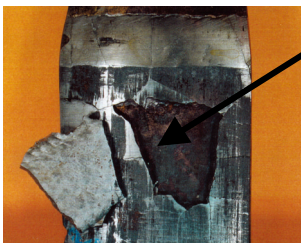
Woodside Energy Ltd/Kellogg Joint Venture (WEL/KJV) has undertaken total capital investment of more than \$9 billion in the North West Shelf Venture, the biggest and one of the most important natural resource developments ever undertaken in Australia. The development will not only bring new supplies of natural energy to Western Australia but also deliver significant exports, such as the recently announced \$25 billion LNG supply over a 25 year period to the People's Republic of China. The project is also expected to generate \$1 billion of work for Australian companies supporting the expansion, operation and maintenance of the new infrastructure.

WTIA has been working with WEL/KJV, a Sponsor of the SMART TechNet Project, and local sub-contractors to ensure that Australia companies win their share of contracts and that work is carried out efficiently and to the highest possible standard.

An example of this cooperative effort and the spin-off for Australian industry is given here.

### The challenge

Spalling problems were experienced on the 5 1/2" WT56 drill string used in oil and gas exploratory work in Karratha, Western Australia.



Spalled hardfacing results in down-time and equipment damage which can cost \$millions.

A US company has dominated "hardbanding" practice on drill rods for 25 years. Wear resistant alloy was universally applied to the collars of drill rods to protect them from accelerated wear caused by rubbing on the inside wall of the steel casings.

The casings can be 6 km long, in drill holes below the sea floor. Down-hole spalling failures were the cause of serious interruptions to exploration and production.

### WTIA Technologists

WTIA investigated the problem, and concluded that the US material was effective for application on virgin carbon steel, but was unsuitable for rebuilding of worn drill rods.

WTIA engineers developed a hard banding procedure using a new nickel alloy deposit containing wear resisting complex carbides. The new procedure was introduced in early 2001 and over 400 rods have been processed, and have given trouble-free service over 2 years.

### The benefits to industry

- Oil and gas exploration companies will save \$millions in terms of down-time, equipment damage and lost production.
- Local SME, Gearhart United has taken up the technology and has built a strong business servicing the upstream Oil & Gas Industry. Shaun Southwell, Regional manager, commented that "the new technology has reduced the risk of casing damage during drilling operations, and extended the life of drill pipe, reducing operator's costs. As take-up of the new technology grows, so will our business, and the benefits to our customers."



Karratha, Western Australia

