

# Engineers do dirty work on clean technology

Whether developing or investing in clean technology, it could pay to have Queensland engineers, e3k, do the dirty work.

Image: NASA



Space-age solutions come from a cross-fertilisation of ideas.

**E**ngineering 3000, a division of Brisbane Technology Park-based Gilmore Engineers – branded e3k – is a mechanical engineering consultancy with a fine record in research and development, notably new product and intellectual property development.

Many e3k clients work at the cutting edge, developing technologies to produce energy from renewable resources, reduce emissions, reduce waste, and benchmark or reduce energy consumption.

According to e3k director, Duncan Gilmore, interest in sustainability continues to skyrocket.

“The industrial and information revolutions drove the 19th and 20th centuries. Clean tech could well be the technological driver for the 21st century,” Dr Gilmore said.

Gary Weaven, chairman of Industry Funds Management, recently told *BRW* magazine, “Clean technology is a bit like the dotcom boom, where you get some good prospective companies, but a lot of rubbish as well.”

## ENVIRONMENT CONCERN

In that late 1990s climate, frenzied investors were attracted to, and fuelled, record-breaking rises in stock

values, paying little regard to the actual technologies and business models being touted.

“When the dotcom bubble burst, many investors learned that when you’re living on the bleeding edge, you should not be surprised when you do, in fact, bleed,” Dr Gilmore said.

Similarly, in what he calls this “clean tech bubble” climate, green startups and SMEs (small to medium enterprises) can be seen scrambling to attract venture funding, with many relying on overblown or unproven claims of performance, efficiency, profitability, or environmental benefits.

“Many companies have difficulty understanding and/or addressing the technical risks they face in developing a new product,” said Ben McGarry of e3k. “There’s a common perception that if an idea is good enough, the technical details will take care of themselves.

“This is often true, but the big question is whether it can be done economically,” Dr McGarry said.

As a consulting service with a long track record of research and development (R&D) successes in applications as diverse as ocean current power generation and water purification, Dr McGarry said e3k can assist in identifying, mitigating and reducing technical

risk in developing new technologies.

E3k engineer Grant Stonier said, “With a birds-eye view of a very broad range of technologies, we’re often able to find solutions for our clients’ problems by adapting and tweaking proven technologies from a completely different problem space. No-one wants to reinvent the wheel.”

## IDEAS CROSS FERTILISE

This ‘innovation via cross-fertilisation’ is not only a classic innovation strategy – he cited the example of Velcro coming out of the NASA space program – but it is also a means to reduce the exposure to technical risk, allowing developers to concentrate on a single ‘front line’ technical battle.

Even short of undertaking technical development, e3k can quickly provide realistic, unbiased predictions of performance, based on established engineering principles, on reviews of relevant academic literature, and on comparisons with related technologies.

“Some of our clients are just looking to invest in a particular technology and they want a reality check – is this technology practically feasible or a complete pipedream? What are its advantages and pitfalls?” Mr Stonier said.

“We can undertake a very technical assessment but then provide results that enable non-technical people to make informed business decisions. For an investor looking to maximise their return, that service is very valuable.”

E3k uses engineering principles to assess and mitigate technical risk, providing credible input and opinion on the performance of bold new technologies in a highly speculative clean tech market.

Dr Gilmore said the iconic physicist, Richard Feynman – who won the Nobel Prize 1965 and assisted with the development of the atomic bomb during World War Two – said it best in the aftermath of the Challenger space shuttle disaster (he was a member of the investigative panel): “For a successful technology, reality must take precedence over public relations, for nature cannot be fooled.”

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