

BIO FUELS

The development of biofuel technology for aviation spearheaded by Qatar University team Hareb al-Jabri and Dr Malcolm Potts

Interviewed in Doha for *Oryx Premium* by Victoria Scott



On a bright spring day in the leafy, manicured surroundings of Qatar University's campus, I'm met by two of the university's leading scientists. Qatari Hareb al-Jabri and Briton Malcolm Potts greet me warmly and lead me through a network of shaded walkways to their office.

A KNOWLEDGE-BASED ECONOMY
Qatar's 2030 vision aims to move the country towards a knowledge-based economy, and QU's biofuels research team is a great example of this ambition becoming reality. 50% of the project's researchers are Qatari. "All of our Qatari staff graduated from Qatar University and we hired them immediately," says Potts. "We trained them, and now they are very independent and very skilful."

When evaluating the project, it's important to consider this added value, he argues. "We've built infrastructure from nothing here, and it's internationally competitive, certainly the best in the GCC," says Potts. "And we're training a whole new generation of Qatari scientists."

Qatar University boasts a number of distinguished alumni, the most famous of which is Her Highness Sheikha Moza bint Nasser, the Emir's wife and chair of the Qatar Foundation. Other notable former students include Dr Hayat Maraafi, executive director of QatarDebate, and Qatar University President Dr Sheikha Al-Misnad.

"This is one of our labs," says Potts, pointing to a room we pass on our right. "It used to be a study room, full of desks and books. We had to start from scratch."

The two men certainly put together QU's biofuels research team in a short space of time. In January 2010, Qatar Airways, the Qatar Science & Technology Park (QSTP), and Qatar Petroleum jointly announced their intention to investigate the use of biofuels for the aviation industry. Potts, who had been a Professor at Qatar University's Biological & Environmental Sciences department for some years, was asked to come up with a proposal for the project.

"We knew that microalgae would be the best option for a fuel," says al-Jabri. "What helps

us to grow microalgae here is the climate, the CO₂ concentration, and sunlight. These three things are essential."

Potts's proposal was accepted, and by November 2010, he was in post as Director of the project, with al-Jabri following shortly afterwards as Project Manager, having completed his Biochemistry Masters at Virginia Tech in the USA.

Now, two years down the line, they believe they can produce a competitively priced, reliable fuel based on single-celled organisms (cyanobacteria and microalgae) that are unique to Qatar. "We've isolated a unique collection of strains from around the country," explains Potts. "It's these organisms, which were growing in the area around here 3.5 billion years ago, that led to all of the oil and gas that's here in Qatar. So we're completing the circle."

Having studied these strains in the laboratory, the team has now moved focus to Qatar University's farm in the north of Qatar, at Al Khor. Here, they have grown the organisms, first in 1,500-litre and then 25,000-litre outdoor tanks.

