Future power is 'a very strange mix'

DES RYAN

HYBRID power schemes — a combination of clean new and dirty old technologies — offer the best prospect of delivering Australia a low-carbon energy future.

The forecast comes from John O'Brien, managing director of Adelaide-based consultancy Australian CleanTech and a member of the SA Premier's Climate Change Council, which provides advice on reducing greenhouse gas emissions and adapting to climate change."

O'Brien says there will be many different solutions based on the resources available at a given location that can be combined commercially.

"You could put geothermal and solar-thermal altogether — if it is windy you do wind," he says.

"If you have got gas and solar, then it makes sense to do both; or even coal power and solar to reheat the steam or add further steam into the turbine process."

With engineering degrees from the University of Oxford and Trinity College, Dublin, and an MBA from the University of Adelaide, O'Brien worked for Origin Energy for nine years researching and modelling new projects in clean energy, "everything from biofuels to solar-thermal", as well as water treatment processes.

In 2007 he set up Australian CleanTech to help business and private equity groups better understand emerging technologies, to identify the ones more likely to succeed financially and to help raise capital or find investment partners.

The spread of Australian CleanTech's projects is now what O'Brien calls a "very strange mix", including nano-technology water biosensors, which can detect and potentially eliminate contaminants in water.

With clean energy he sees great potential in solar photovoltaic (PV) technology, notably the work being done by Australian company Dyesol in using a process of artificial photosynthesis to absorb light and convert it into power.

"They are working with Corus (Europe's second largest steel producer) to make roofing material. They are working with an Italian glass manufacturer to make office block window material.

"Once that gets sensible from a price point of view then everything we build will have integrated PV in it."

Another initiative that interests O'Brien is "distributed wind", small neighbourhood turbines to produce power for households and small businesses, as well as locally owned community projects using larger turbines linked by distribution lines.

"You are going to get some of the smaller-scale turbines rather than the big wind farms that cities don't like near them," he says.

Australian CleanTech is also working with Acquasol Infrastructure to develop a solar desalination plant near Port Augusta using an array of parabolic mirrors to generate electricity and produce fresh drinking water.

According to O'Brien, large-scale solar power generators are unlikely to survive as stand-alone operations without government support of some description, such as through the commonwealth's $1.6 billion Solar Flagships grants.

"The other way is to do almost an operating subsidy by establishing premium tariffs specifically for 'big solar', which is what they have done in Spain and Germany," he says.

"It effectively underwrites the project. I guess it costs more but it is distributed among all consumers."

Renewables compete f