

INTERVIEW

Revolutionising hazardous waste management in Australia:
Interview with Reinhard Schmidt, CEO, econ industries GmbH



Reinhard Schmidt, CEO, econ industries GmbH

What prompted you to establish a business focussing on waste management?

I have been working in the waste management and environmental business for 20 years already. Initially, our activities were focussed on technical solutions to treat industrial wastes with soil washing, mechanical separation, immobilisation/solidification etc. About 10 years ago, we recognised that more stringent regulations and rising landfill expenses required a more sophisticated processing method, especially for hazardous industrial waste. We decided to develop new technologies in this sector. After intensive research econ industries established the VacuDry® technology as state-of-the-art solution to remove volatile contaminants such as mercury, pesticides, PAH's, PCB's and many more.

Are there significant differences between hazardous waste management in Australia and Germany?

It took an extremely long time to establish the regulations and technologies in Europe. More than 50 years ago, the first decisive steps were made to which public awareness, regulations and technologies developed simultaneously. Today, Australia is able to benefit from this history by not repeating the same experiments and mistakes that were made in Europe. Australia has the great chance to establish proven, efficient and sustainable technologies – without going through an experimental phase.



Which industries contaminated soils predominantly in the past? Have those industries adapted their processes to operate more sustainably now?

The most serious risks arise from industries dealing with toxic, volatile and/or soluble contaminants. First, there is the petrochemical industry dealing with all ranges of hydrocarbons. Then, there are the contaminations from former chlor-alkali electrolysis plants, a process used since decades to generate hydrogen, chlor and caustic soda. In general, in the past the majority of the processes in the chemical and also in the metal industry somehow caused more or less critical contaminations. Today, at least in the more developed countries, companies, regulators and population usually have a common understanding of what is right or what is wrong. But this does not prevent us from a minority of black sheep that still need detailed supervision through local authorities.

What environmental and health risks are linked to mercury contamination? Do you believe conventional waste treatments provide an adequate solution?

The toxic effects of mercury compounds, especially a long lasting exposure to mercury vapours, mainly cause damages to the brain, kidney and lungs. The fact that mercury is volatile under atmosphere conditions requires special precautions at contaminated sites. A full encapsulation of a site by a concrete slab and a sheet pile wall in combination with a 100% ground water remediation is a possible solution but does not solve the problem on a long-term basis. Another alternative is to excavate the soils, stabilise them by cement and dump them at a double-lined landfill. Here it is again questionable if such a stabilisation is sustainable enough for more than one generation. The only responsible and sustainable solution to finally solve the problem – also for the successive generations – is to excavate the contaminated soils and completely remove the mercury from the soil by thermal desorption.



In terms of energy efficiency and low emissions the VacuDry technology is a state-of-the-art solution.

Where do you see investment opportunities for econ industries in Australia?

For the clean-up work on contaminated sites econ industries is prepared to enter partnerships like e.g. joint ventures with local investors to establish mobile treatment facilities. Our target is to convert contaminated sites to valuable pieces of land. During operation each of these units will generate about 15 jobs for mechanics, technicians and engineers. We also intend to manufacture parts of these units locally.

Before deploying your soil contamination solutions, the soil has to be analysed in a testing centre. What are you looking for in these tests?

The aims of the pilot tests and the subsequent analyses of the treated materials are to study the technical and economical feasibility of a full-scale plant. The pilot test delivers the necessary information about energy consumption, required size of the full-scale VacuDry unit, quality of the treated materials, etc. Also, it becomes more and more important to understand what to do with the recovered contaminants. For most people mercury is a toxic pollutant. For us, after an appropriate soil treatment, it is a valuable resource!

Is econ industries currently involved in a larger-scale project in Australia?

Our first installation for the treatment of hydrocarbon-based waste is already on its way and will be put in operation in early 2014 in Victoria. This means that our VacuDry®-Systems already have the green

light from the EPA in Victoria. In addition, we have a couple of on-site remediation projects where we are able to offer our solutions. These projects are dealing with various kinds of contaminations, especially with mercury, and they are in their first stage of technical evaluation. We have to accept that we are new in Australia: our local clients and authorities throughout the country have to evaluate our pioneering technology thoroughly and compare it with their earlier solutions. Therefore we need to be patient in our remediation projects.

What distinguishes econ industries' contaminated soil treatment from conventional hazardous waste solutions?

At econ we focus on a maximum recovery of resources with a minimum environmental impact. Our vacuum desorbers are working with relatively low temperatures, combined with the low vacuum and guarantee the lowest possible energy demand. Compared to conventional thermal treatment methods, we only use about 10 to 20 percent of their usual energy consumption. Vacuum drying technologies have been used for almost one century mainly in the chemical and pharmaceutical industry. It is safe, cost-efficient and easy to adapt to new challenges for hazardous waste and soil treatments.

Where was your VacuDry technology first applied? Can you provide any other success stories?

The first VacuDry plant was installed in eastern Germany to treat N.O.R.M. wastes with high mercury concentrations. econ industries is known as the leading supplier of vacuum thermal desorption units in the environmental sector. We install about 3 custom made plants per year in different countries with different input materials and applications, e.g. for refinery waste, oil sludge, contaminated soils, brownfield remediation, recycling of fluorescent lamps powder, mill scale, grinding swarf and many more. Our latest development is to use VacuDry technology to treat sludge from the stainless steel industry and therefore substitute the import of Fluorspar from China and Brazil to Europe. This project is founded by the EU.

In Australia your business is represented through the German-Australian Chamber. Can you briefly outline how that assists you in entering the Australian market?

For us this cooperation provides the fastest way to understand our local market opportunities in Australia. The fact that our technical solutions need to be explained, as



well as country-specific characteristics, time differences and distance make it difficult for us to establish a first personal contact to potential clients, partners and authorities. Furthermore, the German-Australian Chamber helps us with all organisational issues, now and in the future, incl. visa issues for our engineers who will stay in the country for a long time.

How important are relationships with regulatory bodies to your business? Have you been able to build partnerships with Australian departments?

A good relationship with the regulatory bodies, especially the EPA's, is extremely important on two counts: Firstly we simply need their technical approval for our scope of supply. Secondly we want to establish a continuous development of new projects: old-fashioned ways of dealing with industrial hazardous waste need to be substituted by innovative technologies.

Do you invest much in R & D to discover innovations that may dominate your sector in the future?

R&D is an essential part of our work. Currently we are working on new ways to make the VacuDry process even more sustainable. We work with different energy sources and we try to maximise the recovery of resources. Almost every day we work on the adaption of the VacuDry system to new waste fractions: e.g. last month we detected that even the recovery of 99% pure sulphur from sulphur contaminated waste streams is possible!



Business Representation at the GAC: Key advantages

Strong presence in the Australian market
The GAC's business representation (Geschäftspräsenz) allows you to establish your presence in the Australian market. You get your own business address in Sydney or Melbourne, phone number and email address. After an initial instruction, two GAC consultants become the primary point of contact for you and your customers.

Minimise your financial risk
The business representation allows you to enter the Australian market without making a huge financial commitment: there is no need to hire employees, lease office space, or establish a subsidiary.

New sales opportunities
As the official representative of your company in Australia we can acquire new customers on your behalf, support your trade fair organisation, and assist with custom enquiries.

Chamber network
Being part of our network of 360 corporate members in Germany and Australia, you can establish contact with new business partners 'down under' and take advantage of the expertise of our members.

Contact: Jan Brenneke, Consultant,
on 02 8296 0443 or
jan.brenneke@germany.org.au.