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KOMPOGAS

I've got a tomato in my tank

Some people put a tiger in their tank. Walter Schmid, 58, a former racing driver and entrepreneur in Glattbrugg puts a tomato in his: he fuels his car with biogas produced from organic waste.

In March 2003 in Austria, when Michael Gorbachev presented him with the silver *Global Energy Award*, he was clear about one thing: "This is the best prize going in the environmental sector!" Walter Schmid, 58, founder and president of Glattbrugg's Kompogas AG, had been nominated for the "renewable energy Oscars", a veritable elevation to the energy hall of fame! 1300 projects from 98 countries were nominated in the worldwide competition.

The beginnings. The building contractor did not envisage such dizzy heights at an early age, though he always wanted to do more than just build things. So in the eighties, Schmid took up renewable energy, built solar collectors and ground heat collectors, electric cars and low-energy houses, installed wood, single-gas and atmospheric heat pump heating systems, geothermal and photovoltaic systems.

Then he came to biogas. "I was always fascinated by the idea that you could travel a kilometre on a kilo of rotten tomatoes," laughs Schmid, who was European autocross champion six years ago ("my dream: that Schumacher will also drive on biogas!"). He studied scientific literature and built a small test installation on his balcony, powered by chicken droppings, sewage sludge and kitchen waste. "One day it all exploded. What a mess! But I just knew there was something in it!"

In 1989 he founded Kompogas AG Glattbrugg. Today it has some 45 employees. The Confeder-

ation and the canton of Zurich supported the development of the first system, which went into operation in 1992 in Rümlang. "We were the first to process biogas into a vehicle fuel," he recalls. Today his company's gas-powered cars travel around with an advertisement on them: "Your kitchen waste is my fuel".

The system. Kompogas gets its bio-waste from green waste disposal – mainly from municipalities and wholesale distributors. In the reception bunker, foreign matter is removed, shredded and fed into the fermentation reactor, where within two weeks micro-organisms decompose the bio-waste at 55 to 60°C, in the absence of oxygen, to produce biogas and compost.

Some of the biogas drives a combined heat and power plant which generates power via a generator, and heat. The remainder is fed into the natural gas network or to the Kompogas filling stations. The sterile (weed-free) compost returns to the ecological cycle as fresh compost and liquid fertiliser.

"I pinched the idea from the horse: it eats grass in front and leaves behind manure, from which grass grows again"; this is how Schmid summarises his process. The key innovation is that he obtains energy from organic waste instead of destroying it: "Composting alone consumes energy; and incineration or tipping have environmental impacts". The Kompogas process is CO₂-neutral: a biogas car emits only as much CO₂ as the plants have extracted from the air.

From each garbage truck, Schmid obtains the equivalent of 600 litres of petrol, and the price of his tax-exempt fuel is about 30% lower. If all of Switzerland's organic waste was fermented in biogas systems, some nine percent of car

traffic could be replaced by gas-powered vehicles.

Already about 750 cars and trucks are filling up at gas filling stations. When cars travel beyond this network, they can switch to petrol. Citroën, Fiat, Ford, Opel and Volvo currently offer climate-friendly hybrid vehicles.

Success. Schmid's main concern is for the raw material: compostable waste collection is not yet common everywhere: "There is massive energy potential: more than a third of all household waste is organic material!" Kompogas currently records a 20% increase in material. Kompogas marketing manager Daniel Würzler: "Many branches of industry, such as large bakeries or breweries, are looking for more environmental methods".

At present, 21 plants are in operation – 7 in Switzerland, 11 in Germany, 1 in Austria and 2 in Kyoto (Japan), a potent symbol. Six more are planned: 4 in Switzerland, and one each in Passau, Rioja and on the island of Martinique. Licensees cushion Schmid's risk. Würzler says: "Our company is the proof: protecting the environment creates jobs, it can make money, and it doesn't have to be expensive!"

Schmid's balcony explosion has led to several awards: apart from the *Global Energy Award*, in 2003 Kompogas was also awarded the Swiss and European Solar Prize. "This is important for us," says Schmid. "Conservative municipalities are more eager to work with us when they hear we have received an international award!"



Walter Schmid tanks up his car at a Kompogas filling station.



Schmid inspires visitors to an information centre with enthusiasm for his concept.