

Design Of Zero-Carbon City

Engineers in Abu Dhabi are preparing to test solar collectors, scheduled to power a futuristic 100,000-resident city. Their first goal is to create the world's first metropolis that emits no carbon. The emirate is investing billions into renewable and sustainable energy technologies, stimulating precisely those industries that ultimately could challenge oil's dominance, the major resource of the region. The engineer's efforts will draw on traditional Arabic architecture, using wind towers to funnel air through the city as natural air-conditioning and splashing fountains in courtyards to dampen the dry heat. The buildings will be huddled together on narrow streets to reduce demand for cooling power during sweltering summer days. But the city will also incorporate the most advanced technology available for refrigeration and other systems. "We will need the most extreme energy-efficiency standards from the beginning," says chief executive of the government-funded organisation leading the initiative Sultan Al Jaber. City officials are also close to signing a US\$500 million deal to manufacture thin-film solar panels, which they say are cheaper than traditional models. Twin plants will be built in Germany and Abu Dhabi. These will be the first of about US\$2 billion in light manufacturing projects the city is considering. Providing the 200 MW of solar power needed for the new city will cost around US\$1 billion. "A lot of lessons will be learned" from the effort to build a zero-carbon city, says consulting firm Clean Edges.

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