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Shell And AMG Planning Clean Tech Project With Chinese Oil Giant Shandong

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AMG's Cambridge Ohio Plant AMG NV

China wants to say good-bye to smoggy cities and toxic waste. And it seems to mean business this time, as they are bringing in western energy experts to help make sure they achieve it.

Amsterdam-listed AMG announced Monday that its joint venture Shell & AMG Recycling BV (a joint venture between Royal Dutch Shell and AMG NV) **had signed** a memorandum of understanding (MOU) with Shandong

Yulong Petrochemical Co, to look into developing a plant to reclaim valuable metals from spent refinery catalysts.

Shell & AMG Recycling was designed to globalize the leading clean recycling technology of AMG in Ohio and is now operating worldwide.

AMG, a leading critical materials and technology company with 3,100 employees, already operates such a plant in Ohio. The one that planned for China would be similar.

“We are very pleased that we have now commenced another big project following the signing of the first spent catalysts recycling joint venture with the Kingdom of Saudi Arabia a few months ago, says Heinz Schimmelbusch, founder and CEO of AMG and a pioneer in the materials technology business for more than 40 years.

Western Clean Tech Headed to China

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"We'll build exactly what we have in Ohio," says Steve Hanke, chair of AMG's supervisory board, and a former professor at the Colorado School of Mines, [currently ranked the number one school of its kind in the world](#).

The JV announcement comes just weeks after Shandong [announced](#) it intends to build the largest, most modern oil refinery in the world with a capacity to process 400,000 barrels of oil a day. The refinery is set to be built by 2024, and will need help disposing of lots of spent catalysts laden with toxic chemicals and valuable materials.

"Spent catalysts are toxic, but if you refine them you can get useable safe, clean products," Hanke says.

That's where Shell and AMG come into the picture. When the refinery gets built along with the recycling facility, then Shell would provide the fresh catalysts to Shandong, and then AMG would take away the spent ones and reclaim the valuable metals.

Powering the Green Revolution with Vanadium

Some of these reclaimed materials are vital to the green revolution. Notably the rare metal vanadium is used in making solar and wind energy more economically efficient, and it also helps reduce the volume of steel used in construction projects.

Vanadium gets used in batteries that store electricity. Without such battery-based storage technology, intermittent the wind and solar power is less efficient. Or in other words, if you need electricity during the night time, then without batteries solar power is useless.

"With efficient vanadium batteries you can store the energy for when demand is high, but the sun isn't out, or the wind isn't blowing," Hanke says.

Vanadium is also added to steel to make it stronger, more flexible, and resilient. In short, less steel can get used in construction so helping reduce overall emissions in the steel making process.

Other metals that get extracted from spent catalysts include nickel and molybdenum, both of which are used to make steel alloys.

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