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Waste-to-Energy: Global Growth, Market Downturn in China

The global stock of Waste-to-Energy plants continues to grow. While the market downturn in China is putting pressure on the domestic industry, project activity in Central and South-East Asia is increasing. In Europe, modernisation projects are increasingly coming into focus, alongside the expansion of plant capacity in Southern and Eastern Europe. These are key findings of an updated market study by ecoprolog.

The number of plants for the thermal treatment of non-recyclable waste (Waste-to-Energy, WtE) continued to rise in 2025. By the end of 2025, more than 3,100 thermal waste treatment plants were in operation worldwide, with a combined capacity of over 640 million tonnes per year. Compared with the previous year, this represents a net increase of around 16 million tonnes per year. In total, new capacities amounting to approximately 18 million tonnes per year were commissioned, while just under 2 million tonnes per year were decommissioned.

With more than 12 million tonnes per year, the largest increase once again occurred in China. However, this figure should not obscure the fact that the market downturn in China is continuing. In the record year of 2021, 190 plants with a combined capacity of around 64 million tonnes per year were commissioned there. In the meantime, WtE capacities in most major cities along the densely populated eastern seaboard are sufficient or even oversized. As a result of economic difficulties and the expansion of recycling, many plant operators are now struggling to secure sufficient volumes of waste. For competitors in China, this presents a double challenge: most of the major players are both plant constructors and operators. As constructors, they lack new projects; as operators, they lack available waste.

From a global market perspective, however, China is a special case – albeit a significant one. Outside China, the Asian market is gaining increasing momentum, particularly in countries such as Indonesia, Thailand and the Philippines. The number of projects is also growing in Central Asia, for example in Uzbekistan.

The main driver behind this development is the worsening waste management situation. In some countries, including Indonesia, years of efforts to build institutions and develop waste management plans are now bearing fruit. Last but not least, the development of several WtE markets is also attributable to the aggressive market expansion strategies of Chinese developers seeking to open up new sales markets.

The number of plants in Europe is also continuing to grow, albeit by only around 300,000 tonnes per year in 2025. Newly commissioned capacity of 1.2 million tonnes per year was offset by the decommissioning of almost 900,000 tonnes per year. This shows that in Europe, the replacement and modernisation of existing plants have now become more important than new-build business.

However, 2025 was an exceptional year in this respect; in the coming years, ecoprolog expects an increase in new-build projects again, particularly in Southern and Eastern Europe. WtE capacity is still required there in order to implement adopted EU legislation and to reduce the share of waste sent to landfill.

At the same time, the current phase of modernisation in countries such as Germany is only just beginning, while in France this process is already at a more advanced stage. In the coming years,

ecoprogram expects the commissioning of new and modernised combustion lines with a capacity of between two and four million tonnes per year.

The study *Waste to Energy* is the leading reference work in the WtE sector. It includes a country-specific forecast of global market developments through to 2034. Further information on the newly published edition *Waste to Energy 2025/2026* is available at www.ecoprogram.com.

ecoprogram is a consulting firm specialising in environmental and energy technology. The company has been active in these markets for more than 20 years as a market consultant and is an established industry insider. Typical areas of activity include market and competitive analyses, commercial due diligence, feasibility studies and material flow analyses.

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