

## **CO-PROCESSING SUCCESS STORY**

### **AUSTRIA – HOLCIM**

#### **100% co-processing rate and 30% raw material recycling**

Location: Retznei cement plant, South Styria, Austria

Partners: ThermoTeam, Recycling Centre Retznei

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**Summary:** Holcim's Retznei cement plant in South Styria, Austria stands as an exemplar in sustainable practices within the industry. With roots deeply embedded in the region, the facility has achieved a **100% co-processing rate**, primarily due to its joint venture, ThermoTeam, which produces 100,000 tons of refuse derived fuel (RDF) annually. Collaborations with sectors such as pulp & paper and pharma have been pivotal in keeping waste streams circular. Further sustainability is evidenced as 38% of the plant's fuel mix is biogenic and up to **30% of its raw materials stem from recycled products**. Additionally, the plant's Recycling Center Retznei offers tailored preprocessing equipment, allowing the facility to repurpose construction demolition waste and other by-products. In terms of community outreach, a heat recovery installation reuses excess **heat from clinker production to warm local homes and buildings**, while solar installations meet 10% of peak energy consumption. Future prospects for the plant include innovations in sustainable construction materials and advanced plastic recycling, alongside efforts to reduce transportation emissions through collaboration with the Austrian rail infrastructure company, ÖBB.



### **Description: Retznei 100/30 – the sustainable cement plant**

The cement plant in Retznei is located in „South Styria”, an Austrian recreation area most famous for its untouched nature, wellness and wine yards. Committed to its long-standing roots in the region and its visionary engagement for a circular economy, Holcim’s cement plant plays a vital role in the economic and environmental systems in the region. The integrated concept of sustainable innovation along the value chain was key for continuing the business in this area over the decades.

### **Joint venture ThermoTeam for production of refuse derived fuel**

Retznei is a frontrunner in the circular economy: As early as 2003, the local cement plant established a joint venture to produce refuse derived fuel (RDF) preprocessing plant. The so-called “ThermoTeam”, Holcim’s joint venture company with the local waste management company Saubermacher, has been the core of the waste management plan of the region since its beginning, running 100.000 tons of RDF per year. Additionally, industrial partnerships with the pulp and paper Industry, the pharma industry together with plastic recycling enable keeping waste streams in a circular loop.



## **100 % thermal substitution rate**

Summing up all the different waste streams, the plant team manages to run the cement plant on a 100 % thermal substitution rate (TSR). The RDF for the main burner and the calciner, which are pre-processed in ThermoTeam, cover the main part of the fuel. Additionally, alternative fuels such as solvents, oil emulsions, dried sewage sludge, recycling reject from plastic and paper recycling and as well biomass, for example waste wood and agricultural waste, are co-processed. On average, 38 % of the fuel mix is biogenic fuel.

## **Up to 30 % of raw materials are substituted with recycling products**

Collaborating with the construction and steel industries, the plant offers circularity services in the local joint venture “Recycling Center Retznei” (RCR). The recycling platform for mineral waste is located in the exploited part of the cement plant’s quarry and offers recycling solutions for various waste streams. Using customized preprocessing equipment, RCR prepares alternative raw materials like construction demolition waste (CDW), slags, and ashes for further use in cement plants and iron scrap from steel production. This ideal pretreatment allows the Retznei cement plant to substitute up to 30 % of its natural raw material with recycling products. CDW represents approximately 8 % of the used raw material.

## **Excess heat of clinker production serves the community**

In cooperation with the local district heating company, the plant has invested in a heat recovery installation, using excess heat from clinker production to heat local private homes, public buildings, and a big hotel and SPA nearby. To provide green energy for clinker production, a 1 MWp solar energy plant was installed in the cement plant and a 0,5 MWp on the roof of ThermoTeam, covering 10 % of the plant's peak energy consumption.

## **Future focus on expanding recycling capacities and innovation**

Mr. Haimo Primas, plant manager of Holcim cement plant Retznei, expresses: *“In operating our sustainable cement plant, we rely on the know-how and flexibility of each individual employee for constant adjustments of the processes. The acceptance from our neighbours and the trust of our partners is essential in all transformation initiatives. We intend to expand our recycling capacities with innovations for sustainable construction materials and value-added plastic recycling. The key future challenge will be managing all the in- and outbound flow of different materials. Limiting the impact on our stakeholders and further reducing Scope 3 emissions will in future be realized through a new logistic approach. We are currently performing trials with different rail systems, planning to invest in new rail infrastructure with the Austrian rail infrastructure company ÖBB.”*

Mr. Christian Lampl, Geocycle Manager and Managing Director of RCR and ThermoTeam, adds: *“The close cooperation with the cement plant allows us to adjust the pretreatment of our input waste on a daily basis to meet the cement plant’s requirements.”*

Read more about Geocycle circular activities [HERE](#)

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