**Benninghoven │ First example of almost CO₂-neutral asphalt production in Germany**

**Innovation for a whole sector: Wood dust burner instead of heating oil as fuel**

**The operator of an asphalt mixing plant in Aichach, Bavaria, wanted the plant to run exclusively on renewable energy and produce product that is as CO₂-neutral as possible. Asphalt mixing plant manufacturer Benninghoven was brought in to put the plan for green asphalt into action. Asphalt is now produced with a wood dust burner instead of heating oil as fuel.**

**Wood dust as an energy source**

The asphalt mixing plant in Aichach used around 600,000 l of heating oil to produce approx. 60,000 t of asphalt per year. That meant emissions of 1,800 t of CO₂. As an expert for multi fuel burners, Benninghoven recognized the great future potential of wood dust as a fuel early on. The processing technology required for producing high quality wood dust was provided by a specialist company.

The endeavor was designed to be a research and development project from the outset. First of all, grant applications and expert’s reports for fire safety, noise and emissions had to be obtained from the operator of the plant. This was followed by a long approval process as the authorities had no figures from previous experience to work with.

Various requirements specified by the district administration had to be complied with, including continuous emissions measuring and the burner capacity. Taking into account the plant output, Benninghoven restricted the burner output to 12 MW/h. In the event of a future expansion of the plant, the burner has enough reserves to expand as well.

**20% cost savings and compliance with TA-Luft regulations**

All requirements centered around complying with the German TA-Luft regulations, which came into force in 2021. Only 4 weeks after installation of the burner, the Benninghoven development engineers were able to achieve levels that were actually 50 % below the requirements of the TA-Luft in continuous emissions measurements. Measurements carried out by the TÜV inspection association confirmed these values, so that Benninghoven is the only manufacturer who meets and can therefore guarantee the limits for the plant with a wood dust burner. For Christian Schweiger, the contractor and operator of the mixing plant in Aichach, the investment has been worthwhile – including financially, as the carbon tax on fossil fuels has increased significantly. “At the start of the project, we thought that sustainability will be an asset in the future. The fact that we are already saving around 20 % of the costs by switching over to wood dust was a pleasant surprise.”

**The EVO JET: The core**

By adding wood dust to the EVO JET multi-fuel burner as another energy source, Benninghoven has opened up this sustainable fuel for use in asphalt mixing plants. Wood pellets, wood chips or wood dust are the raw materials, which have to be ground down to a defined particle size to ensure efficient heating. The wood dust is fed into the burner with precision dosing by the supply fan and the dosing unit.

**Retrofit pays off**

Since the switch to wood dust as energy source, continuous emission measurements during operation show that the plant in Aichach is consistently running below the TA-Luft limits.

Benninghoven supplies the EVO JET multi-fuel burner both as a solution with wood dust and with other energy sources as a Retrofit solution. A burner can be replaced in a little as a week. The economic and ecological optimization of existing plants even makes it possible for owners of older asphalt mixing plants to take this important step to ensuring their competitiveness and future viability. A new Benninghoven burner can use up to four fuels at the same time. The energy source can be changed on the fly at the press of a button without the burner having to be shut down or restarted for the fuel change.

**Photos:**



**BE\_photo\_AIR0381\_PR**

At the asphalt mixing plant in Aichach, the Benninghoven EVO jet multi fuel burner is used to burn wood dust instead of heating oil.



**BE\_photo\_BIG5715\_PR**

By switching to wood dust, the operator can produce asphalt that is almost CO₂-neutral, and save 20% on costs at the same time.

  
**BE\_photo\_BIG5736\_PR**

The EVO JET 3 multi fuel burner from Benninghoven is the core of the asphalt mixing plant in Aichach.

*Note: These are preview photos only. For printing photos in the publications, please use the photos with a resolution of 300 dpi provided in the attached download.*

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