

Sustainability Solutions for Dryers.

Innovations for a better world.

BUHLER

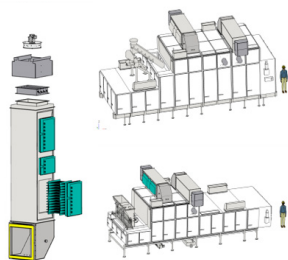
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Built in sustainability for new and existing dryers.

Products that support your sustainability initiatives.

As the world's leading provider of thermal process technologies, we believe we have a responsibility – and an opportunity – to make an impact on our customers' sustainability initiatives. Drying is a resource intensive process, but it provides the opportunity for us to develop tailored solutions that will help reduce CO₂e emissions, greenhouse gases, energy costs, and waste. And knowing that each process is unique, we work with a toolbox of proven technologies to arrive at solutions that are designed to fit your specific application.

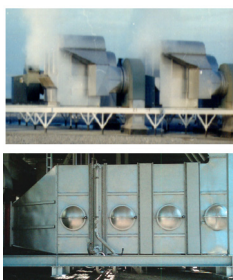
Electrification and alternative fuels



Replacing burners or fluid-heated coils with electric heaters enables **full decarbonization**, meaning no emissions from the dryer at all, as well as increased safety and hygiene.

Alternative fuels such as thermal fluids, biomass steam, e-steam, and even H₂ can take advantage of existing utility infrastructure and even reduce existing utility complexity.

Heat recovery



Installing a heat recovery system provides the ability to use already heated exhaust air to preheat the inlet air on make up air side. This results in using **20% less energy**.

The use of air to air and fluid loop heat exchangers on our conveyor dryers is a proven energy saving technology in a wide range of applications.

Heat pumps



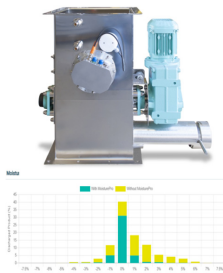
Using a heat pump and coil loop to preheat make up air, along with pulling waste heat from the dryer exhaust, can provide **energy savings of up to 30%**, and increase decarbonization by reducing dependency on other fuels.

Services for sustainability.

Ongoing services to maximize your efforts.

Looking to improve your organization's ecological footprint? Your success is our goal. To help do that, we can provide a range of services that can determine which solutions are the best fit, as well as monitor your efforts to ensure your investments are performing the way they should and hitting your targets.

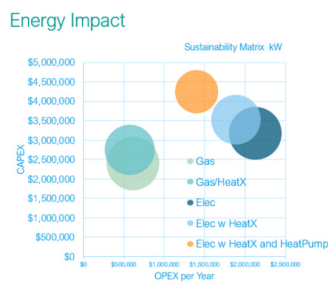
Digital services



Bühler Insights is our central platform for connected products and services, optimizing your plant's efficiency by reducing energy consumption and waste.

As an example, our DryingPro is an intelligent moisture controller that can bring an **immediate 20% energy reduction** to your thermal process.

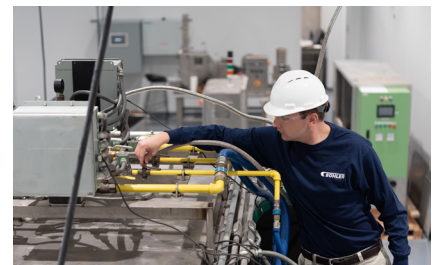
Analysis/ROI/Option Matrix



Understanding the options available for improving sustainability is critical. Our process experts will work with you to provide an analysis of your needs and data around Capex, Opex, ROI and CO₂e quantification so that you can make an informed choice on how to proceed.

This analysis and option matrix is based on your specific conditions, local energy costs, and availability of alternative energy sources.

Energy and CO₂e audits, and dryer evaluations



Our process experts will visit your plant and perform an audit on your dryer, providing you with data on your current energy usage and recommendations for improvements, such as options for optimization or heat conversions.

In addition, a process evaluation can be performed on the dryer to be sure that the most optimal process parameters are being utilized, or point out opportunities for upgrades or improvements.

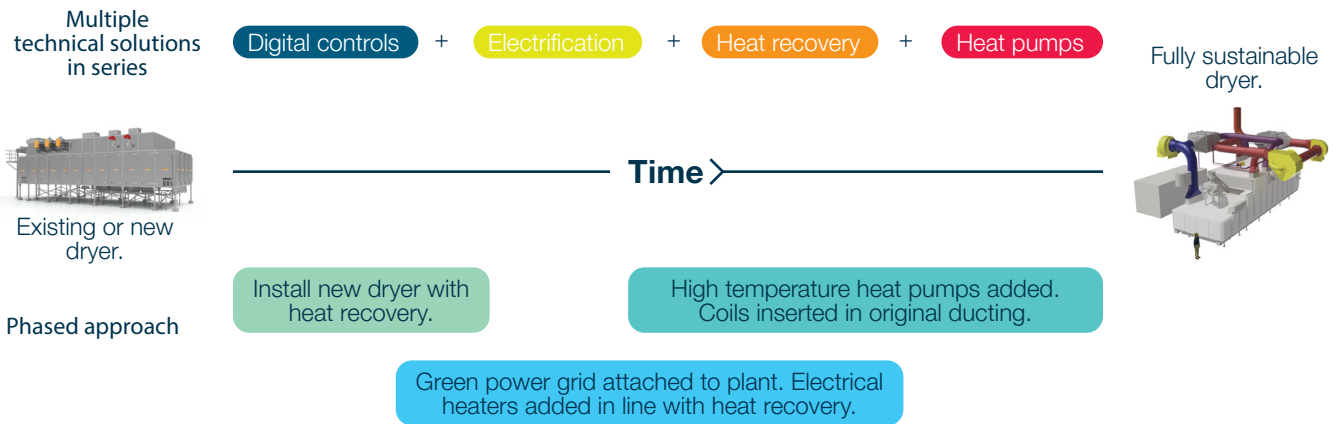
Implementation.

Making it happen on new or existing dryers.

Plans to fit your production process.

Your production process is our priority. Whether you are installing a new dryer that already features the latest technologies, or you have an existing dryer that you would like to upgrade, our energy solutions are flexible when it comes to installation. Solutions can be implemented at your pace, be it all at once, or in a phased approach. Even if external factors, such as current grid capacities and infrastructure limitations, prevent you from initiating any step in the process, we'll work with you to get you set up and ready when those challenges have been addressed. And you can take advantage of the multiplied benefits when you implement multiple solutions that work in series. In other words, using heat recovery and heat pumps, along with electric heat and alternative fuels in a single application, can provide multiples in the benefits of each.

Implementation options to suit your needs.

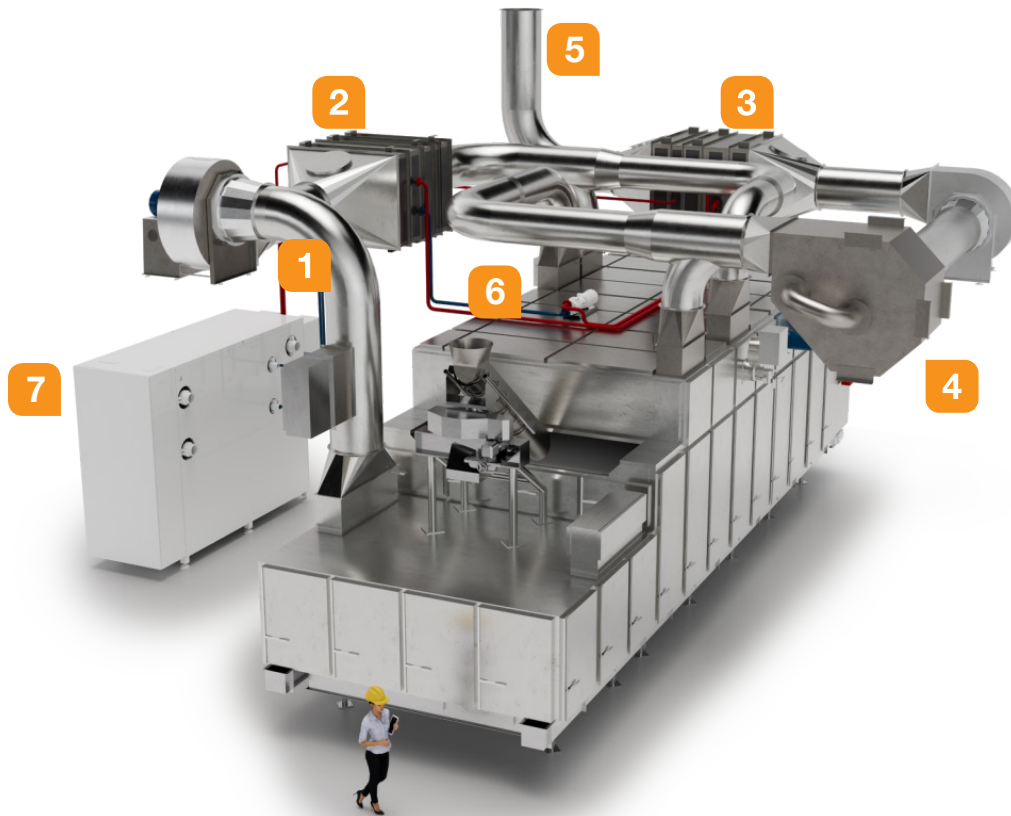


The fully sustainable conveyor dryer. The final vision.

Delivering performance and sustainability.

Whether utilizing heat recovery, heat pumps, heat exchangers, cascading air, electric heat technologies, alternative fuels, or any combination, the fully sustainable conveyor dryer delivers superior results in production, reduced energy consumption, and emissions.

Contact our team of sustainability experts today at info.dryingsolutions@buhlergroup.com to schedule your assessment and get started on a plan to improve the performance and sustainability of your conveyor dryer.



1 Pre-heated make-up air from cooling zone

2 Inlet air heat exchangers

3 Exhaust heat exchangers

4 Fines separator

5 Exhaust system

6 Thermal fluid loop direct heat recovery

7 Heat pump



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