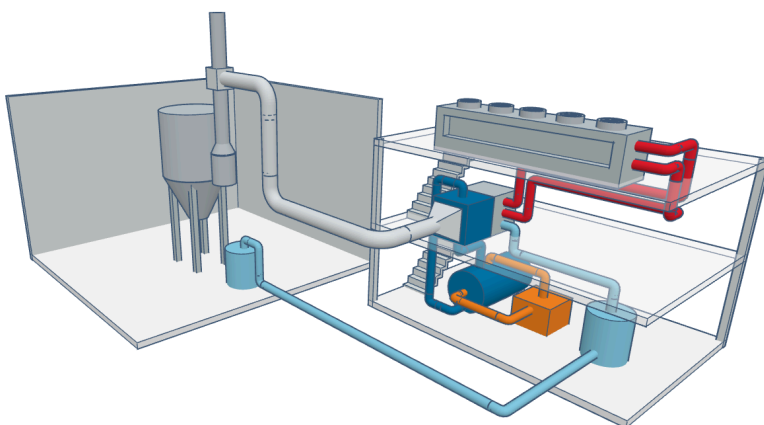
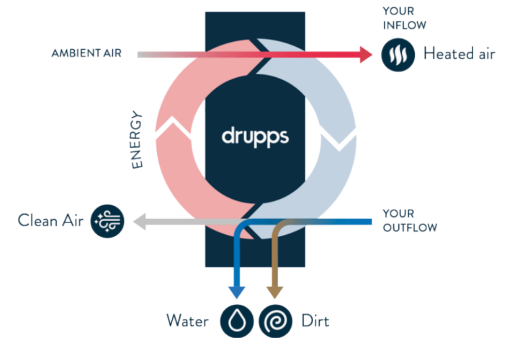


# Drupps Vapor Energy

## Water and heat recovery from dirty airstreams

Drupps Vapor Energy is optimized for energy recovery from wet but dirty industry outlets comprising Vapor's unique zero-water scrubbing technology that requires a bare minimum of added water. Water is generated from the outflow through heat-exchanging with incoming ambient air.



### What it looks like

Drupps Vapor Water is fitted to connect with the exit air duct of a spray dryer. The airflow passes through a wet scrubber (blue module) effectively cleaning the airflow from airborne particles such as fine clay dust. In the next step, water is condensed by heat exchanging (grey module) and collected (light blue module). Heat is released via dry coolers.



## Use Case

# Energy recovery for pet food producer

### Need

A pet food producer in need of increased energy efficiency on site.

### Conditions

High content of fine dust particles in the exit airflow coming from spray dryers, preventing the use of air-cooled condensers.

### Solution

Cleaning of the exit airflow by wet scrubbing with zero water loss in combination with heat exchanging with incoming ambient air going to the spray dryer.

### Setup

Drupps Vapor Energy is connected to the exit air ventilation duct and incoming air duct, respectively. The exit airflow is cleaned from particles through zero-water-loss wet scrubbing before heat-exchanging with an incoming ambient airflow, condensing water from the exit airflow while pre-heating the incoming airflow going to the spray dryer.

Vapor Energy	Output	Net Value
Water Generated	5,800 m <sup>3</sup> /yr	14,000 €/yr
Thermal Power Recycled	13,800 MWh/yr	1,107,000 €/yr
CO <sub>2</sub> Reduction	2,561 ton/yr	205,000 €/yr
Electricity Consumed	-944 MWh/yr	-104,000 €/yr
Airborne Dirt Removed	< 19,500 kg/yr	195,000 €/yr
<b>Total</b>		<b>1,417,000 €/yr</b>

Air Flowrate 100,000 m<sup>3</sup>/h / Dryer Outlet Air Temperature 100 °C /  
 Dryer Outlet Air Water Content 0.18 kg/kg / Ambient Air 20 °C/60% / Operating Time 6,500 h/yr  
 Water 2.5 €/m<sup>3</sup> / Natural Gas 80 €/MWh / CO<sub>2</sub> 80 €/ton / Electricity 0.11 €/kWh  
 Value of cleaning air: 10€ / kg dirt removed

## How could Drupps Vapor be applied to your operation?

Every case is unique. Connect with us for a discussion on how Drupps Vapor could be adapted to your operations, and what it would look like.