



PureDae

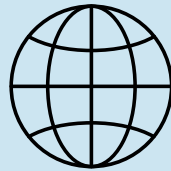
Informative Booklet

AN INNOVATIVE APPROACH TO AIR FILTRATION

FOR MORE INFORMATION



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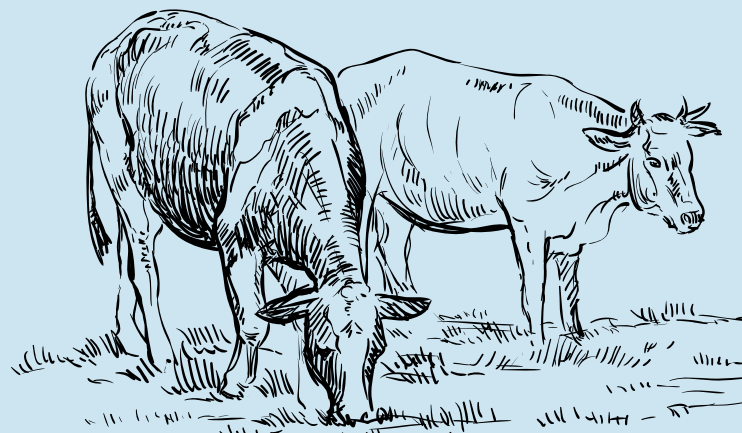


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Climate Change: An Introduction

CLIMATE CHANGE REFERS TO SIGNIFICANT, LONG-TERM ALTERATIONS IN THE AVERAGE WEATHER PATTERNS OF THE EARTH, TYPICALLY OVER DECADES OR LONGER. IT ENCOMPASSES CHANGES IN TEMPERATURE, PRECIPITATION, WIND PATTERNS, AND OTHER ELEMENTS OF THE EARTH'S CLIMATE SYSTEM.

Causes of Modern Climate Change:

Greenhouse Gas Emissions: The burning of fossil fuels (coal, oil, natural gas) releases carbon dioxide (CO₂), methane (CH₄), and other greenhouse gases into the atmosphere. These gases trap heat, leading to the "greenhouse effect."

Deforestation: Cutting down forests reduces the planet's capacity to absorb CO₂, exacerbating atmospheric warming.

Agriculture and Livestock: Activities like rice cultivation and livestock farming emit methane and nitrous oxide, potent greenhouse gases.

Industrial Processes: Factories and other industrial activities contribute to greenhouse gas emissions.

Effects of Climate Change:

Rising Temperatures: Global average temperatures are increasing, leading to heatwaves and altered ecosystems.

Melting Ice and Rising Seas: Polar ice caps and glaciers are melting, causing sea levels to rise and threatening coastal communities.

Extreme Weather Events: Hurricanes, droughts, and floods are becoming more intense and frequent.

Ecosystem Disruptions: Many species are struggling to adapt to changing habitats and temperatures, leading to biodiversity loss.

Human Health Risks: Heatwaves, air quality deterioration, and the spread of diseases are direct health impacts.

Live Stock Emissions from Barns

AN INNOVATIVE AIR FILTRATOR

01
NH₃

Ammonia (NH₃) is a gaseous compound primarily produced by agricultural activities, mainly by handling animal manure and using synthetic fertilizers. It is released into the atmosphere when nitrogen-based fertilizers break down in the soil or animal waste decomposes in livestock operations.

02
CO₂

Carbon dioxide (CO₂) is a significant greenhouse gas that contributes to climate change, and approximately 20% of emissions are made by barns. It traps heat, leading to global temperature rise, extreme weather. CO₂ also impacts human health by increasing respiratory illnesses. Reducing CO₂ emissions is crucial for addressing these issues.

03
CH₄

Methane (CH₄) is a potent greenhouse gas that significantly contributes to climate change through both natural and human activities. Livestock farming is the largest source of methane emissions, accounting for 30% of the total emissions. Although less abundant than carbon dioxide, methane is more effective at trapping heat—about 84 times more potent over 20 years. This makes rising methane levels particularly concerning for global warming and its acceleration.

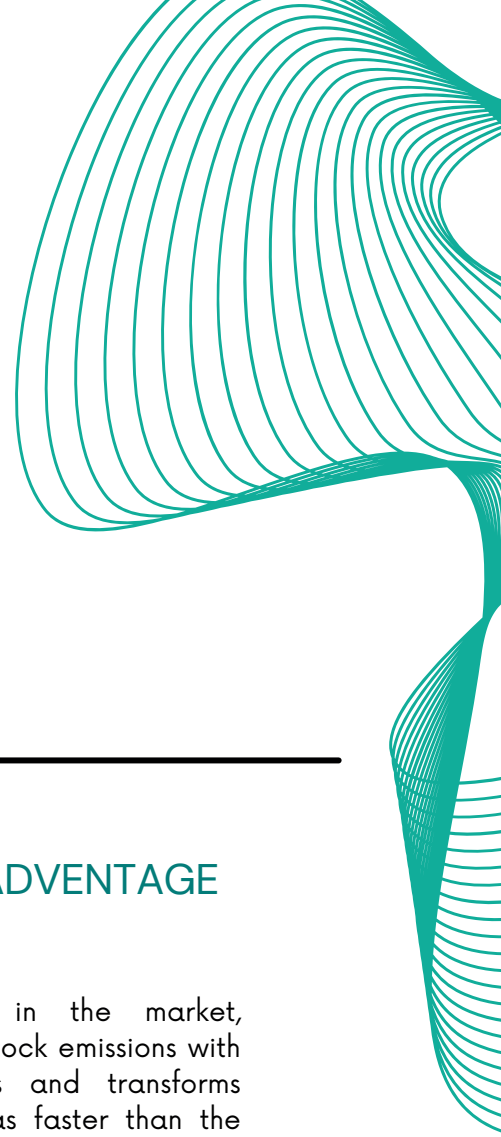
04
Bacteria

Airborne bacteria are tiny microorganisms that can travel through the air and pose risks to human health and the environment. They often originate from animal waste, soil, and human activity. In agricultural settings, activities like handling manure and moving livestock can release these bacteria into the air, allowing them to spread over long distances to nearby communities and natural areas.

05
VOCs

Volatile Organic Compounds (VOCs) are a group of organic chemicals that quickly evaporate into the air at room temperature. They are emitted from various sources, including industrial processes, vehicle exhaust, paints, cleaning products, and agricultural chemicals. In agricultural settings, VOCs are also released from fertilizers, pesticides, and the decomposition of organic matter like manure.

PureDae: An Innovative Air Filtration Unit



OVERVIEW OF PUREDAE & ITS SUSTAINABLE ADVENTAGE

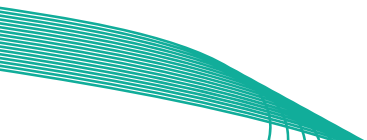
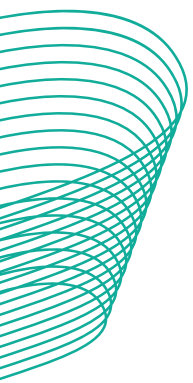
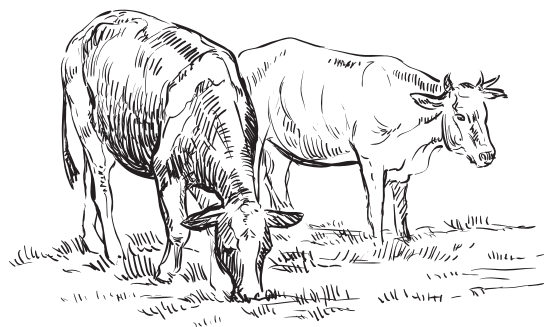
Approximately 30% of methane emissions, a potent greenhouse gas, are induced by livestock; hence, barn owners pay additional taxes regarding these emissions. Moreover, inadequate sanitation and poor air filtration in barns create unhealthy conditions, resulting in the culling of animals.

Livestock industries mostly use manure collection methods, which can promote bacterial pathogenesis, as an alternative energy source (e.g., pit systems, biomass). Additionally, these industries often implement ventilation systems to circulate the air and prevent odors and bacterial growth.

PureDae, concerning climate change, is a filtration and storage system comprising filters, sensors, a compressor, and a fan, addressing barns' air contamination and correlated animal deaths. It filters livestock emissions and captures methane to liquefy as an alternative energy source.

Unlike opponents in the market, PureDae filters livestock emissions with multi-layered filters and transforms methane into biogas faster than the current products while taking up less space, providing a multifaceted approach that allows customers to be eligible for green-taxes.

Our customer audience comprises approximately 9 million barn owners subjected to high "burp taxes," which can reach €52,000 due to thick methane emissions in countries implementing these enforcements (e.g., New Zealand, Denmark, Canada, USA, Belgium, Australia).



Sensing & Controlling

PRESSURE PROBE

A pressure probe is a device used to measure pressure differences in gases or liquids, providing critical data for system monitoring and optimization. In filtration and environmental systems, pressure probes play a key role in ensuring operational efficiency and timely maintenance.



METHANE SENSOR

A methane sensor is a specialized device designed to detect and measure the concentration of methane (CH_4) gas in the air. Methane sensors play a critical role in monitoring emissions from sources such as agriculture, landfills, and industrial processes, contributing to safety and environmental management.



Filters

COARSE FILTER

The coarse filter captures large particles such as dust, straw, and debris. By preventing these from reaching downstream filters, it enhances their efficiency and lifespan while ensuring smooth and reliable system operation.

ACTIVE CARBON FILTER

The active carbon filter uses activated carbon to absorb gaseous pollutants like ammonia, methane, and VOCs. Its porous structure efficiently captures odors and harmful gases, improving air quality and supporting cleaner, healthier environments.

NH₃ FILTER

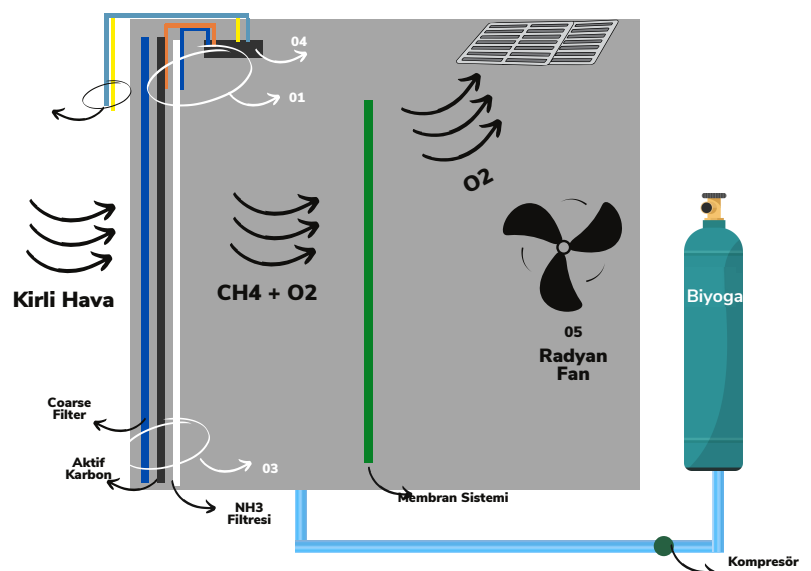
The NH₃ filter is specially engineered to target and capture ammonia (NH₃) emissions from the air. By employing advanced filtration materials, it efficiently absorbs ammonia gas, reducing its concentration and preventing its harmful effects on both human health and the environment. Ammonia is a major contributor to air pollution, causing respiratory issues, soil acidification, and ecosystem disruption. The NH₃ filter plays a crucial role in mitigating these negative impacts by removing ammonia before it can spread, ensuring cleaner air and supporting better air quality management in various industries and agricultural settings.

INNOVATIVE MEMBRANE TECHNOLOGY

Innovative membrane technology utilizes advanced filtration materials that selectively separate pollutants from air or water. Through a semi-permeable barrier, the technology allows only smaller molecules to pass while blocking larger contaminants. It effectively targets gases like methane and ammonia, offering an energy-efficient solution for air purification. Its precision and adaptability make it a valuable tool in reducing harmful emissions, improving air quality, and promoting environmental sustainability.

HEPA FILTER

The HEPA filter captures ultrafine particles as small as 0.3 micrometers with 99.95% efficiency. Its advanced design ensures minimal air resistance while effectively removing allergens, dust, and microscopic pollutants, delivering clean and breathable air.



Aim & Scope

PUREDAE

OUR VISION

Clean air is a fundamental human right, yet many face the effects of airborne pollution. Harmful pollutants like methane (CH₄), ammonia (NH₃), carbon dioxide (CO₂), and VOCs can have serious health impacts. At PureDae, we are dedicated to combating this issue through air filtration solutions that target these specific pollutants from livestock emissions. Our mission is to ensure clean and safe air for all, promote community awareness, and restore vital air-related ecosystems for a healthier and more sustainable world.

OUR MISSION

Clean air is a fundamental human right, yet many face the impacts of invisible pollution like CO₂, NH₃, CH₄, and microplastics. At PureDae, we are dedicated to combating this crisis in livestock environments by developing air filtration solutions that effectively remove these harmful pollutants. Our goal is to provide clean, safe air for all while raising community awareness. We envision a healthier, more sustainable world where the air is free from pollution and vital ecosystems are restored.

PUREDAAE

