

# Mycoremediation Solutions:

Revolutionary Fungal Technology for England's Water Crisis



mycene

**Meow-Ludo Meow-Meow & Krish Patel**

**Pilot Project Proposal:** Sustainable Wastewater Treatment using Nature's Most Powerful Decomposers

# England's Water Crisis: The Urgent Need

## Critical Statistics:

- **60%** increase in serious pollution incidents (2024)
- **2,801** total pollution incidents (highest on record)
- Only **14%** of rivers achieving “good” status
- **£24B** infrastructure investment needed (2025-2030)

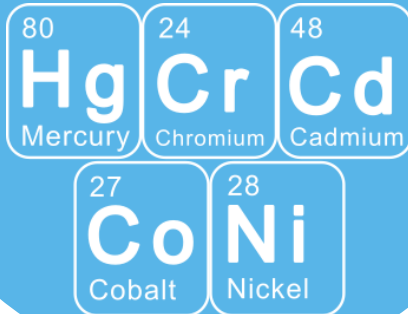
## Recent Developments (2025):

- Water (Special Measures) Act 2024
- Environment Agency: **“Intolerable pollution”**
- 15,000 marched on Parliament
- AMP8: £20B for wastewater networks

# The Science: Mycoremediation Technology

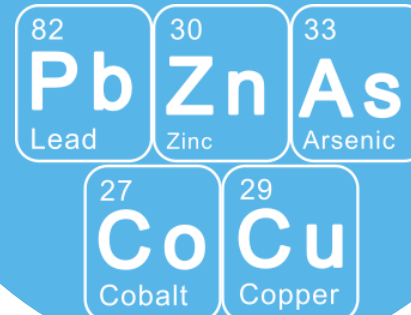
## Biosorption

Heavy Metals



## Bioaccumulation

Pollutants



**BPA**

## Biotransformation

Toxins



## Enzymatic

Degradation

**PU**

**PET**

**PVC**

# Our Technology: Three Revolutionary Capabilities



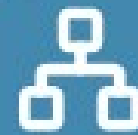
## Enzyme Arsenal

Ligninolytic enzymes break down complex organics, pharmaceuticals, dyes, and persistent pollutants



## Metal Sequestration

Cell wall binding groups capture heavy metals with 90%+ removal efficiency



## Mycelial Networks

High surface area filamentous structure for enhanced mass transfer

# Proven Success Stories

## Global Case Studies Demonstrating Efficacy:

- **Oregon Storm Water (2014):** Mycofilters reduced waterborne pollutants, validated scientifically
- **Tunisian Tannery (2023):** 45% COD removal, significant chromium reduction
- **Pune Domestic Wastewater (2013):** 88.34% BOD reduction, major COD improvements 80-95% 50-70% Zero Carbon
- **Scientific Validation:** 150+ peer-reviewed studies

**90%  
Reduction  
Pollutant  
Discharge**

**Carbon  
Negative  
Process  
Operation**

**Zero  
Waste  
Toxic  
Sludge**

**50-70%  
Cost  
Savings**

# Our Innovative Pilot Solution

Integrated Mycoremediation System Design:



## Modular Biofilters

Scalable mycelial filter systems with optimised species selection and dimensions



## Real-Time Monitoring

IoT sensors for pollutant removal, fungal health, automated optimisation



## Circular Economy

Biomass harvesting for biofuel, or carbon credits, converting waste to revenue

### Technical Innovation:

- Multi-species consortium for broad-spectrum pollutant degradation and species locality
- Modular filter system for ease of use and locale specificity
- AI-driven adaptive management

# Expert Team



## Meow-Ludo Meow-Meow

- BSc Genetics (UNSW)
- MBA (Executive , Curtin)
- 5 Australian Patents
- Moth Diagnostics: USD\$750K raised
- BioFoundry: Australia's first DIY biotech



## Krish Patel

- BSc Economics (LSE - London)
- 25 Years R&D/Innovation
- 2 Unicorn-scale ventures
- 10 Years Partner: BDO/Grant Thornton AU
- UK Based, local market expertise

# Pilot Implementation Roadmap

## 18-Month Plan:

### Phase 1 (Months 1-3): Lab Optimisation

- Isolate optimal fungal strains
- Optimise growth conditions
- Preliminary pollutant removal studies

### Phase 2 (Months 4-6): Pilot Plant Design

- Engineer modular bioreactor systems
- Install monitoring systems
- Partnership with water authority/Local Unis

### Phase 3 (Months 7-12): Field Trials

- Process real wastewater
- Optimise operational parameters

## Future (2026-2029):

- PFAS filtering and treatment
- Mining tailings
- Expanding species & strains
- Mass/Scale Production
- Further investment and increasing staff

# Investment Requirements & Expected Impact

## Funding Requirements:

- £250,000: Equipment & infrastructure
- £180,000: Personnel (18 months)
- £70,000: Materials & consumables
- £50,000: Regulatory & compliance
- £50,000: Contingency

## Market Opportunity:

- UK: £24B investment committed
- 50-70% cost reduction
- Carbon credit revenue
- Byproduct value: biofuels
- Global export potential

# Environmental & Social Impact

**90%  
Reduction**  
Pollutant  
Discharge

**Carbon  
Negative**  
Process  
Operation

**Zero  
Waste**  
Toxic  
Sludge

**Local  
Jobs**  
Green  
Technology

## Why Act Now

- ⚠️ **Regulatory Pressure:** Water (Special Measures) Act 2024
- ⚠️ **Public Sentiment:** Water (Special Measures) Act 2024
- ⚠️ **Technology Readiness:** Proven science ready for deployment
- ⚠️ **Market Timing:** £24B infrastructure investment window
- ⚠️ **Competitive Advantage:** First-mover in revolutionary technology

# Call to Action

**England's water crisis demands immediate, innovative action.**

**Mycoremediation offers a proven, scalable, sustainable solution.**

## **What We're Seeking:**



### **Investment**

£600K seed  
funding for 18-  
month pilot



### **Industry Partner**

Water company  
& Uni for pilot  
deployment



### **Regulatory**

Environment  
Agency  
engagement



# Thank You

**Let's Transform England's  
Water Future Together**

[www.mycene.io](http://www.mycene.io)