Session 8	Microbial protein transition players
Pitch Title	Modular pilot valorisation
Company	Niskus Biotec Ltd
Speaker	Vincent Farrelly
Keywords feedstock	Brewery & Whiskey side streams
Keywords technology	Low cost automated mobile modular mini pilot fermenters Onsite Evaluation Data
Keywords End-Product	Protein rich biomass for feed & food applications , Enzymes De Risking large scale biorefinery investments

Abstract:

Problem:

Breweries and distilleries generate substantial spent grains (BSG) and associated liquid waste, typically treated as low-value by-products. This presents challenges in water usage, storage, logistics, and CO2 emissions. Future regulations are likely to increase disposal costs, necessitating innovative bioeconomy solutions.

Solution:

Niskus Biotec is developing an automated, mobile mini pilot fermentation system for on-site valorisation of brewery and distillery side streams. This technology produces protein-rich microbial biomass for feed and food applications, as well as valuable enzymes. The system processes up to 1000L of waste, with pilot implementation within 6 months, using non-GMO strains optimized for specific waste streams. Additionally, it incorporates advanced water treatment technologies for cleaner process water reuse within the facility

Potential:

This solution offers an impactful ESG approach, minimizing waste while generating new revenue streams. The system's automation allows for easy operation by existing brewery staff. **By providing techno-economic on site data at mini pilot scale, Niskus Biotec de-risks larger pilot and full scale biorefinery investments**. Production of 50-100kg biomass samples enables market evaluation by feed and food companies. This addresses current waste issues in the brewery sector while preparing for future regulations and consumer demands for sustainable products.

Key Metrics:

- Capacity: Up to 1000L per batch
- Implementation: 6 months
- Automation: High
- Protein rich biomass production: 50-100kg biomass for evaluation within 4 weeks
- Environmental impact: Potential 70% reduction in waste disposal costs
- Water reuse: Up to 60% of process water recycled
- Product innovation cycle: Reduced from months to weeks