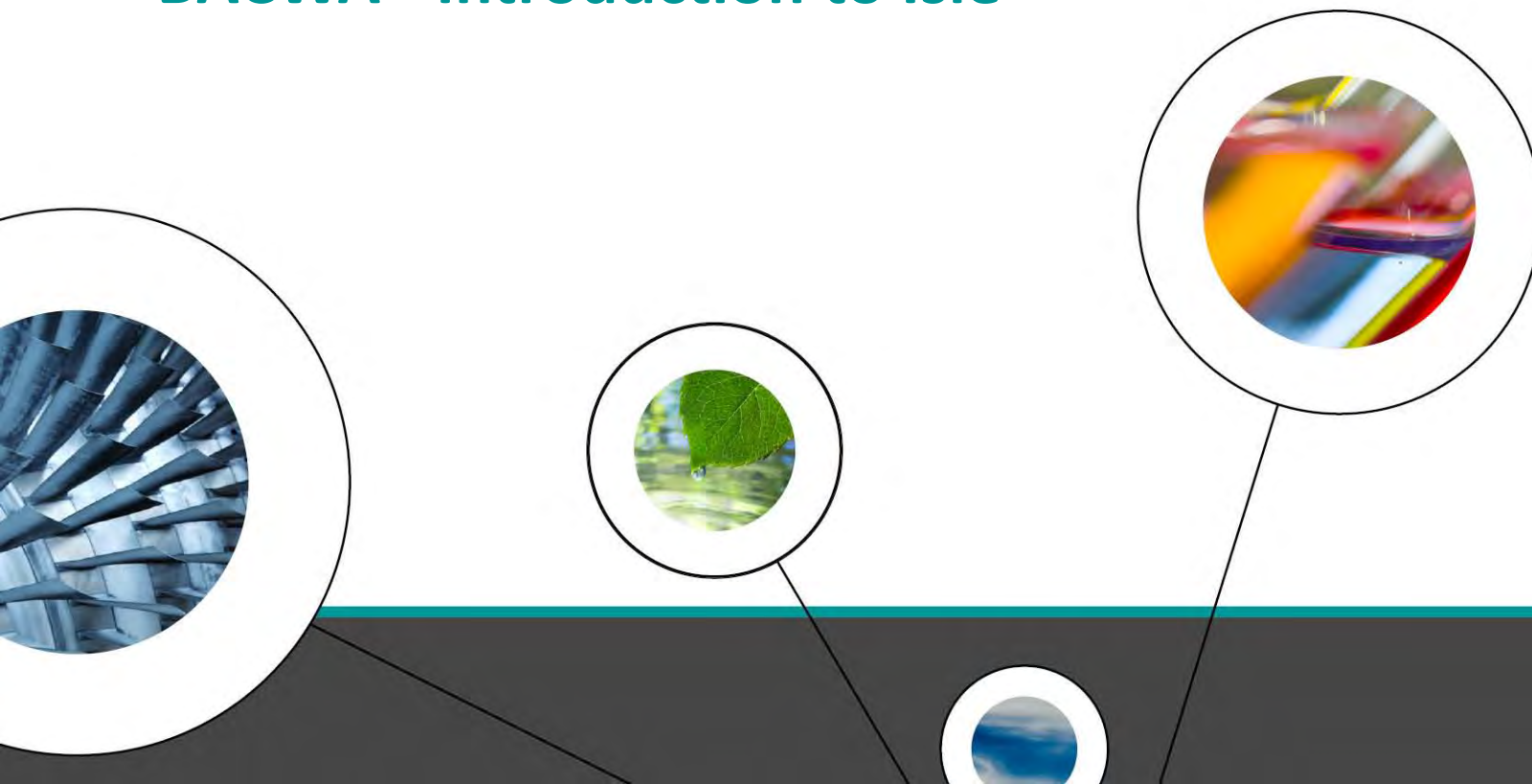




TECHNOLOGY APPROVAL GROUP

BACWA - Introduction to Isle



Introduction to Isle

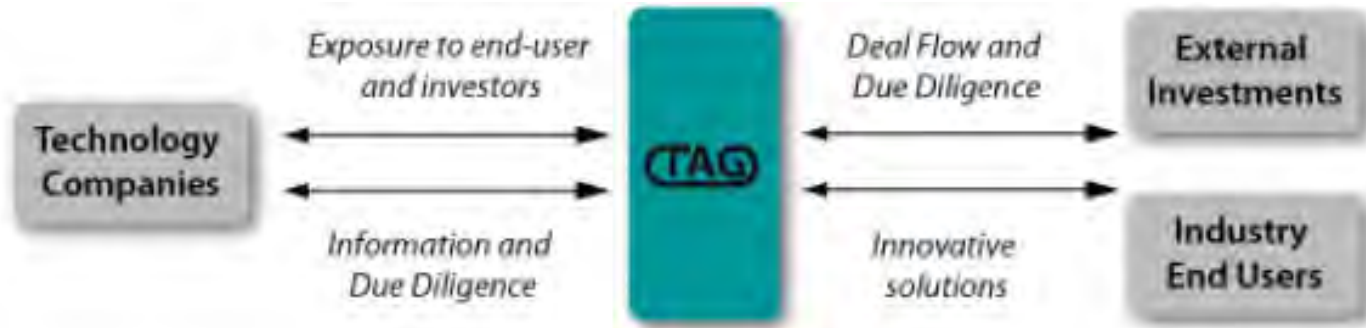
- Boutique technology & innovation consultancy
- Water, waste, energy and low carbon
- Offices in UK, Australia and US (California)
- ca 25 staff (plus ca 25 Associates)
- \$2.5m turnover
- Core product: Technology Approval Group
 - 100 utilities from around the world
 - Water TAG groups in N Europe, S Europe, Singapore (Asia), Australia, and California
 - New TAGs planned for Middle East , Canada, and China
- Company ethos: ‘Give more than we take’
 - 50% of profits donated to:
 - Water/sanitation start-ups (REEF) or
 - The ‘Applied Research’ fund



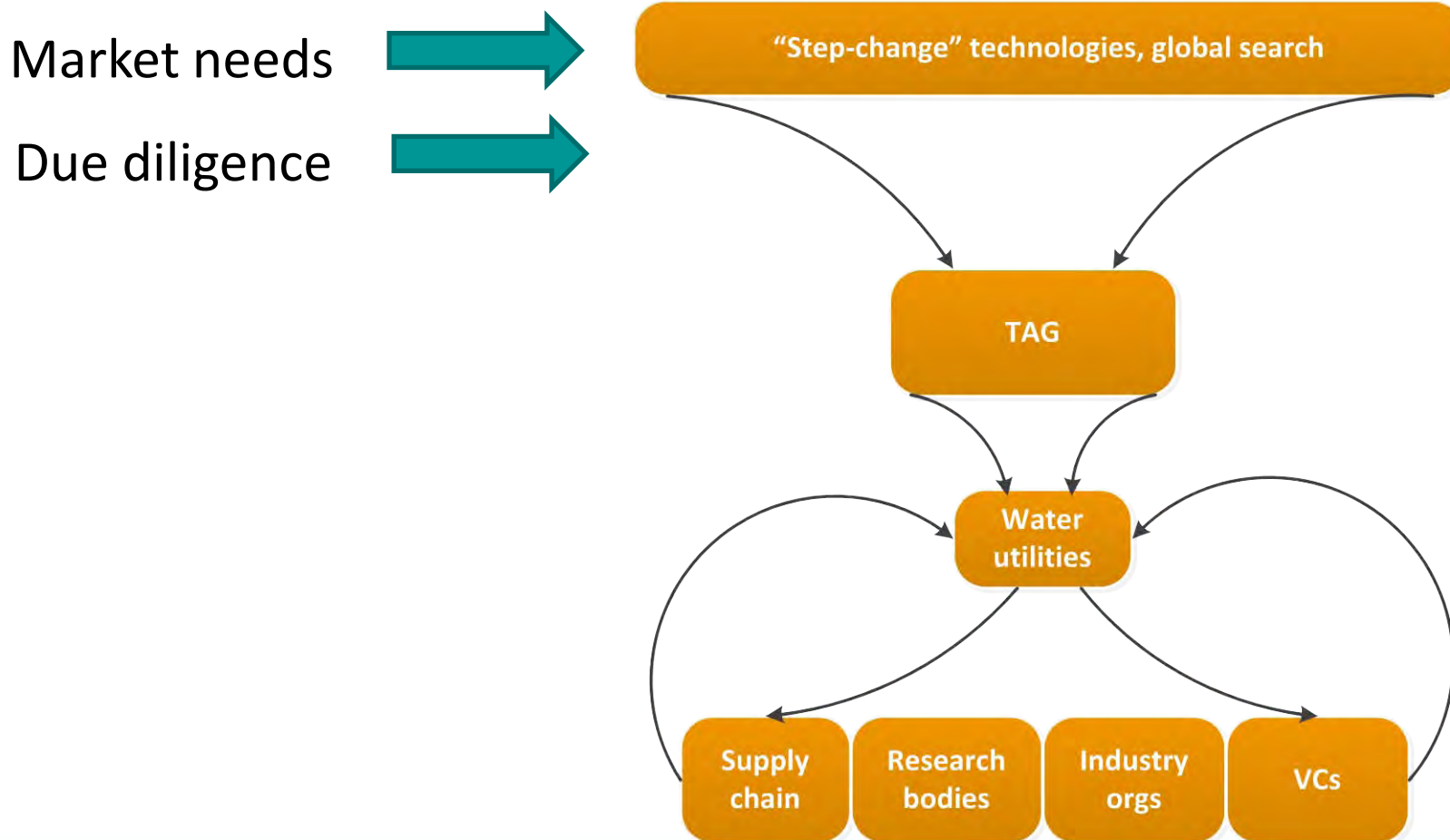
What is TAG?

TAG brings a new energy and momentum to the water industry

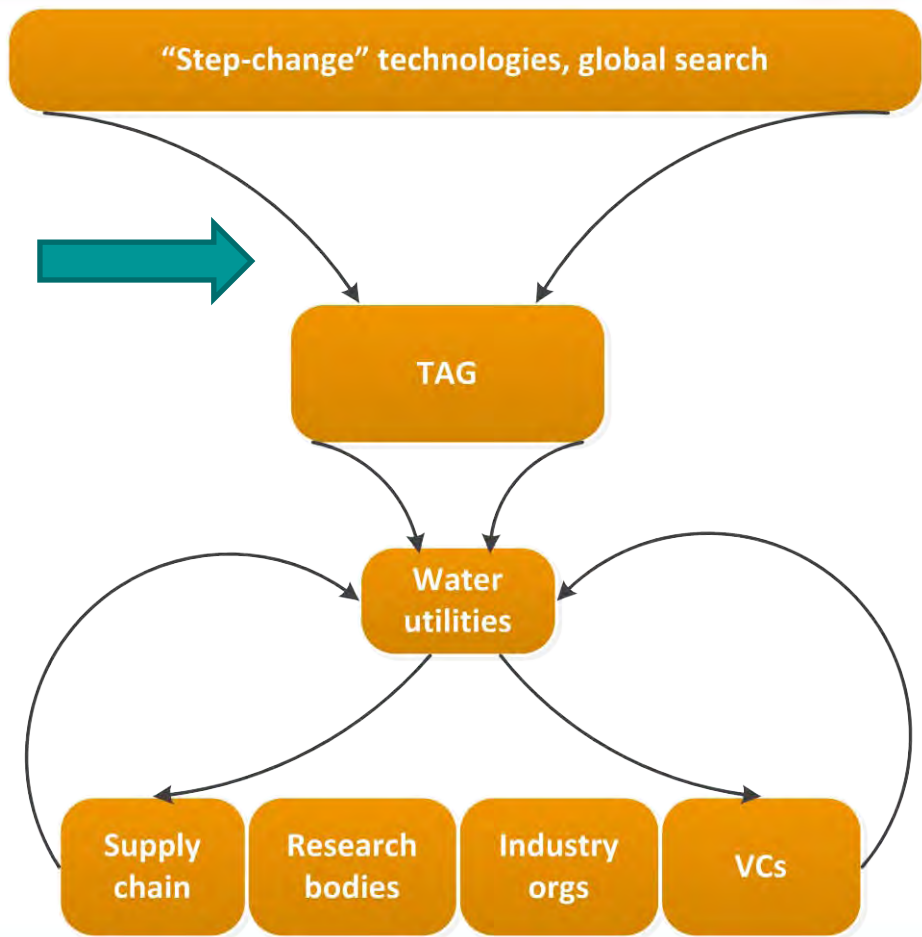
- Innovation forum of the world's leading water utilities
- Unparalleled track record in bringing new technologies to market
- Industry collaboration
- Strong links to VC investors



How does TAG work?

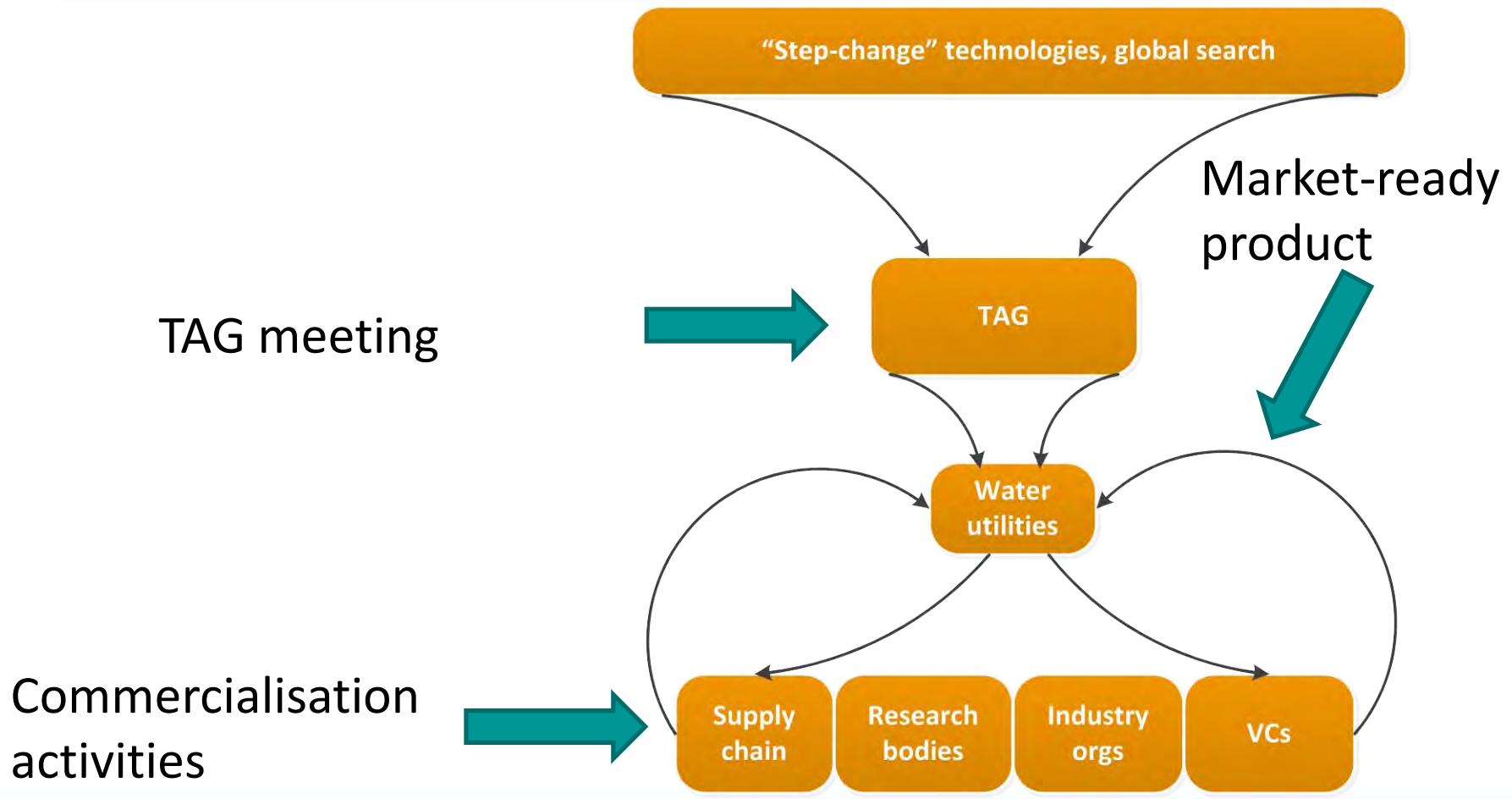


How does TAG work?

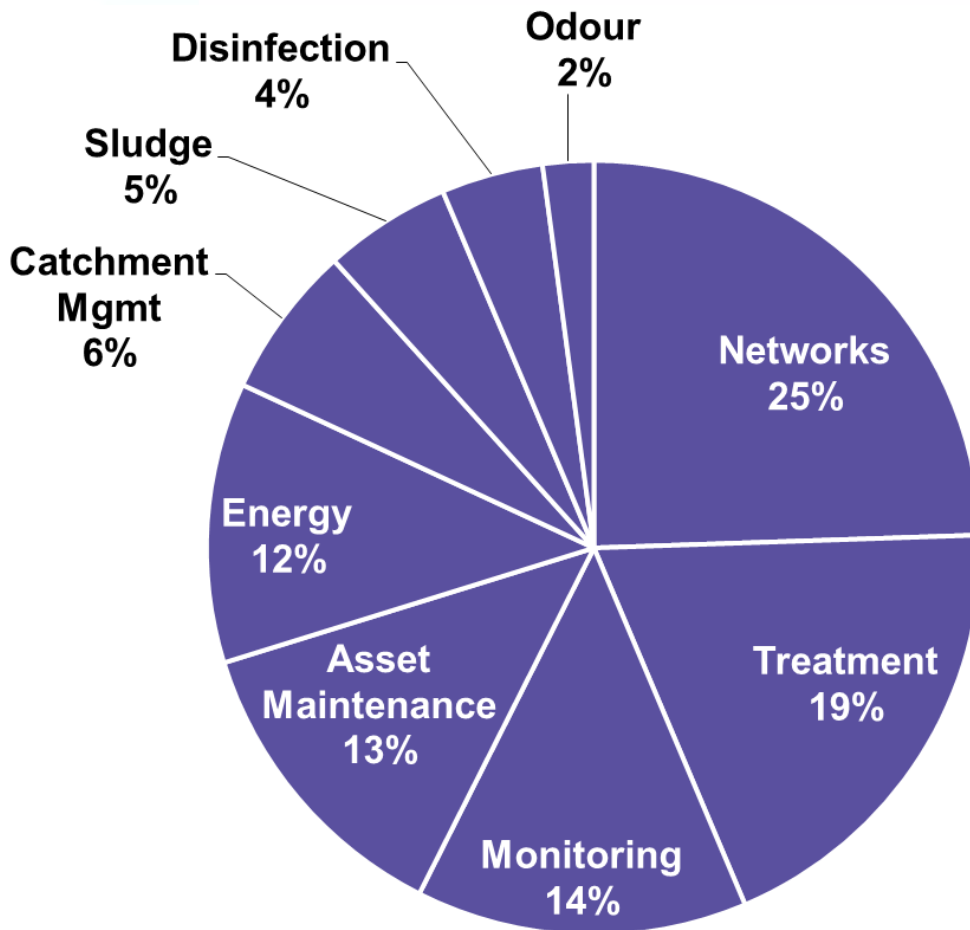


Proposed Technologies list

How does TAG work?



Track Record



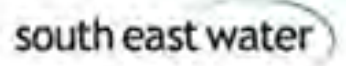
- **2,000** technologies since 2005
- **35** TAG meetings to date globally
- **130** presented at TAG
- **75%** have been taken forward by TAG members
- **~\$300m** of VC investment secured



Our International TAG Members



Global Water Resources



Our Australian members



Ostara – Nutrient recovery

- Nutrient removal from centrates following dewatering of sludge
- Recovery and recycling into a high value commercial fertiliser (Crystal Green™)
- Good uptake in North America
- Commercial roll-out in UK following demonstrations with Thames Water and Severn Trent Water
- Now looking at other markets
- Recent round of investment to support the commercial exploitation



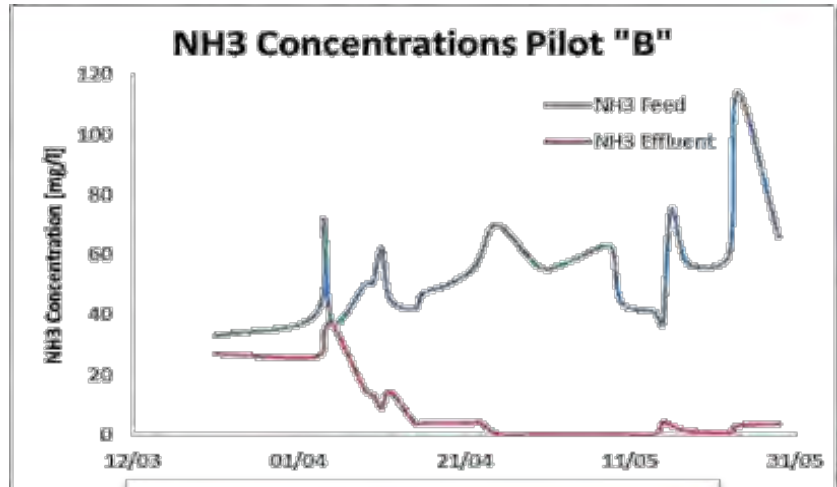
SCFI – AquaCritox Supercritical Water Oxidation

- Complete destruction of digested sludge
- Trials in the pipeline with YW and STW, who will be sending sludge samples to their demonstration plant at Cork
- SCFI have secured a partnership with Parsons (for Engineering) and Rockwell (for instrumentation)
- Seeking €9m of investment
- Future plans include a €3m full-scale plant for an industrial client in Cork and also to develop a mobile unit



Emefcy – Passive aeration

- The reactor is based on breathable membranes rolled in a spiral
- Air is blown past the membranes and O₂ diffuses through into the biofilm
- Decreases the energy needed for aeration by 95%
- Modular and odourless system
- Ideal for small municipal WWTW (100–3,000 m³/day)
- Alternative applications could be tertiary treatment



Micromidas – Sludge to Plastic

- Process converts wastewater solids into a bio-polyester plastic called PHA (polyhydroxylalkanoate)
- The process consists of modified digestion and aerobic fermentation
- The microbial population converts fatty acids into intracellular polymer
- The plastic is then extracted, polished, and sold as a plastic resin for use in multiple applications
- Plastic could be worth 5-10 times the value of biogas



What we are offering?

- 4 TAG meetings per year
- 2 Innovation workshops per year for TAG members
- **Technology Portal** - Access to our online portal with over 1000 technologies and feedback from other utilities globally
- **Eureka App** - Access to our Eureka app to keep you informed about trials taking place globally

The cost?

- We use a range of different pricing models, each structured for the local market. Typically a tiered approach works
- Running a 'local' TAG delivery team typically costs \$250k – \$350k
- In California we anticipate TAG forums in San Diego, LA and San Fran; both Water and Wastewater
- Could deliver BACWA TAG for ca \$100k. Suggest capped investment for any individual member.
- **Open Book Policy** – All surplus profits made from TAGs will be reinvested back into trials or used as a discount on next years subscription.

Timescales & Potential Next Steps



- **OCSD TAG Meeting:**

- Next OCSD TAG meeting on 8th November 2012.
- BACWA representatives could attend to consider membership

- **New BACWA TAG?**

- Kick-off meetings to be held from Jan 2013,
- First BACWA TAG in March 13?

Summary

- TAG accelerates technology development and commercialization
- Closing the loop
 - Sourcing technologies / deal flow
 - Encourages market uptake and shared risk
 - Extended network of investors to drive financial support
 - Engineering through to board level management
 - ‘Eureka App’ to provide real time feedback



Thank you

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