

# Asset Management

Keep plant in good order to optimise outputs and minimise downtime

# Asset Management

## ▶ Panel

- ▶ David Woolgar - Consultant
- ▶ Carl Gurney - Jelf Insurance Brokers
- ▶ Wilbert Smeets - Scottish Environmental Services Association
- ▶ David Squirrell - ExxonMobil
- ▶ Daniel Purvis - Ingenious Capital Management

## ▶ Format

- ▶ 5 Speakers
- ▶ Q&A Session

# Introduction

- ▶ David Woolgar
- ▶ Chair of ADBA TSE Group
- ▶ AD plant Designer and Operator
- ▶ Independent consultant in AD and Biogas
- ▶ 10 years at Biogen leading the design and commissioning of AD plants

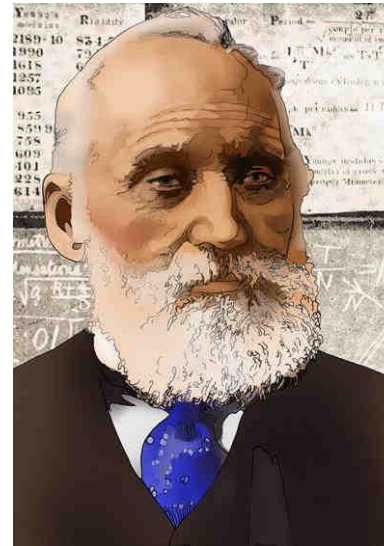


# Asset Management

- ▶ Wide subject which the panel will try and cover
- ▶ My focus is on 2 topics
- ▶ Data
- ▶ Gas Safety

# Asset Management - Data

- ▶ Business Guru Denning
  - ▶ “What gets measured, gets managed”
- ▶ Victorian Scottish Scientist and Engineer Lord Kelvin
  - ▶ “When you can not express it in numbers, your knowledge is of a meagre and unsatisfactory kind”
- ▶ Measure performance of plant
- ▶ Identify Trends
- ▶ Understand the effects of change



# Asset Management - Data

- ▶ What to Measure
  - ▶ What goes in
    - ▶ Feedstock energy - silage loses c30% of energy value in poor clamp
    - ▶ Energy consumption -
  - ▶ What happens in the digester
    - ▶ Temperature
    - ▶ Alkalinity Ratio
    - ▶ Volatile Fatty Acids
  - ▶ What comes out
    - ▶ Volume of Biogas
    - ▶ Quality of Biogas
    - ▶ Energy produced



# Asset Management - Gas Safety

- ▶ Biogas is a fuel
  - ▶ supplies fires
  - ▶ forms explosive mixtures.
- ▶ Design is about
  - ▶ containment and
  - ▶ dispersion of leaks
- ▶ Leaks are expected



# Asset Management - Gas Safety

- ▶ Requirements set out in **ATEX & DSEAR**
- ▶ **Dangerous Substances and Explosive Atmosphere Regulations**
- ▶ Operators responsibility
- ▶ DSEAR Assessment - updated
- ▶ Classify areas for explosion risk (Zones)
- ▶ Equipment in Hazardous Area (Zones)



# Asset Management - Gas Safety

- ▶ Operate as intended
- ▶ Inspection and Maintenance Plan
  - ▶ Periodic visual inspection
  - ▶ Equipment inspection
  - ▶ Operation of isolation valves
  - ▶ Leakage tests

# Thank You

▶ David Woolgar [david@davidwoolgarconsulting.co.uk](mailto:david@davidwoolgarconsulting.co.uk)