

# Complex Fluids Capability

Drivers / Challenges

**Ensuring a secure, sustainable energy supply / Supporting innovative applications of flow metering**

Targets / Impact / KT

Industry guidance on flowmetering techniques for complex fluids

Industry guidance on CO<sub>2</sub> flow measurement / support for standards

Industry guidance on characterisation of new fuels and effects of composition on fluid volumetric properties

Improved process efficiency, reduced pollution and tighter loss control to meet increasingly stringent environmental controls

Reduction of greenhouse gas emissions, enabling UK to meet international treaty obligations

Maximising recovery of UK oil&gas reserves and promoting uptake of new fuels for aerospace and automotive applications

Deliverables

Research on effects of non-Newtonian fluids on flow meters

Performance of flow meters in CCS & fluid properties

**EMRP Project** : Measurement and modelling of bio- and synthetic-fuels

Industry guidance on fluid density measurement

Guidance on measurement of flows in CCS applications - **09/10**

Improved techniques for sampling systems - **01/11**

Measurement and modelling of high viscosity oils






Technologies

**New capability**: non-Newtonian flow facility - **03/10**

**New capability**: Knowledge of flow metering in CCS

Sampling systems for complex flows

**New capability**: Density measurement of biofuels and live crude oils

- Project 08/2.4 
- Project 09/09 
- Project 08/2.5 
- Project 08/5.1 
- Project 09/08 

Enabling Science

**Underpinning metrology, traceability and standards plus increasing knowledge of physics, chemistry and fluid dynamics of complex fluids**

2009

2010

2011

2013

2015

