

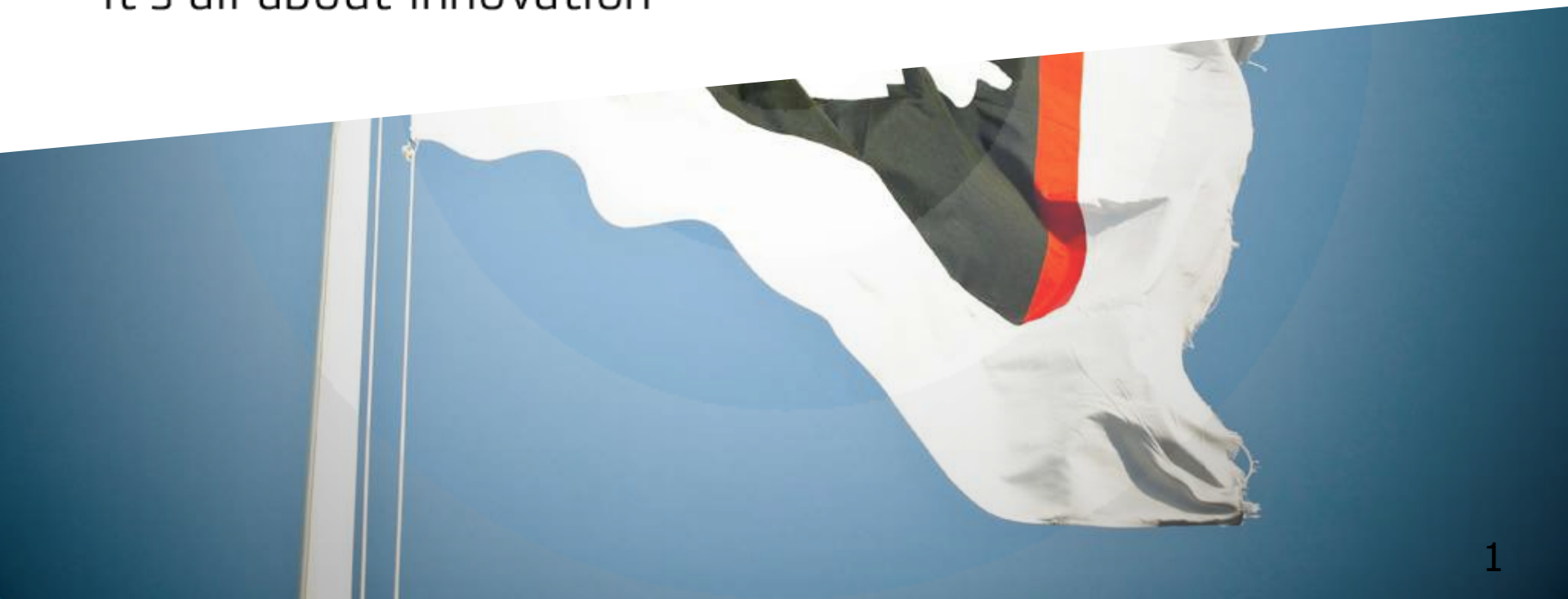


DANISH
TECHNOLOGICAL
INSTITUTE

DANISH TECHNOLOGICAL INSTITUTE

DTI Oil & Gas

it's all about innovation



WHO ARE WE?

- ❑ An independent institution with international operations
- ❑ Objective is to develop and disseminate technological innovations
- ❑ Activities are R&D, laboratories, production, consulting business

DTI is a part of the GTS, Advanced Technology Group in Denmark with more than 3400 scientists, academics or graduated engineers.

DTI were founded in 1906 with the purpose to support the Danish Industry – today, more than 900 employees operates World Wide in a modern and high-tech organization



WHAT DO WE DO?

- ❑ Off-the-shelf production services and tailor-made solutions
- ❑ R&D assignment paid by public programs or by customers
- ❑ Advanced laboratory investigations, analysis and counseling

Building & construction

Transport & logistics

Food & packaging

Energy & climate

Measurement & control

Productivity & Management

Environmental & health

Oil & Gas

And more.....



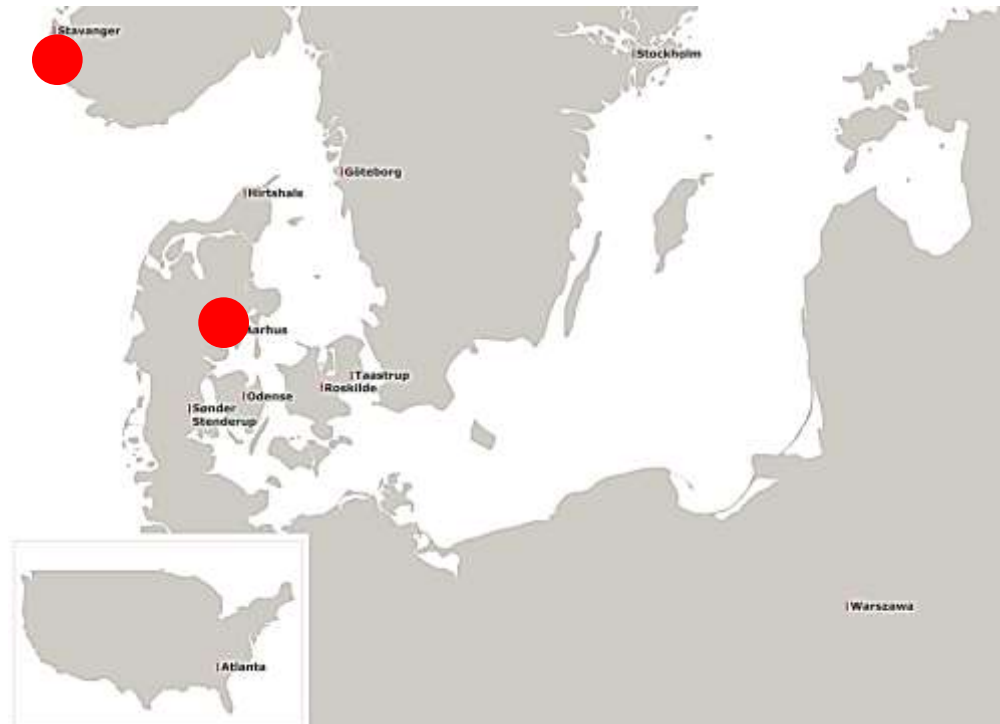
WE IMPROVE EVERYDAY

- ❑ Operates globally with own presence in Europe and US
- ❑ A total revenue of 130 EUR million realized in 2011
- ❑ Expanding activities and growth with 10-15% at year

Did you know that:

DTI Oil & Gas has been working in the Offshore Oil Production sector since 2004

More than 50 employees are dedicated your assignment on a daily basis



PRODUCTS AND SERVICES

Microbiology Services*

Monitoring and mitigation for reduced failure risk

Antifouling Coating services*

Coating of equipment for minimized maintenance

Tracer services*

Online tests for EOR purposes

Laboratory services

Flexible and fast analytical services

Training courses

Knowledge sharing

Contract R&D

Fast-track technology development





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Antifouling Coating Services

[BACK](#)



ANTIFOULING TO TOPSIDE PRODUCTION EQUIPMENT

- Fouling of equipment is a major concern to operators, hampers operations and carry large maintenance costs

Pain

- DTI has developed an Antifouling coating with proven effect and provide it as a Service from our service shop in DK
- The benefit to operators is large cost savings, prolonged maintenance intervals, enhanced service life of existing equipment and an optimized oil production

Solution

Benefit





ANTIFOULING TO TOPSIDE PRODUCTION EQUIPMENT

Pain – fouling of equipment is a major concern...

- Effects design calculations of new process equipment and installations
- Increase maintenance intervals and costs related to refurbishment
- Hampers downstream operations due to low equipment efficiency
- Carry safety concerns when working with hazardous waste
- Increased risk of spill and leaks causes environmental considerations
- Increased use of chemical treatment and cleaning procedures
- Increased handling cost, documentation and utilization of facilities
- Increase need to deal with toxic waste from offshore maintenance

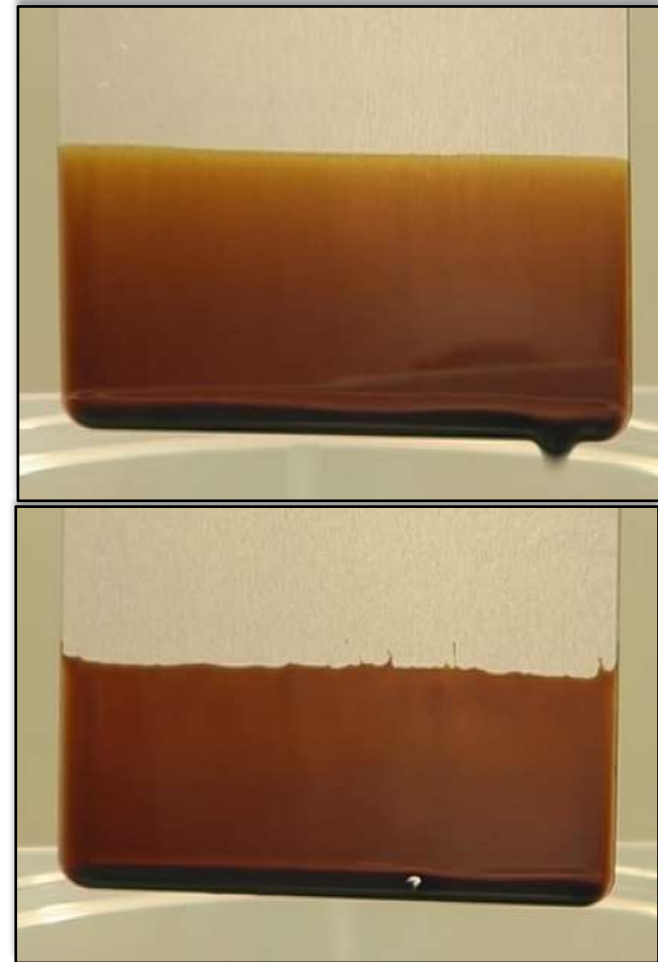
ANTIFOULING TO TOPSIDE PRODUCTION EQUIPMENT

Solution: What is needed?

Reduce the ability for deposits to adhere to the contact surfaces of production equipment! – (low energy surfaces)

Many demands from installation, operation and environment must be met at the same time to make a strong solution

Known coating solutions are inappropriate – they simply can't do the job right!



ANTIFOULING TO TOPSIDE PRODUCTION EQUIPMENT

Solution: What is needed?

- ✓ Appropriate cleaning of substrate
- ✓ Good adhesion ability to substrate
- ✓ Must be repellent to substances
- ✓ Resistance to Wear & chemicals
- ✓ Good mechanical properties
- ✓ High Thermal conductivity



ANTIFOULING TO TOPSIDE PRODUCTION EQUIPMENT

Solution: The story behind

- ❑ An operator were looking for a novel antifouling solution in 2009
- ❑ Problem: PHE's required refurbishment every 6 month
- ❑ A coating solution against Wax & Limestone developed by DTI was evaluated
- ❑ The result from field test shows excellent performance + 4x



ANTIFOULING TO TOPSIDE PRODUCTION EQUIPMENT



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Solution: Properties

<input type="checkbox"/> DTI coating system	CoreCoat
<input type="checkbox"/> Coating thickness	5-10 μm
<input type="checkbox"/> Flexibility of coating	Yes
<input type="checkbox"/> Maximum media temperature	80°C
<input type="checkbox"/> Maximum operation pressure	30 bar,g
<input type="checkbox"/> Wear & chemical resistance	PH 3-10
<input type="checkbox"/> Repellant towards organic deposits	Yes
<input type="checkbox"/> Repellant towards inorganic deposits	Yes
<input type="checkbox"/> Applied by spray, dip or flush coating	Yes
<input type="checkbox"/> Environmental impact	No