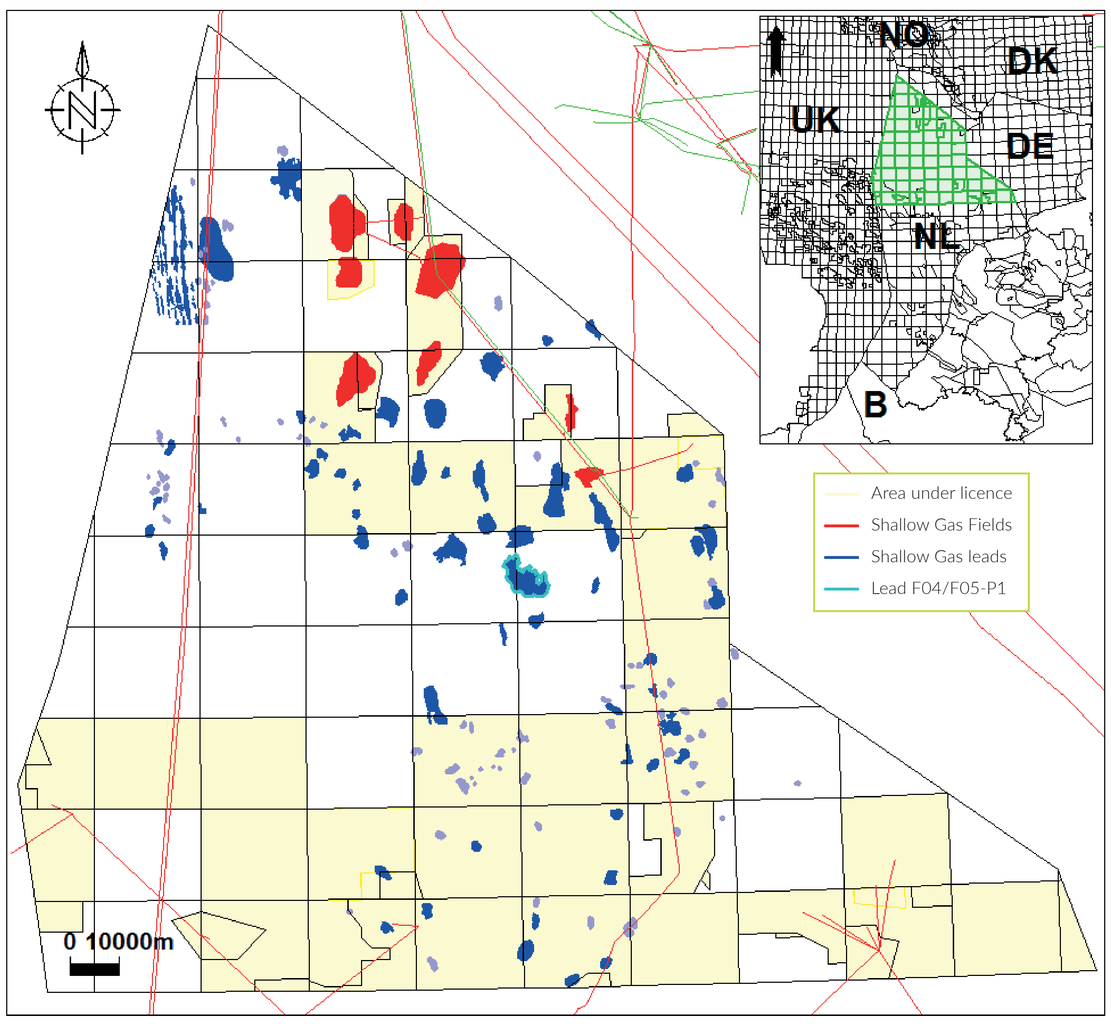
Shallow gas
bright opportunities in the Dutch offshore

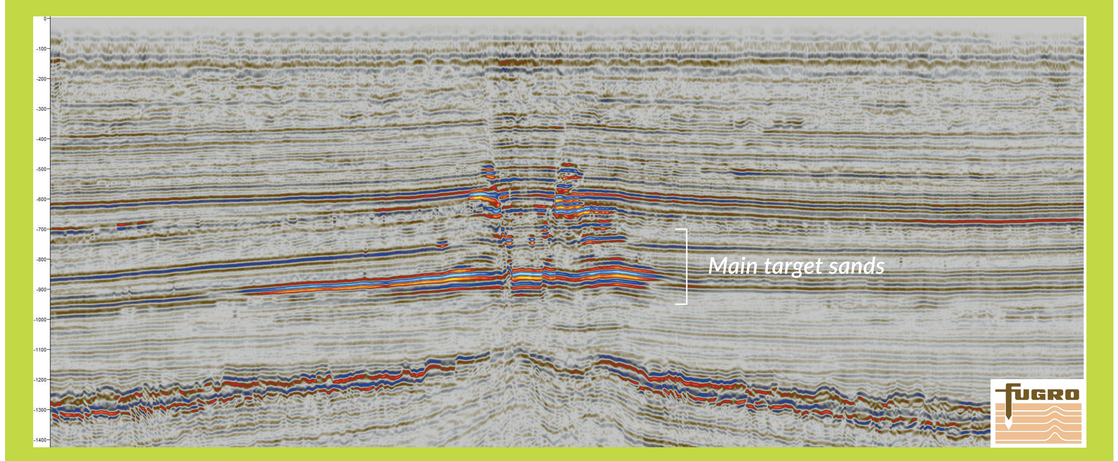
The northern Dutch offshore hosts many shallow seismic amplitude anomalies, often indicating the presence of gas.
Miocene-Pleistocene unconsolidated sands form the reservoirs (300-800 m depth), shales act as seal. The traps are generally low relief anticlines related to salt domes.

Why explore for shallow gas?

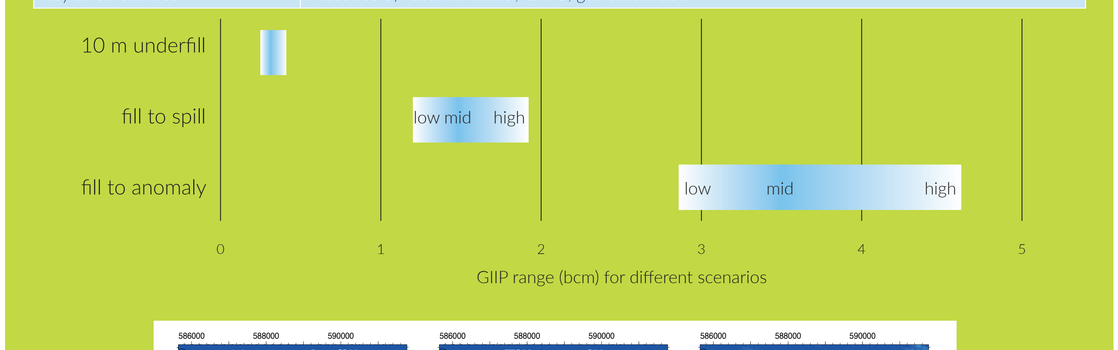
- 8 discovered fields of which 3 are producing
- Significant additional potential
- Tax incentive applicable to all shallow fields

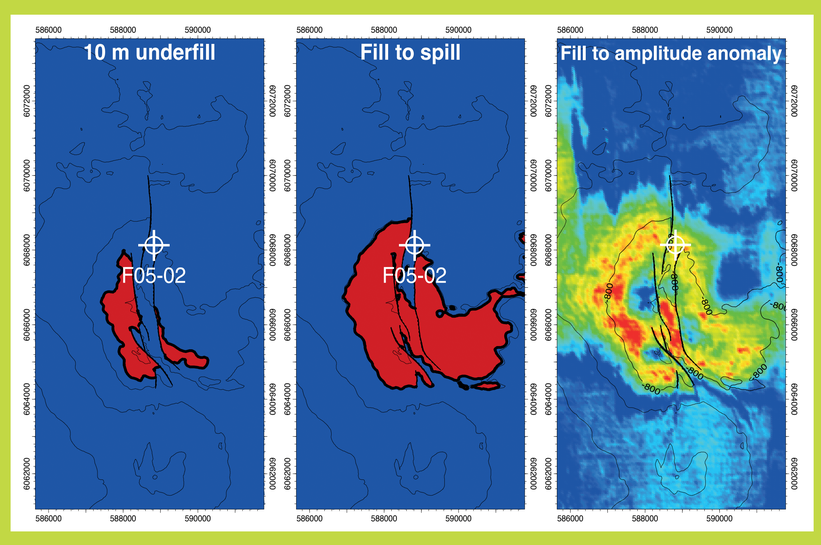


Example lead F04/F05-P1



License	*F04/F05: open acreage*
Offset well	*F05-02 (1982), targeting Cretaceous & Triassic; shallow gas indications*
Seismic data	*3D multiclient survey (Fugro, 2012)*
Bright spot characteristics	*Faulted dip-closure, NU fm (sand & clay), 3 main targets, partially conform to structure*
Key uncertainties	*Presence of reservoir sand, GWC, gas saturation*

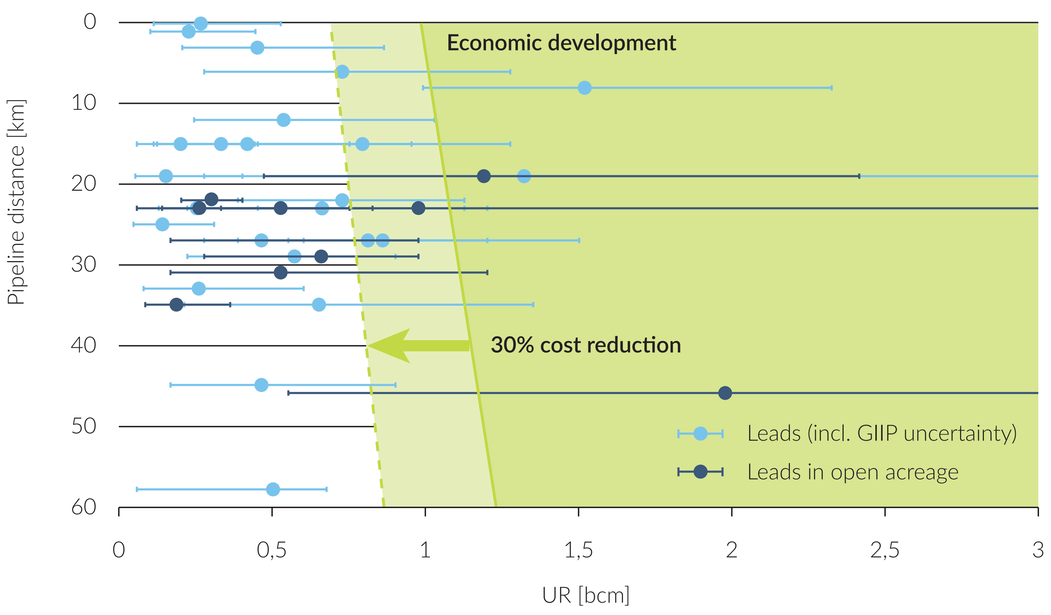




Economics & development

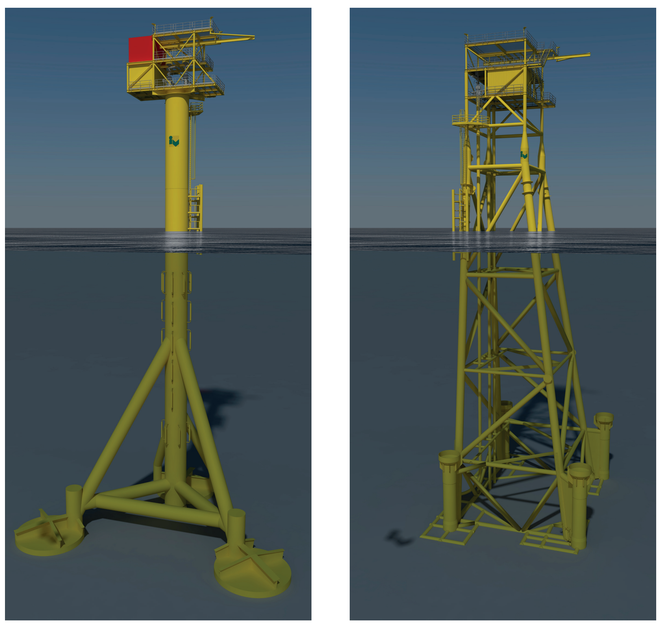
Conceptual economics stand-alone projects

- 4 economic leads using standard cost profiles
- 10 economic leads using low cost profiles (30 % total cost reduction)
- 15 economic leads using low cost profiles and assuming upside volumes



Study shows: halving platform costs is feasible

- Simplified design suitable for shallow gas production
- Stripped down to bare bone (minimum facilities)
- Water depth: 45 m
- Design life: 25 years
- Re-locatable



IV study 2014

- **Several companies are actively pursuing cost reduction for satellite platforms to be installed in near future.**
- **EBN investigates opportunities for a cost-efficient exploration campaign (EBN E&P Workshop Cost Reduction for Development & Maintenance 22-23 of June Rotterdam, more information in booth)**