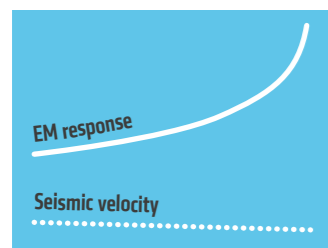


TOWED STREAMER EM

Reducing drilling risk



Hydrocarbon saturation

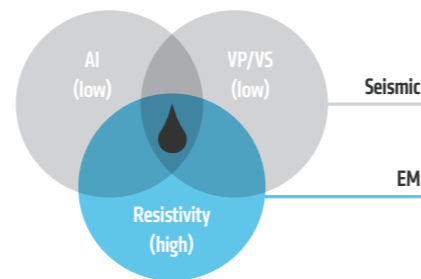
EM + seismic = reduced risk

Improved hydrocarbon saturation estimates.



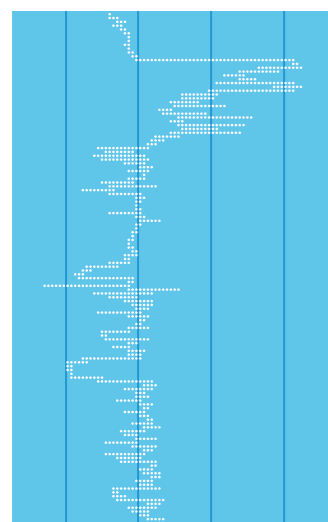
Sight & sound

Complementary data add new layers of comprehension: a bit like adding sight to sound. While seismic is the best measure of lithology, EM is more sensitive to changes in fluids.



Independent inversions

Seismic data can be inverted for velocity and for acoustic impedance. Inversion of EM data provides resistivity. Correlating all three improves drilling success.

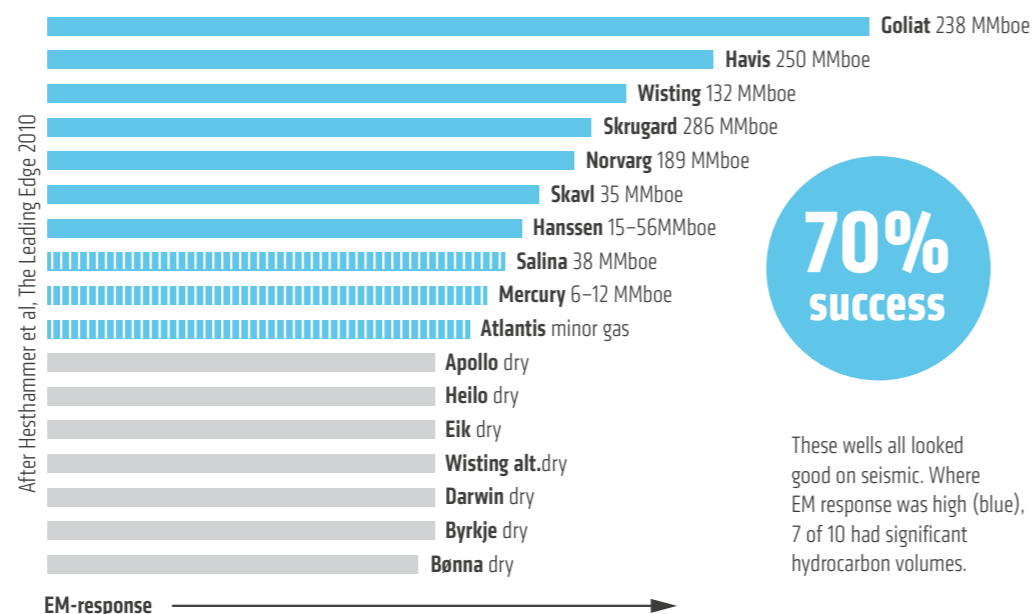


Resistivity

Hydrocarbon saturated rocks are typically highly resistive. Geologists access local resistivity data from well logs.

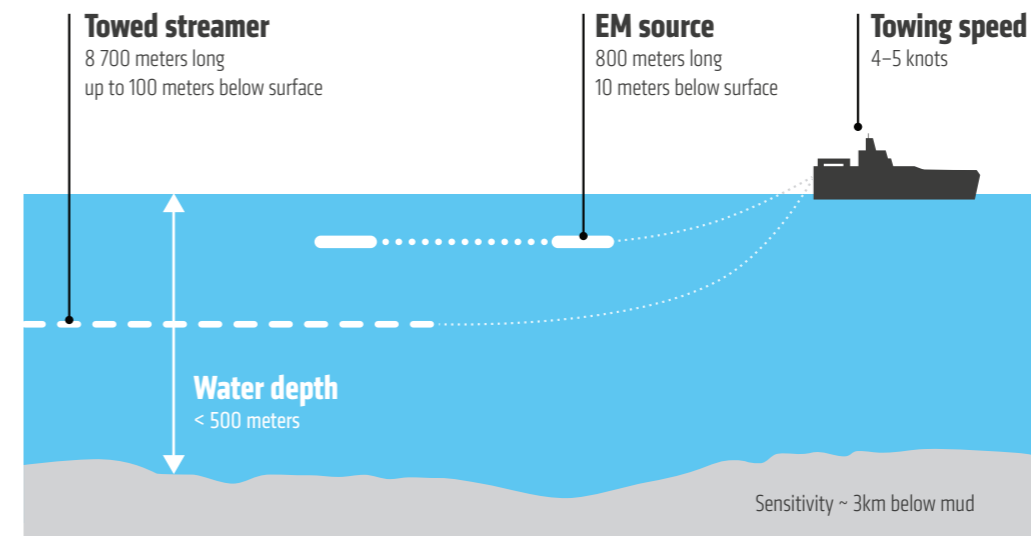
Drilling success with EM

Barents Sea



Operational 101

Towed streamer acquisition produces high density 2D or 3D EM data fast. The operation is very similar to seismic, making it easy to install, operate and even combine.

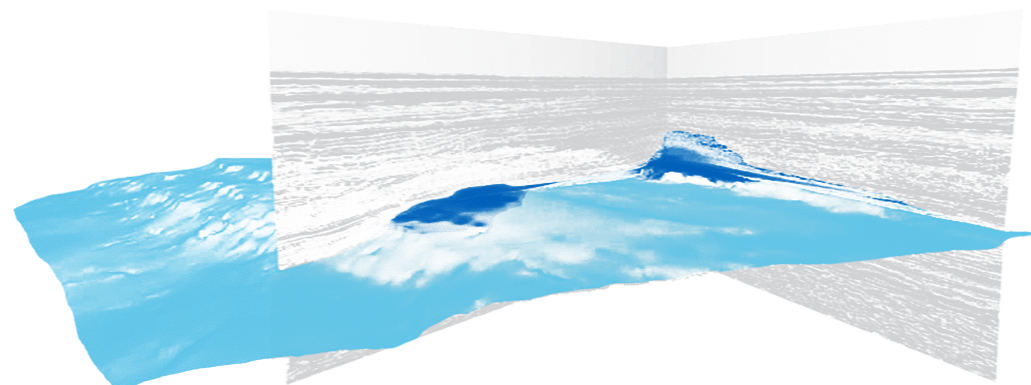


Fast
Acquisition speed up to 200 sq. or line km EM data / day

Flexible
Multipurpose EM can de-risk frontier prospects, reveal drilling hazards, or identify missed tail end production.

Global
Northern Europe is the region with greatest EM coverage so far, but feasibility studies around the world show this technology has global potential.

Adding EM to seismic



How and when

Improve ranking of prospects by adding 2D or 3D EM data to existing seismic data. Enhance EM resolution by using the seismic to guide the EM inversion.

Acquire EM and 2D GeoStreamer data efficiently and simultaneously with the same vessel to plan new 3D seismic.

HSEQ



Health

PGS' high operational standards apply.



Safety

Standard PGS towed streamer operations and equipment reduces risk.

EM helps identify shallow gas drilling hazards.



Environment

Low environmental impact.

Fewer vessel days = lower emissions in both standalone and simultaneous acquisition modes.



Quality

Towed streamer EM produces high density data and permits onboard QC and processing.

