

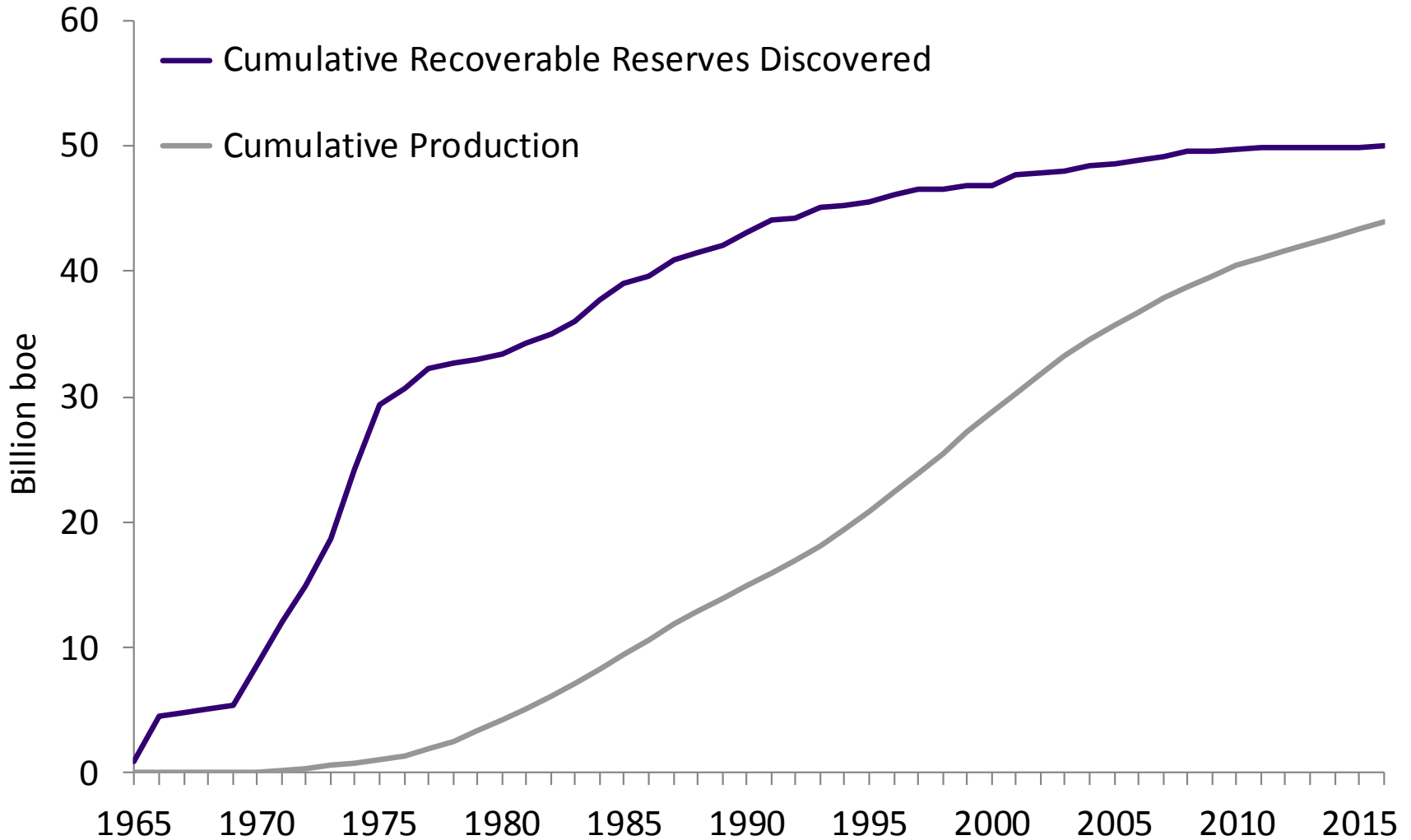
Unlocking Marginal Fields – What does the economics tell us?

Mike Tholen – Upstream Policy Manager

Unlocking Marginal Fields – What does the economics tell us?

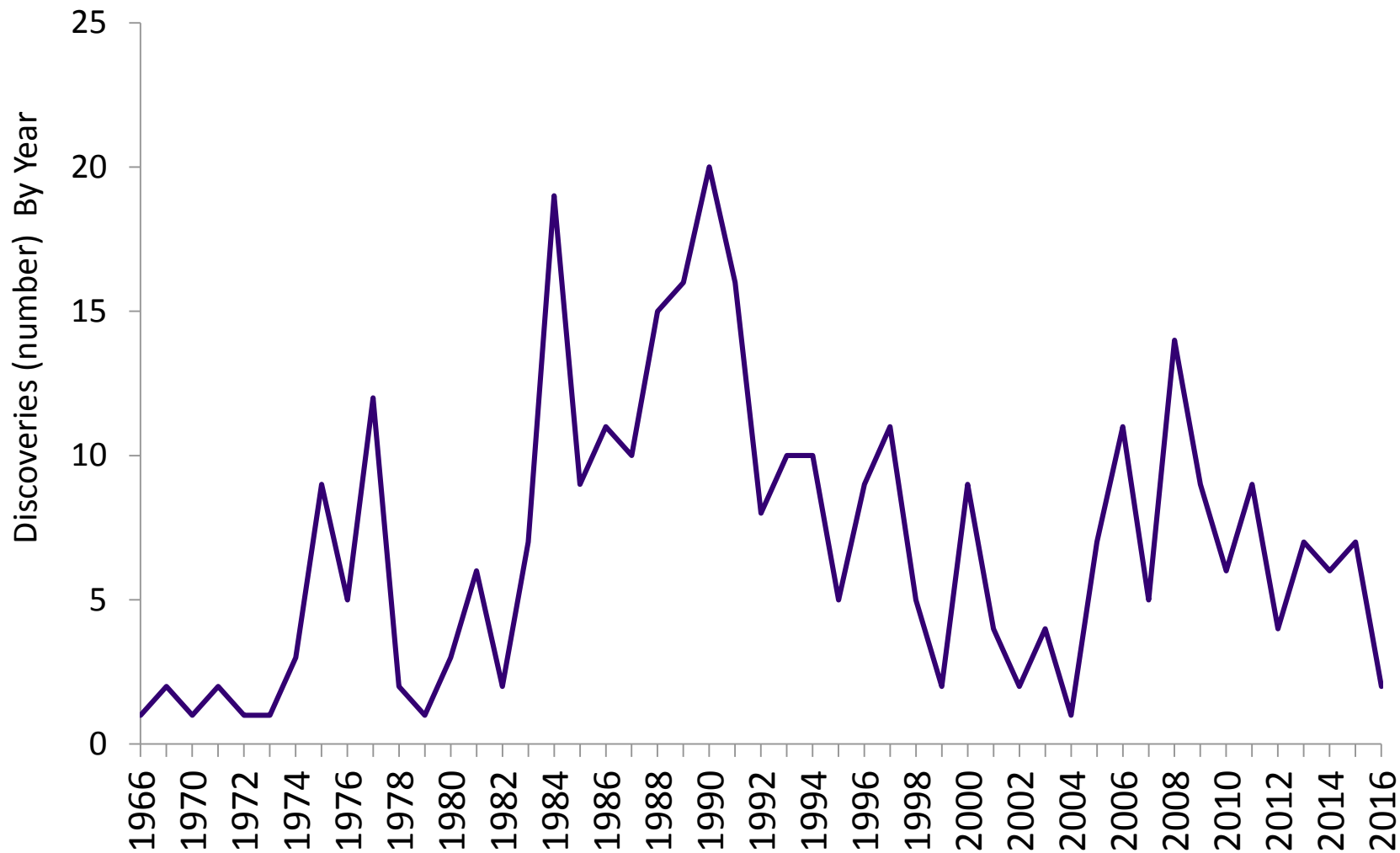
- Context / size of the prize
- Market Signals
- Business Opportunity

More than 85% of the existing reserves base has been produced



Source: Wood Mackenzie

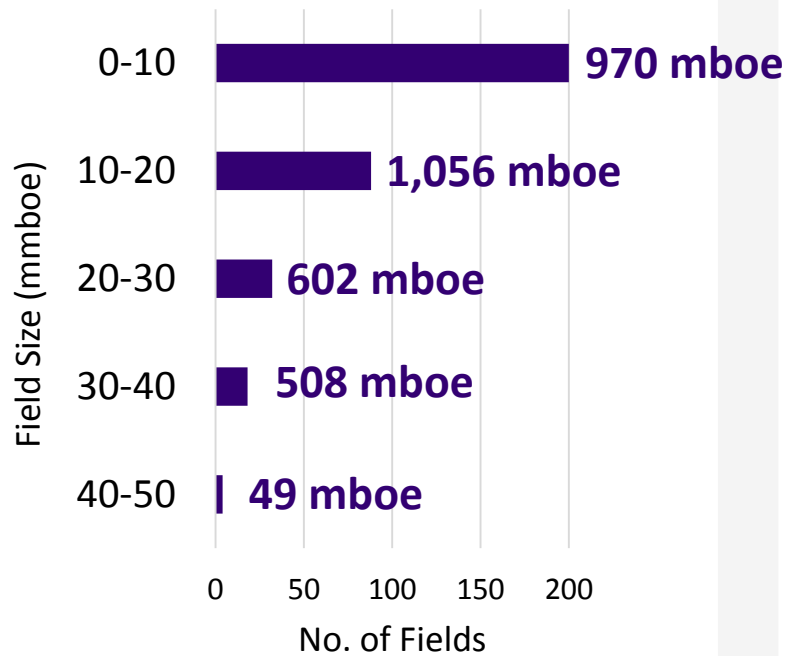
A steady number of small pools (<50 mln boe) continue to be discovered



Source: Wood Mackenzie – Pools under 50mmboe

There are undeveloped small pools across the UKCS

Total Reserves: 3.2bn barrels
Fields: <320



WoS:
20 fields
347mboe

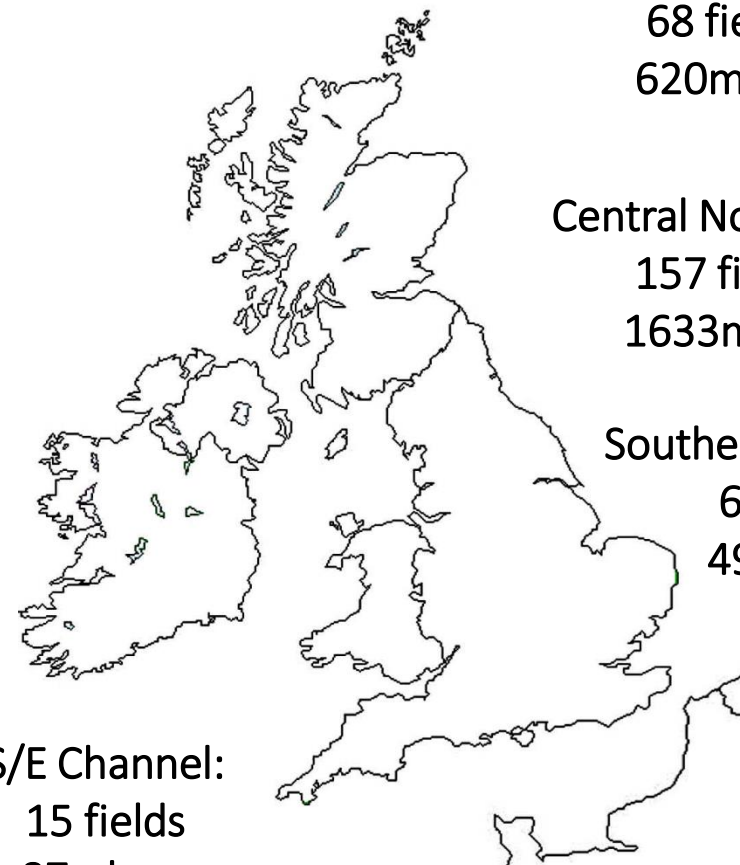


Northern North Sea:
68 fields
620mboe

Central North Sea:
157 fields
1633mboe

Southern North Sea:
64 fields
498mboe

IS/E Channel:
15 fields
87mboe



Source: Wood Mackenzie – Pools under 50mmboe

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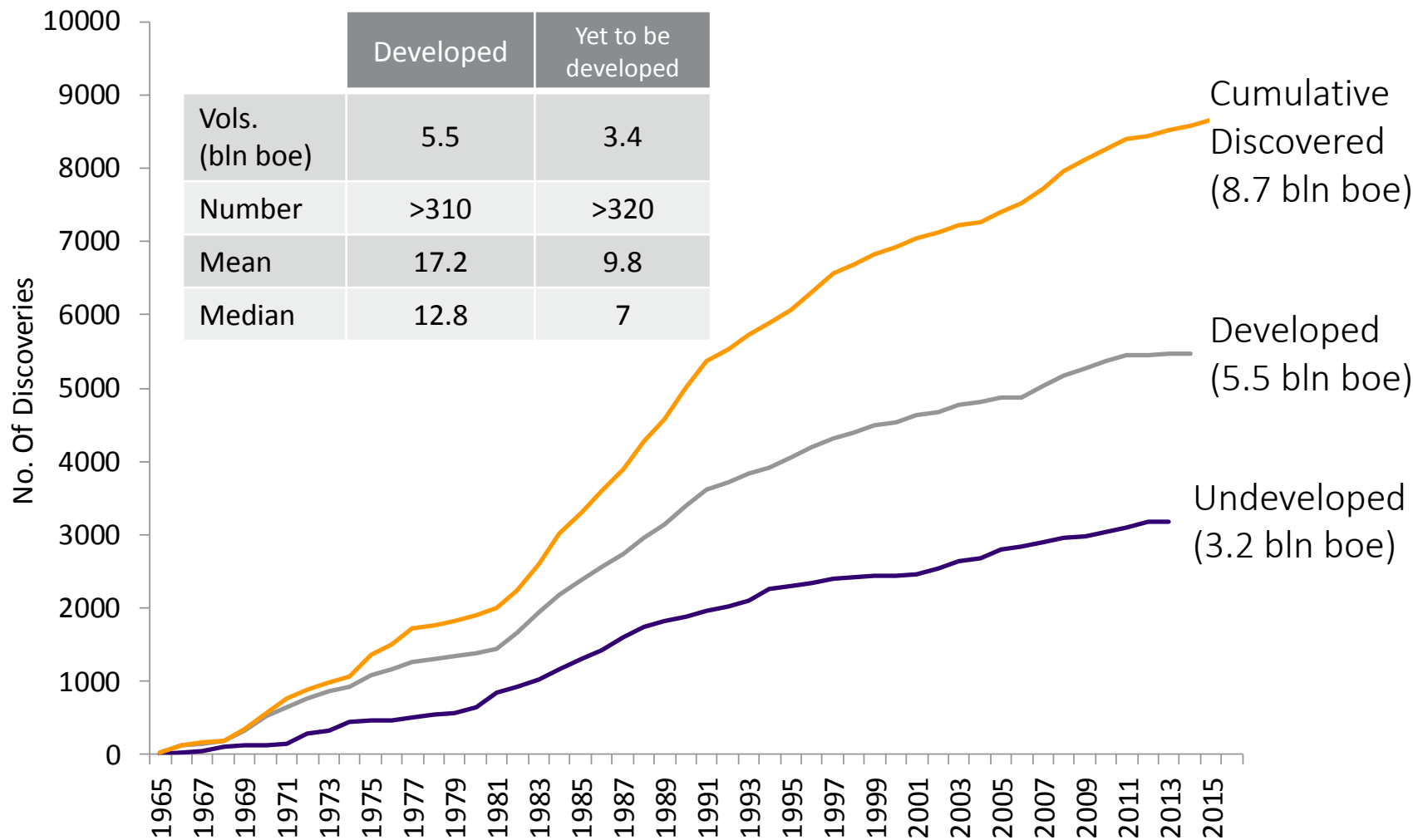
What do the Economics tell us

- Limited number studies
e.g. Syed Mustafa Amjed - NSRI / Aberdeen University paper 3 Aug 2015
 - 11-12 mln boe cut-off @ \$60
 - 9 mln boe cut-off 25% with cost reduction
 - Higher oil prices help

Limited value to play with – High risk demands high reward

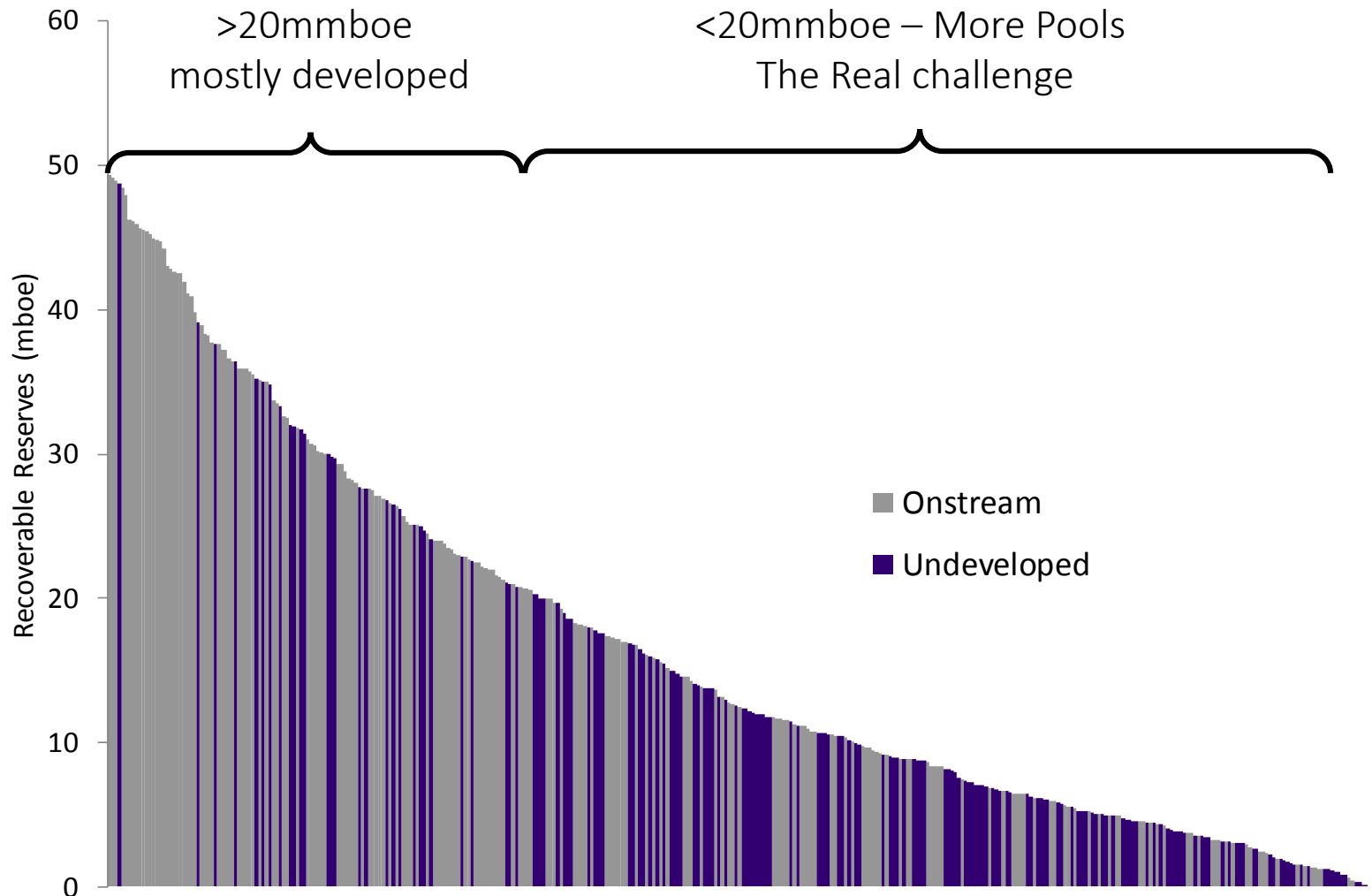
- Lots of them, but small
- Quick returns / pay-back
- Affordable opportunity
- Little competition to develop
- Growing a business
- Aggregate small pools to create critical mass
- Limited Development Options
Subsea, ERD, FPS
- Technically risky
 - Well / reservoir risk
- Commercially risky
- Reliant on third party infrastructure
- Single well developments / limited recovery potential
- Reservoir characteristics e.g. black oil vs. dry gas

Over the last four decades 5.5 billion boe of “small pools” developed, 3.2 bln boe yet move



Source: Wood Mackenzie – Pools under 50mmboe

3.2 billion barrels in over 320 fields to be unlocked

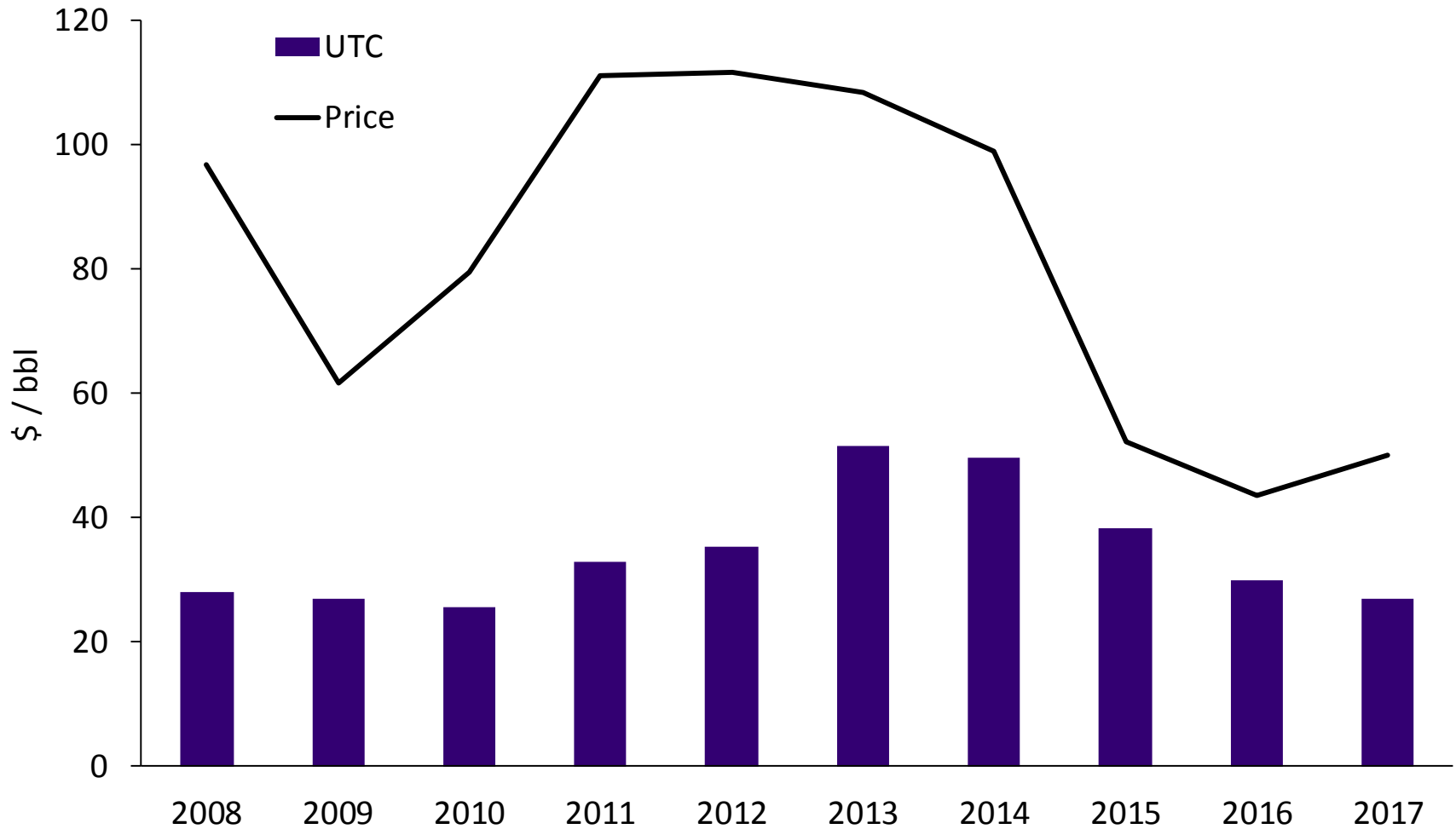


Source: Wood Mackenzie – Pools under 50mmboe

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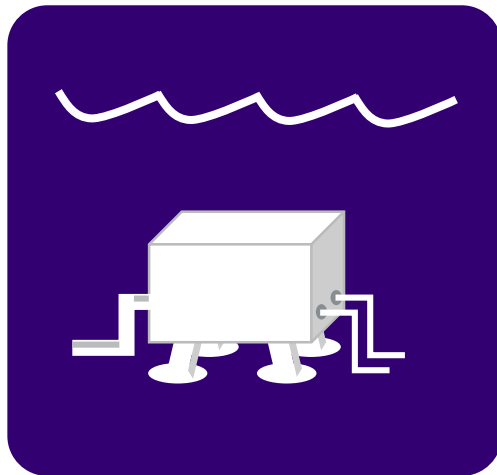
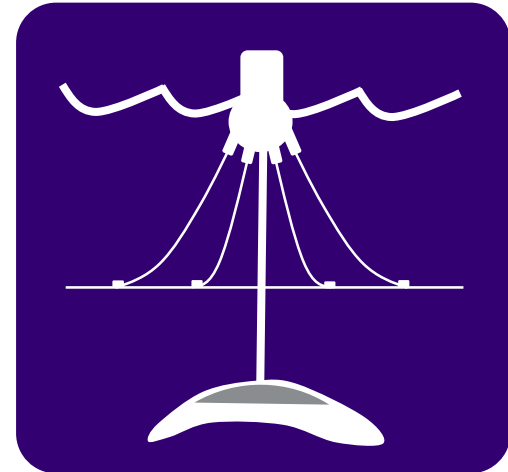
- Context / size of the prize
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The basin is at its best when Unit Technical Costs are less than third of oil price



Simple and Clear Message to market

Small Field Solutions
Required @ \$10-15/bbl
user costs



New Business Models

- Come and collect?
- Re-useable facilities?
- Less than \$20-25/bbl all up

Improved Risk/Reward

- Tax Drivers
- Well Cost
- Finance