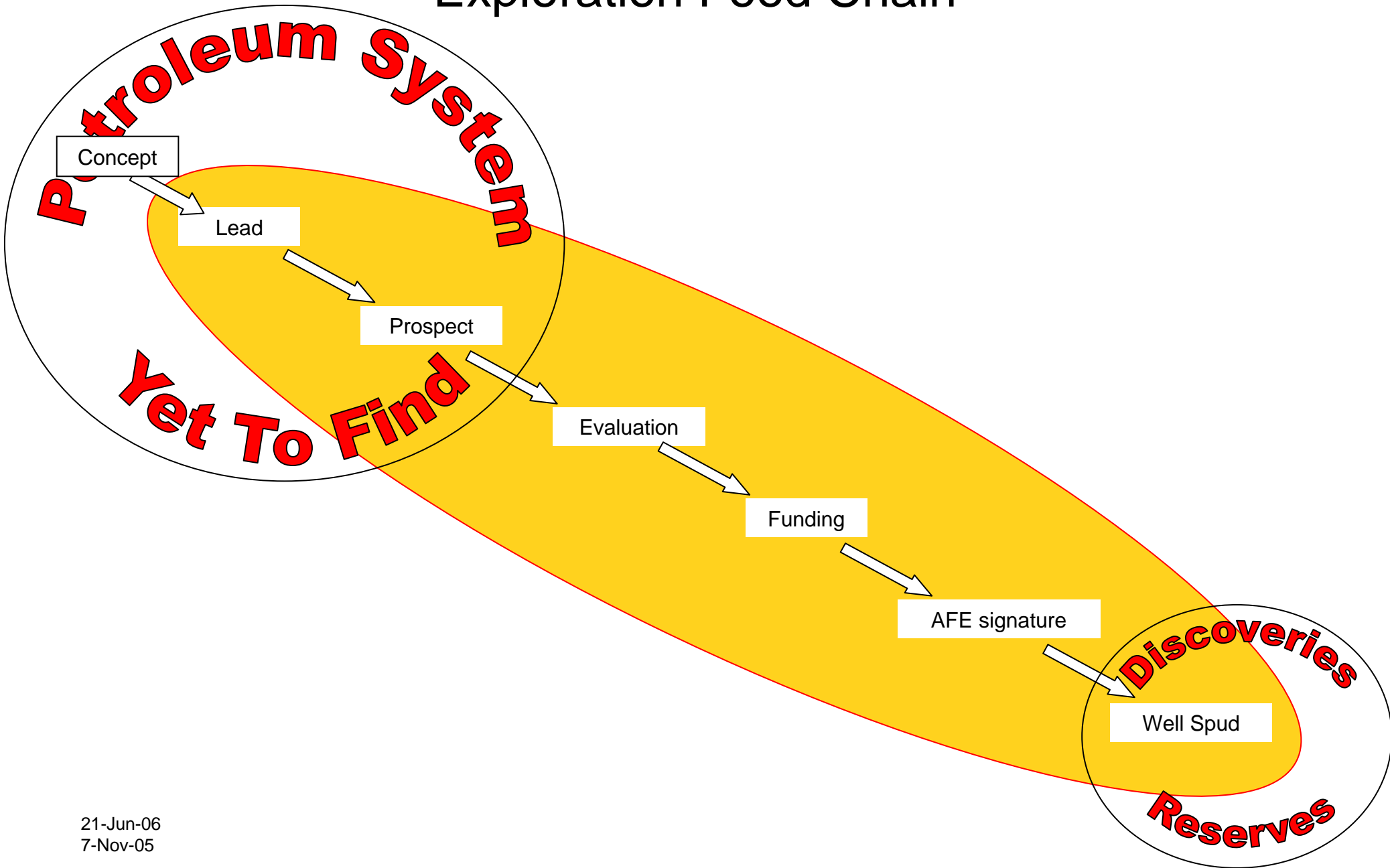


# Exploration Update

EAG – 2<sup>nd</sup> Dec 2005

# Exploration Food Chain



21-Jun-06  
7-Nov-05

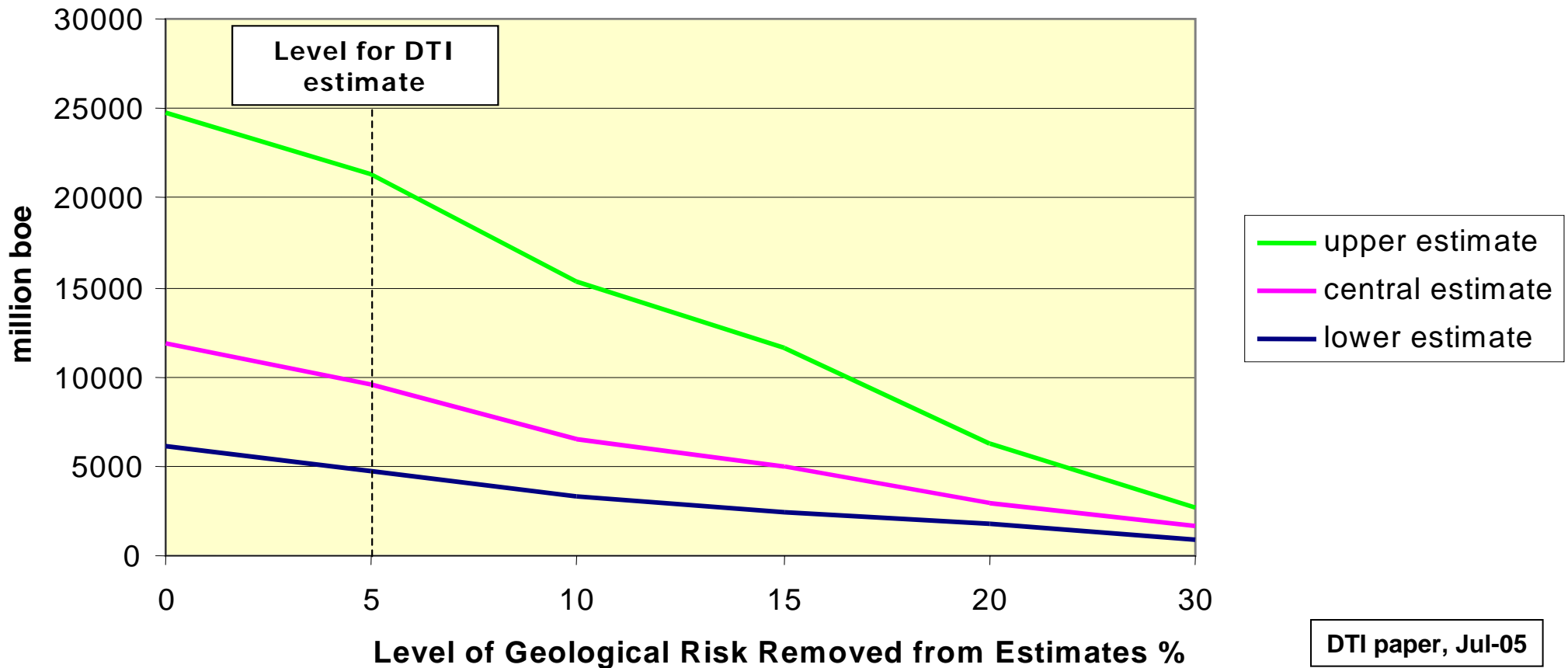
# Exploration Update

- **How big is the yet-to-find potential?**
  - Conceptually (Top-down)
    - Petroleum system methodology
    - Analogues
    - Basin maturity
  - Discretely (Bottom-up)
    - Leads and prospects
      - From licensees
      - In licensing rounds
      - BGS regional studies
  - Large range of uncertainty
    - Volumetric parameter ranges
    - CF/PoS is a statistical tool, not a discount rate
  - Several different ways of characterising the range, but it will always be a range

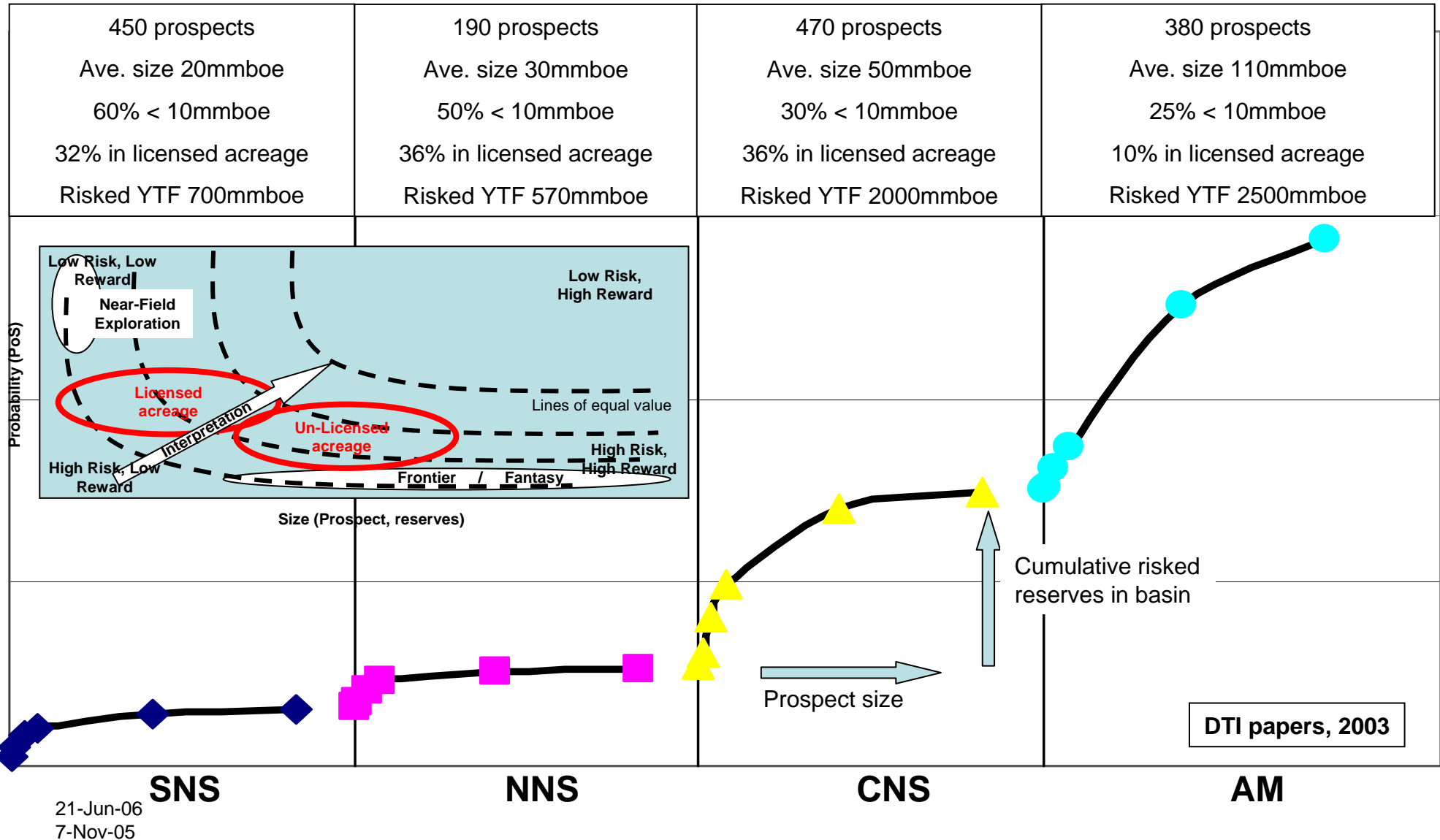
**Q. Is there sufficient potential to be exciting?**

# How big is the yet-to-find potential?

**Undiscovered Oil and Gas Resources in the UKCS  
shown at different levels of Geological Risk**



# Characterisation of Prospect Portfolio



# Characterisation of Prospect Portfolio

- Size distribution
  - Both the SNS and NNS are perceived as being “mature”
    - Many prospects and leads, but generally at the lower limits of commercial size
    - Modest remaining potential
  - The CNS and WoS/AM are perceived as being “immature”
    - Prospects and leads distributed across the spectrum of size
    - High remaining potential
- Risk spectrum
  - SNS/NNS/CNS
    - Smaller prospects are near-field analogues to existing discoveries/producers
    - Limited new play types, but generally higher risk, with significantly higher potential
  - WoS/AM
    - Limited testing of proven play types, with significant success
    - Range of untested play types, with inherent risk profiles
- Access
  - Much of the prospectivity lies in unlicensed acreage (2003 status)
  - The prospectivity is perceived as larger in unlicensed acreage
    - Less knowledge/data = less constraints (but higher risk)

# YTF Portfolio – Something for everyone

- Near-field
  - Low risk/low reward
  - High value to infrastructure/field owners
  - Majors may sell to smaller companies, but attractive as part of field/infrastructure portfolio
- Mature basin
  - Moderate risk/moderate reward
  - Low thresholds based on efficient access to infrastructure
  - Market for new entrants, small companies looking to grow
- New plays within existing basins
  - High risk, moderate to high reward
  - Thresholds reduced by access to existing infrastructure
  - New entrants, explorers, sufficient potential to attract/retain (some) majors
- Proven plays in frontier basins
  - Moderate risk, moderate to high reward
  - Thresholds high because of limited infrastructure, need to cover dry hole costs
  - Exploration companies, probably already in the basin, and with access to infrastructure
- New plays in frontier basins
  - Moderate to high risk, exposure to upside
  - Costly failure leg and high thresholds
  - Market to exploration companies, and those with significant financial resources and staying power

# DTI YTF Estimates

- DTI's estimates for ***technically recoverable undiscovered resources as at the end of 2004*** were presented in July 2005 as:
  - A **Low – Mid – High range** for the UKCS as a whole of **4.8 – 9.5 – 21.3 billion boe**, of which
    - 0.6 – 1.9 – 5.8 billion boe were West of Shetland and
    - 0.1 – 1.2 – 4.2 billion boe were West of Scotland, leaving
    - **4.1 – 6.5 – 11.3 billion boe in the North Sea, Irish Sea and onshore**

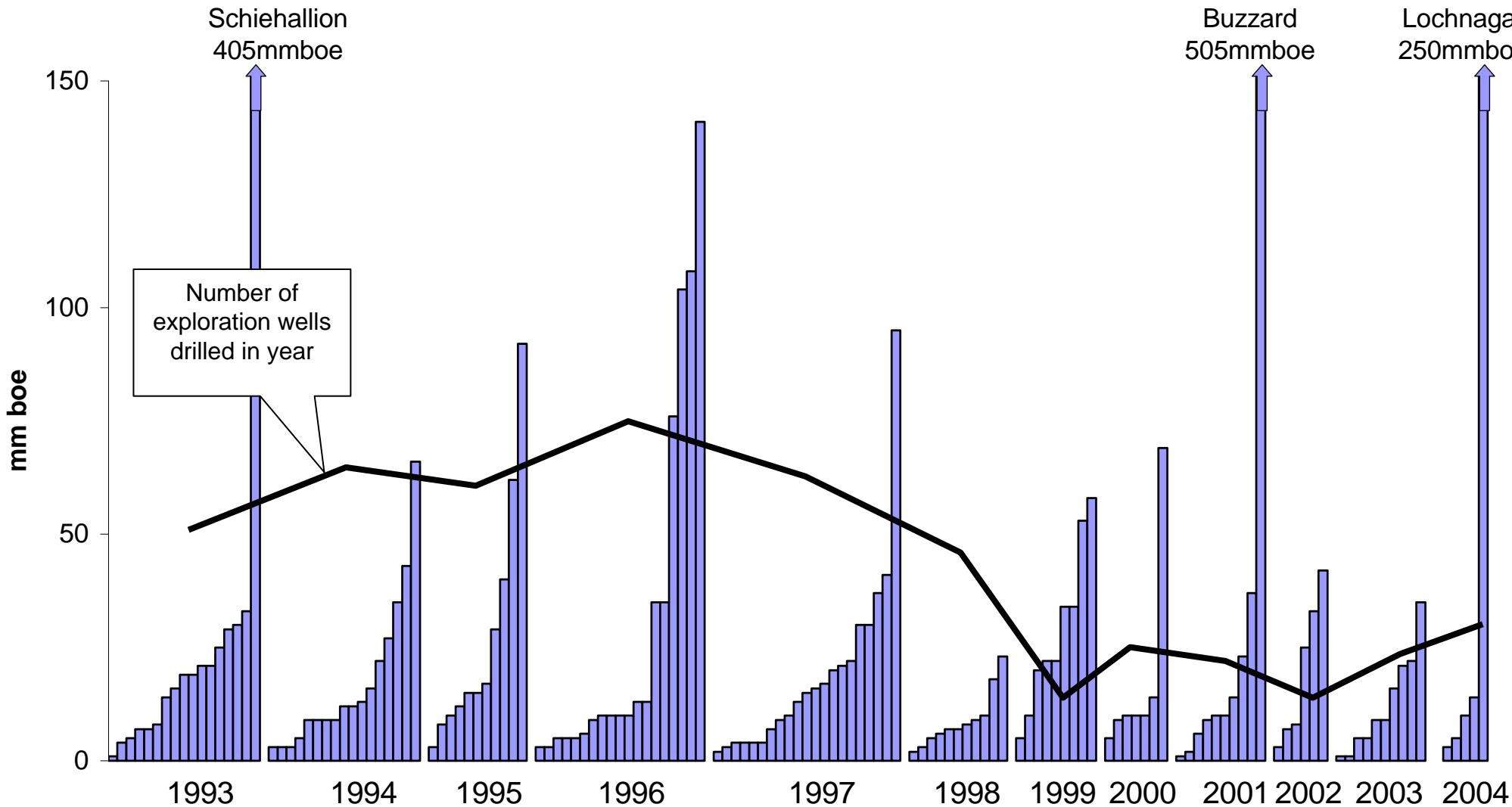
**A. There is sufficient potential YTF to pursue, and, if successful, make a significant change to the future of the UKCS industry**

# Are we on track to find/produce it?

- Number of wells drilled
- Success rate
- Volumes discovered
  - Number – technical and potentially commercial
  - Range/average
  - Total

Work in progress

# UKCS Discoveries 1993–2004



21-Jun-06  
7-Nov-05

Source: UKOOA analysis of Wood Mackenzie data, discoveries ranked by size within year; includes both commercial and technical reserves; there is no public estimate of Lochnagar (Rosebank) reserves by the operator (Chevron)

# What are we already doing?

- Stepwise approach to realising the potential of the UKCS
  - Technical evaluation
  - Capturing the first stage of value
  - Economic evaluation
  - Implementation
- Industry has control over some of the elements, regulator (HMG) has control over some of the pieces
  - Examine where regulator or industry could do more
  - Determine where regulator and industry are working in a truly collaborative way

# Regulator domain

**Petroleum System**  
**Yet To Find**

- CIDA
- Data Release
- DTI O&G team

Evaluation (1)

- Follow Blocks process
- Prospect Fairs
- Promote Licences
- Frequent Licence Rounds

- Sub-surface expertise, data and knowledge management are all core competences for upstream companies

Access/ownership

- Post-licence reports
- Reduced lead times and costs thru' ICoP

- Prospect Fair participation
- Increased licence uptake

Evaluation (2)

- Tax incentives

- Technology development reducing risks (e.g. seismic) and lowering costs (e.g. subsea)

Execution

- Internal funds
- External funds
  - AIM, farm-out

- Rig Club
- Supply Chain Effectiveness

# Proprietary domain

# Exploration Process - what are we already doing?

## 1. Evaluation (1)

- Data
  - CIDA
  - Data release
- Expertise
  - Proprietary
- Knowledge
  - Proprietary
  - DTI O&G

## 2. Focus/possession

- Access to prospectivity
  - Fallow Blocks process
  - Prospect Fairs
- “Ownership” of prospectivity
  - Promote Licences
  - Annualised Licence Rounds

## 3. Evaluation (2)

- Risk Mitigation
  - Knowledge cycle / post-licence reports
  - Technology for direct indications (mainly seismic)
  - Portfolio development and management
- Reducing Economic Thresholds
  - Technology development reducing costs
  - ICoP reducing tariffs, accelerating access

## 4. Execution

- Funding
  - Internal funds
  - External funds (e.g. farm-out or AIM)
  - Tax incentives
- Rig availability
  - Rig Club
  - Supply Chain Effectiveness

# Exploration Process - could we be doing more?

## 1. Evaluation (1)

- Data
  - Access to existing data
    - CIDA, data release – shorten retention time (especially spec. seismic)
  - New acquisition
    - Further tax breaks on acquisition of seismic, with release into public domain
- Knowledge
  - Post-licence reports
    - Full public access (via DTI website)

## 2. Focus/possession

- Access to prospectivity
  - Fallow Blocks process
  - Prospect Fairs
- “Ownership” of prospectivity
  - Promote Licences
  - Extension of Promote licences
  - Annualised Licence Rounds

## 3. Evaluation (2)

- Reducing Economic Thresholds
  - Closer scrutiny and implementation of ICoP principles

## 4. Execution

- Funding
  - Tax incentives
- Rig availability
  - Rig Club
  - Supply Chain Effectiveness