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# Planning for Shale Gas and Oil

Mary Campbell and Gordon Halliday

Derbyshire County  
Council

22 February 2017



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# Introductory remarks

Mary Campbell



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# Who are we?

- Mary - Planning Director Stephenson Halliday – mineral planning specialists
  - Gordon - former head of planning in a County Council, now an independent planning consultant
  - Involved in Lancashire shale gas public inquiry
  - Facilitated workshops on shale gas and oil for PAS mainly to local authority officers in March 2016
  - Commissioned by PAS to facilitate workshops for councillors in areas that shale gas or oil may be developed
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# Housekeeping



# What is Planning Advisory Service for?

*“The Planning Advisory Service (PAS) is part of the Local Government Association. The purpose of PAS is to **support local planning authorities to provide effective and efficient planning services, to drive improvement in those services and to respond to and deliver changes in the planning system**”*

(Grant offer letter for 2013-14)

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# Key facts about PAS



- Started in 2004
  - PAS is part of the LGA
  - Part funded by DCLG to cover some areas of our work
  - 5 staff. Supplier framework. Peer community
  - Some areas of work are subsidised.
  - Non-judgemental. Not inspectors. Not government.
  - Respond to reform. Keep you current.
  - Support, promote, innovate
-

# Programme

- Objective for session is to increase your understanding of shale gas and oil exploration and extraction and to provide a forum for you to debate the planning issues
  - Potential for shale gas and oil as a source for energy supply in the UK
  - Legislation, policy and guidance
  - Stages of development and roles of other regulators
  - Predetermination and the risk of challenge
  - Lessons from other MPAs
  - Concluding remarks
  - Breakout sessions at appropriate points
  - Questions throughout
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# The potential for shale gas and oil to contribute to energy supply in the UK

Gordon Halliday



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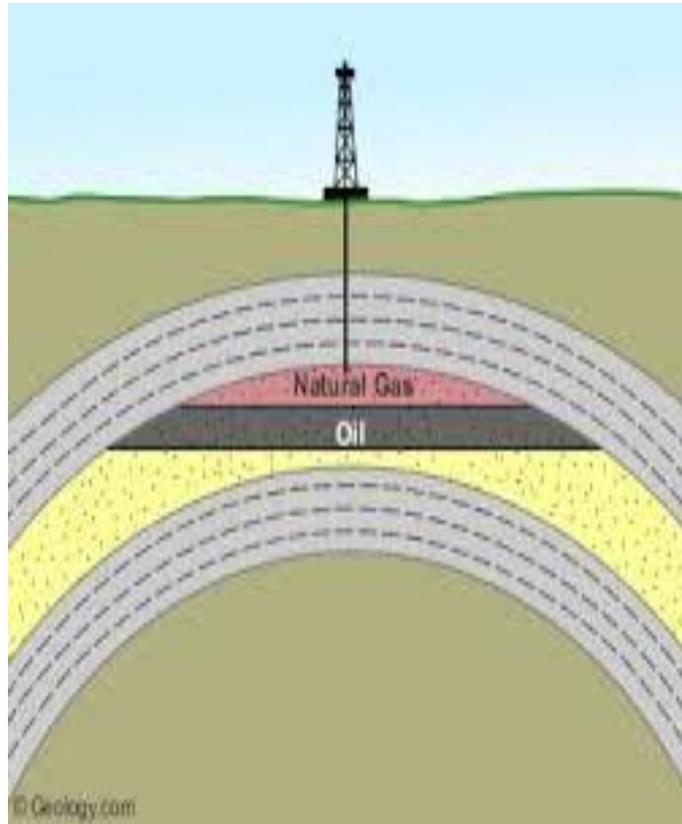
# Oil and Gas in Derbyshire

- Long history of limited conventional production of oil and gas production including UK's first mainland oilwell at Tibshelf/Hardstoft in the North Derbyshire coalfield
  - Large parts of the County are licenced for oil and gas production
  - No shale applications yet but Ineos in pre-application discussions with DCC on a number of sites
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# What is Shale Gas/Oil?

- Shale is formed from muddy sediments rich in organic matter deposited in seas millions of years ago
  - As these sediments were buried, they were heated and turned into rock and the organic matter was converted into oil and gas
  - These rocks are often source rocks for conventional oil and gas fields but have low permeability so it is difficult to extract oil or gas from them directly
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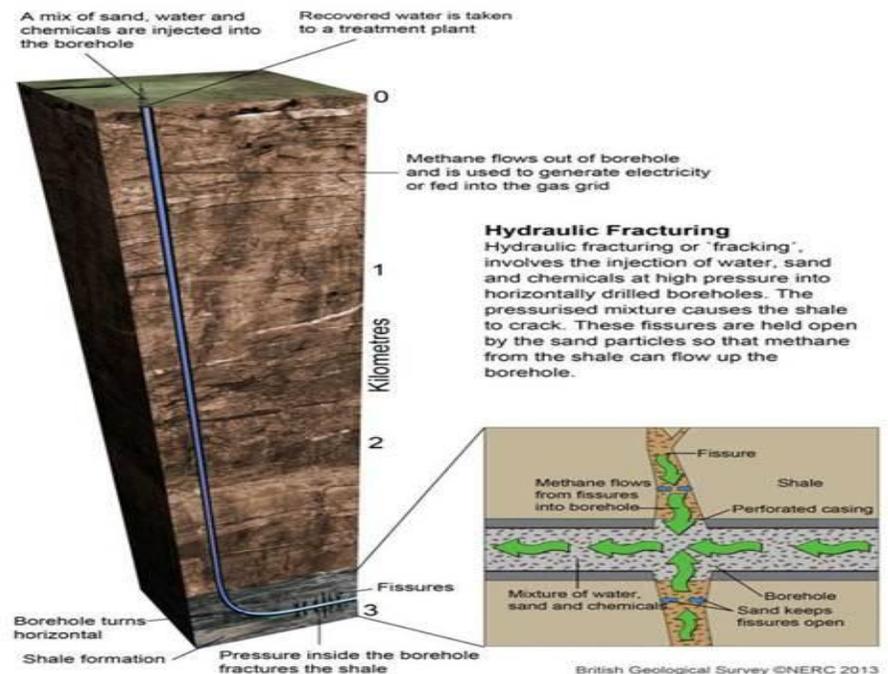
# Conventional oil and gas in the UK



- Free oil and gas trapped in porous reservoirs (usually sandstone or limestone)
- Relatively easy to extract
- Extracted in UK for over 100 years
- Around 2100 wells have been drilled, some hydraulically fractured
- Current production is 20,000 barrels of oil per day from 120 sites throughout the UK

# Unconventional Gas and Oil

- More than 2.5 million wells ‘fracked’ worldwide during last 60 years
- ‘Fracking’ or hydraulic fracturing involves injecting water, sand and non-hazardous chemical additives at high pressure into the shale rock formation to extract gas trapped in the rocks. 99% Of the mixture is water and sand.
- Accounts for 25% of natural gas production in USA
- May be able to be extracted economically in UK as a result of improved drilling technology – horizontal drilling
- Today not looking at coalbed methane or tight gas which is a very different process

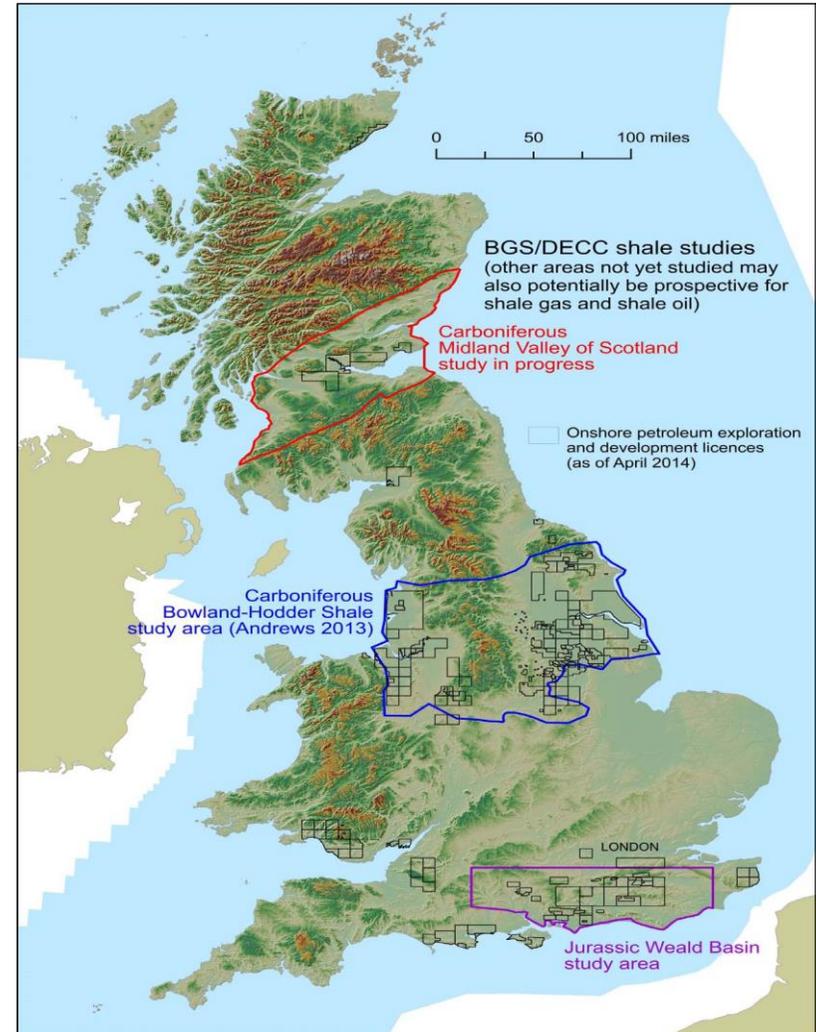


# What is hydraulic fracturing (fracking)?

- Water, sand and additives pumped at pressure into the shale opening up hairline fractures to allow gas to flow from the shale. 99% is water and sand
  - Additives are non-hazardous and require prior approval from EA
  - Gas flows from the well together with some fracking fluid known as flow-back fluid
  - Gas flared during exploration, flared or piped off site during appraisal and piped off site during production
  - Aim of fracking is to maximise the amount of gas extracted
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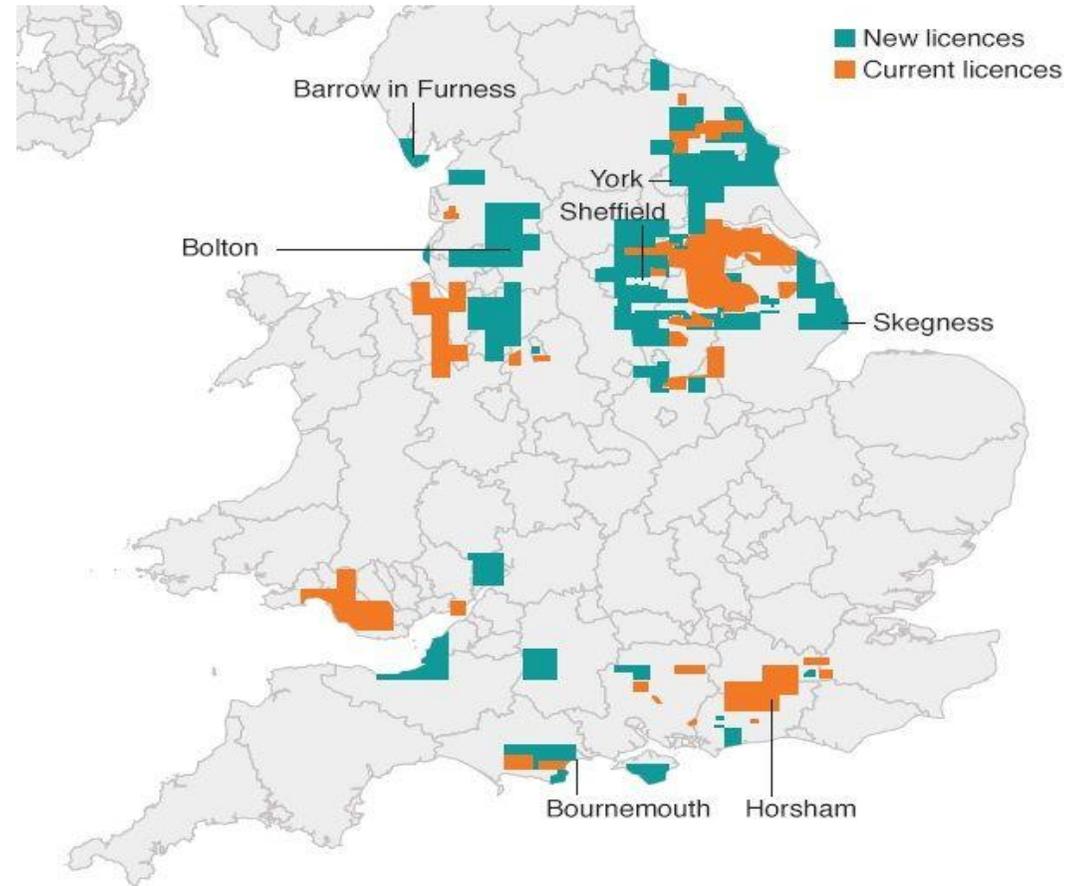
# Shale Gas and Oil in the UK

- Resources believed to exist throughout the UK but principally in Northern and Central England, Southern England (shale oil) and Central Scotland (gas and oil)
- BGS has assessed the amount of gas and oil potentially available
- BGS estimate the volume of gas resources in the Bowland Hodder shale in Northern England is some 1300 trillion cubic feet (central estimate)
- No wells currently in production in UK
- Start of process is the award of a Petroleum Exploration and Development License (PEDL) to explore issued by OGA.



# 14<sup>th</sup> Onshore Oil and Gas Licensing Round

- Oil and Gas Authority (OGA) awarded 159 blocks to companies in December 2015
- 75% of the blocks relate to shale oil and gas
- PEDLs grant the licensee exclusive rights for exploration, appraisal and extraction (subject to necessary consents)
- Successful companies included Cuadrilla, IGAS and INEOS



Source: Oil and Gas Authority

# Government vision for energy supply

- Legacy of aging often unreliable plant with a higher proportion of electricity from coal in 2014 than 15 years earlier despite a huge growth in renewables.
  - Need to replace coal fired power stations.
  - Nuclear power and offshore wind have central roles to play but challenge is to deliver these technologies at low cost.
  - Gas stations produce less carbon emissions than coal and also have a key role.
  - Energy efficiency and conservation are vital.
  - Exploration, testing and development of shale gas and oil whilst maintaining the very highest safety and environmental standards is a priority
-

# Summary

- Conventional on-shore oil and gas extraction is a long established industry in the UK and in Derbyshire
  - Shale gas and oil is a potentially significant resource but low level of activity to date in UK and none in Derbyshire
  - Exclusivity licenses have been awarded across the country for exploration and development
  - Government considers that shale oil and gas could potentially contribute to future energy supply
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# Legislation, policy, guidance and material planning considerations

Mary Campbell



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# National Planning Policy



## NPPF (March 2012):

- **Para 14** Presumption in favour of sustainable development
  - **Para 142** Important that there is a sufficient supply of material to provide the ...energy...that the country needs
  - **Para 144** LPAs should give great weight to the benefits of mineral extraction, including to the economy ...(and) ensure...that there are no unacceptable adverse impacts on the natural and historic environment, human health, residential amenity
  - **Para 147** When planning for...unconventional hydrocarbons, MPAs should clearly distinguish between the three phases of development (exploration, appraisal and production) and address constraints on production and processing within licensed areas
  - **Para 122** advises Planning Authorities to focus on whether the development itself is an acceptable use of land, and the impact of the use, rather than the control of processes or emissions where these are subject to approval under pollution control regimes.
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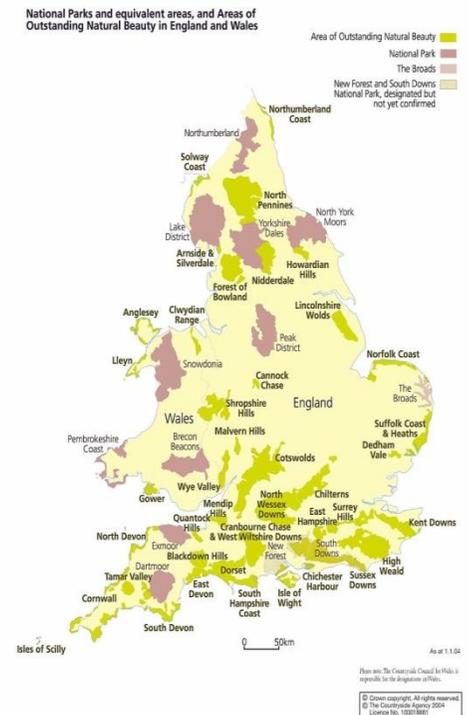
# National Planning Guidance

## Planning Practice Guidance

- **Para 91** ...there is a pressing need to undertake exploratory drilling to assess whether or not there are sufficient recoverable reserves to allow full scale production on an economically viable scale.
  - **Para 106** Local Plans should include PEDL areas on Proposals Maps and develop criteria-based policies for each of the exploration, appraisal and production phases of hydrocarbon extraction. These policies should set clear guidance and criteria for the location and assessment of hydrocarbon extraction within the Petroleum Licence Areas
-

# Infrastructure Act 2015

- Most provisions came into force on 12 April 2015. Section 50 (safeguards) came into force on 6 April 2016.
- Simplified procedures.
- Placed environmental safeguards on a statutory footing (EIA, protected areas, monitoring etc.)
- Approved the protected areas in which hydraulic fracturing is prohibited – depths above 1200 metres in National Parks, the Broads, AONBs, World Heritage Sites and areas that are most vulnerable to groundwater pollution (source protection zones 1)



# Written Ministerial Statements

- The **Written Statement on Shale Gas and Oil issued by Amber Rudd on 16<sup>th</sup> September 2015** is a material consideration:
- clear need to explore and test our shale potential... whilst maintaining the very highest safety and environmental standards
- emphasised the importance of public engagement
- Importance of involvement of other regulators.
- regulators will enforce safety, environmental and seismic regulations effectively



# Written Ministerial Statements

- £0.8m shale support programme - providing funding to MPAs in 2016/17 to enable the local determination of planning applications for shale gas and oil.
  - Amendment to PD Rights to allow drilling of boreholes for groundwater monitoring (introduced March 2016)
  - New PD Rights for drilling boreholes for seismic investigation and mine working (introduced March 2016)
  - Aim is to speed up delivery of essential monitoring information
  - Planning applications to be dealt with within statutory time frames (16 weeks for EIA development)
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# Shale Wealth Fund Consultation

- HM Treasury Consultation 2016
  - Up to £1 billion of funding could be raised from 10% of tax revenues from shale gas production
  - a proportion of these tax revenues could be paid out to communities who host shale activity
  - Wealth fund additional to any benefits provided by industry through its community benefits package (£100,000 per well site where fracking takes place; plus 1% revenues at production stage)
-

# Clear Government Message

- Strong government support for exploration, testing and exploitation of shale gas and oil resource through national planning policy and ministerial statements
  - Government commitment to highest safety and environmental standards
  - Processes and resources to assist MPAs to decide applications within statutory timeframes
  - Assumption that regulators will do their job and enforce safety rigorously
  - Some changes to permitted development rights to help simplify the regulatory process
  - Shale Wealth Fund would provide local financial benefits
-

# Development Plan

- Planning applications must be determined in accordance with the Development Plan unless material considerations indicate otherwise
  - In many areas Development Plan is a mix of plans prepared under the old (pre 2004) system and the new post 2004 system
  - Shale gas is a fairly recent phenomenon and is unlikely to be specifically addressed in all adopted plans
-

# Development Plan – Derbyshire

- Derby and Derbyshire Minerals Local Plan was adopted in 2000 and amended in 2002
  - New Minerals Local Plan is being prepared
  - A paper ‘Towards a Strategy for Hydrocarbons’, with a supporting paper “Unconventional Gas – Shale Gas - were published for consultation purposes in December 2015
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# Environmental Considerations (1)

- **Water use for hydraulic fracturing** – sources may be mains water, surface water or groundwater. A hydraulic fracture typically uses 10 to 30 million litres per well. (10-30,000m<sup>3</sup>).
  - **Waste management** – drill cuttings disposed to landfill, flowback fluid requires specialist water treatment off site.
  - **Risks of contamination**
    - **Groundwater contamination** very unlikely due to depth of fracking operations (2-3 km). Controlled by regulated well design and construction.
    - **Surface contamination** to water and soils is possible. Controlled by impermeable banded well pads, flowback water containment and good working practices
-

# Environmental Considerations (2)

- **Aerial emissions** – dust from construction activity; particulates from heavy goods vehicles and generators; fugitive gas from flowback and flaring. Controls are containment and capture of gas, good working practices and regulation
  - **Seismicity** – earthquakes felt at surface are rare. Traffic light system introduced after Preece Hall event in Lancashire in 2011
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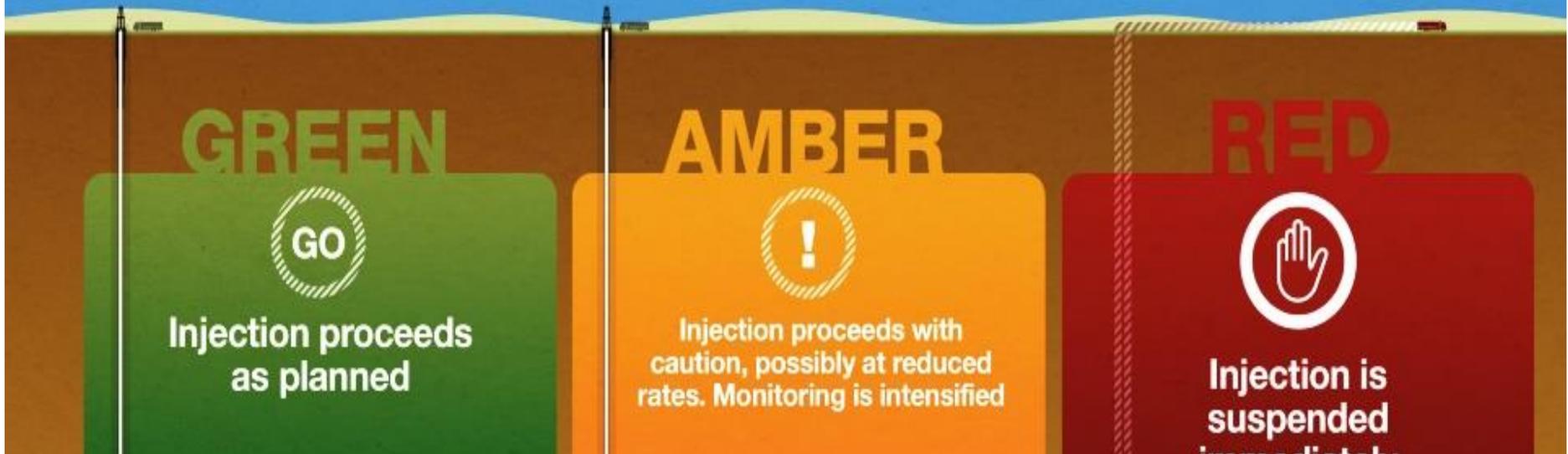
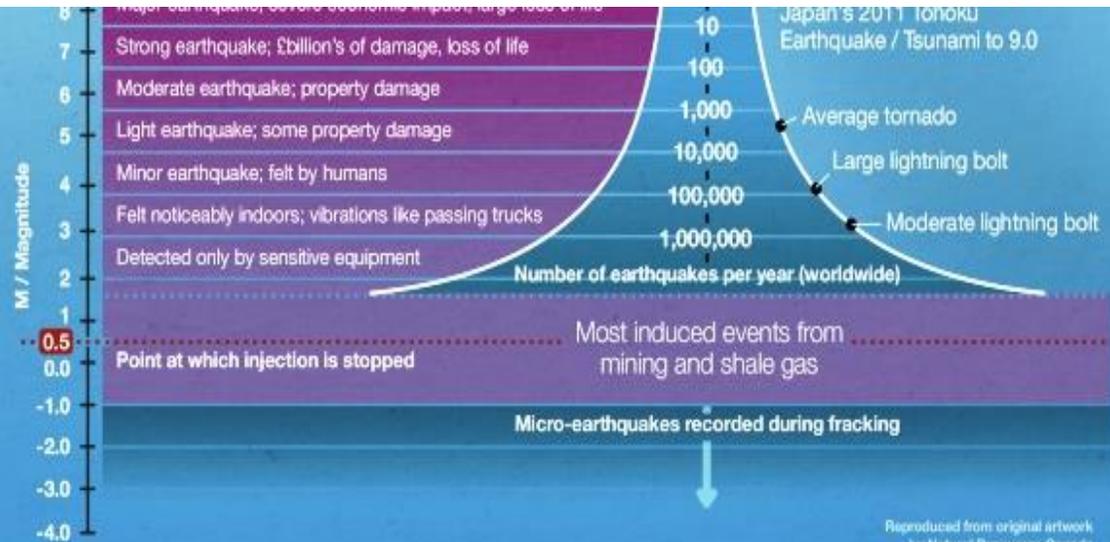
# Traffic Light System

## Monitoring system

Controls are in place so that operators will have to assess the location of faults before fracking, monitor seismic activity in real time and stop if even minor earth tremors occur.

If a magnitude greater than M **0.5** (0.5 on the Richter scale) is detected operations will stop and the pressure of the fluid will be reduced. This level should limit further earthquakes, known as 'induced seismicity', which may happen after the pumping is completed.

*\*subject to review and may change.*



# Environmental Considerations (3)

- Transport – HGVs for site creation and removal and waste removal
  - Noise, including noise from 24 hour drilling operations
  - Landscape and Visual Amenity including illumination
  - Ecology and Historic Environment
  - Climate change
  - Health and well being
  - Duration of activities
-

# Material Considerations (1)

- Material considerations include issues such as impacts on local communities, national planning policy/guidance/ministerial statements and the need for the development.
  - Public opposition per se and the number of objections are not material considerations
  - Community benefits offered by the industry (£100,000 per well site) not a material consideration
  - Property prices are not a material consideration
-

# Material Considerations (2)

- Public concerns and perceptions can be material if they relate to a planning matter, are objectively justified and have land use consequences
  - If public concern is not justified and supported by evidence it cannot be a reason for refusal
-

# Summary

- National planning policy and guidance, reinforced by Ministerial Statements, support the exploration and development of shale oil and gas
  - Infrastructure Act has simplified the procedure for drilling but also introduced important safeguards
  - Planning applications must be determined in accordance with the Development Plan unless material considerations indicate otherwise
  - Public concerns can be material but only if they are land use related and justified.
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**Break-out session:  
What issues should the Planning  
Committee consider in its decisions  
and what issues are not legitimate  
considerations?**



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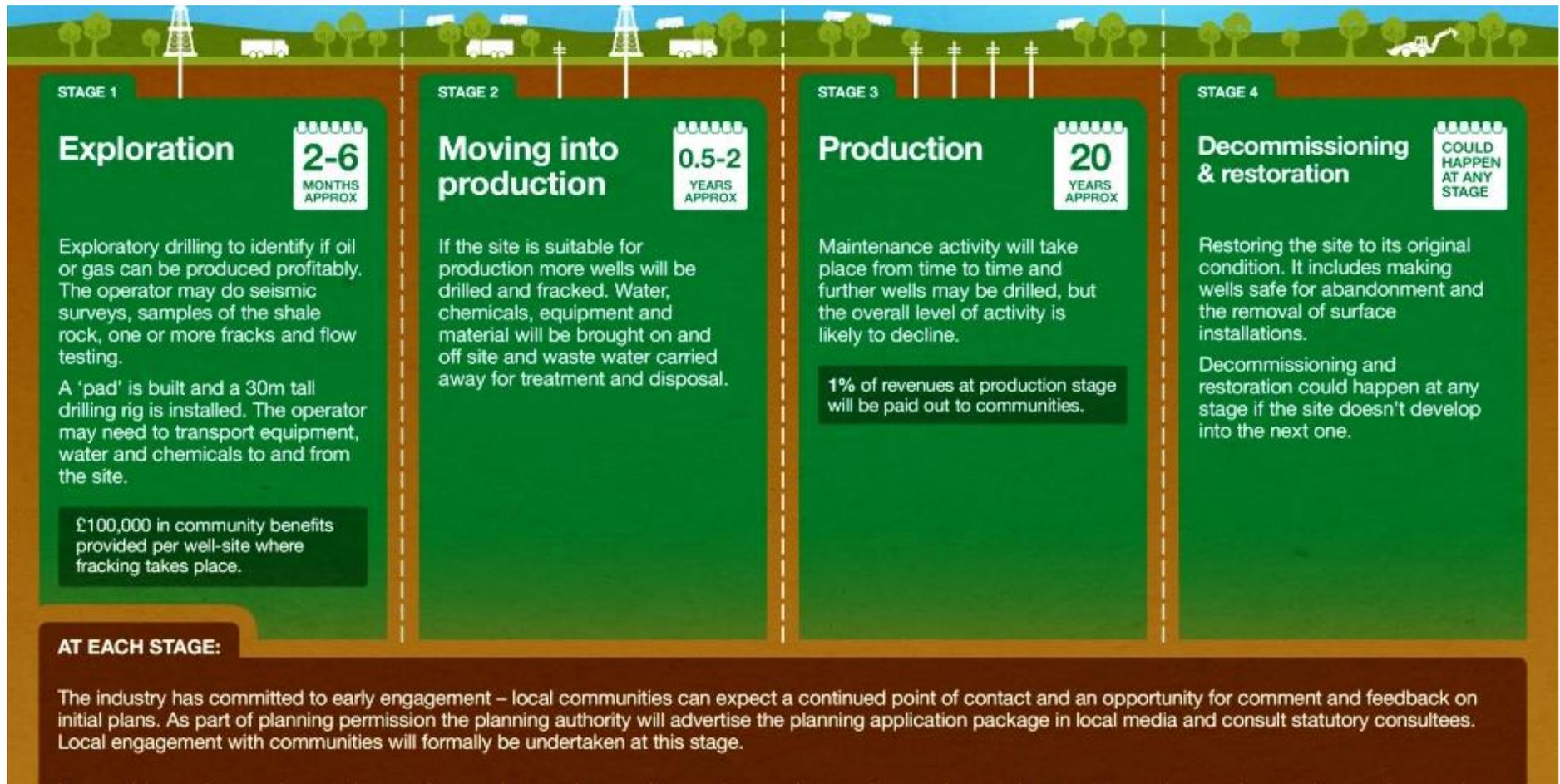
# Stages of development, the awards and consent process and the roles of the different regulators

Gordon Halliday



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# Stages of shale gas and oil development



# Shale Gas Exploration Site

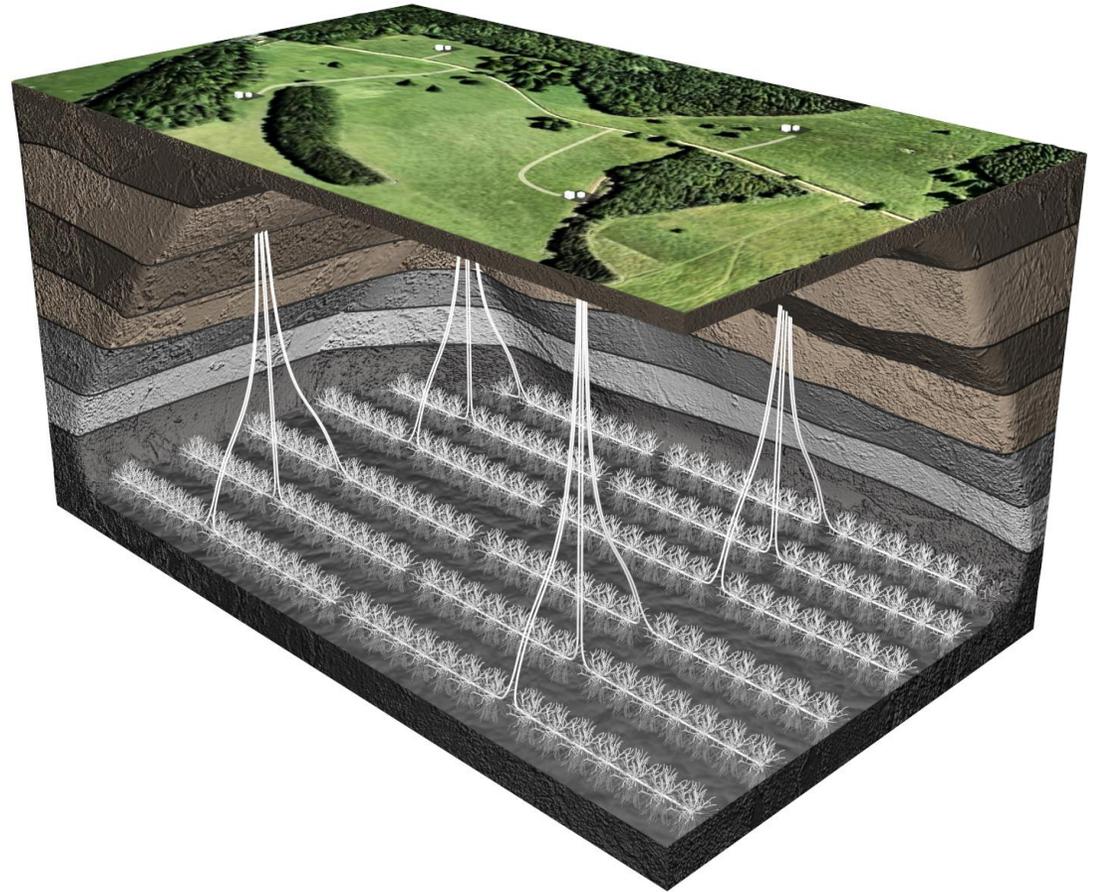


# Hypothetical Production Site

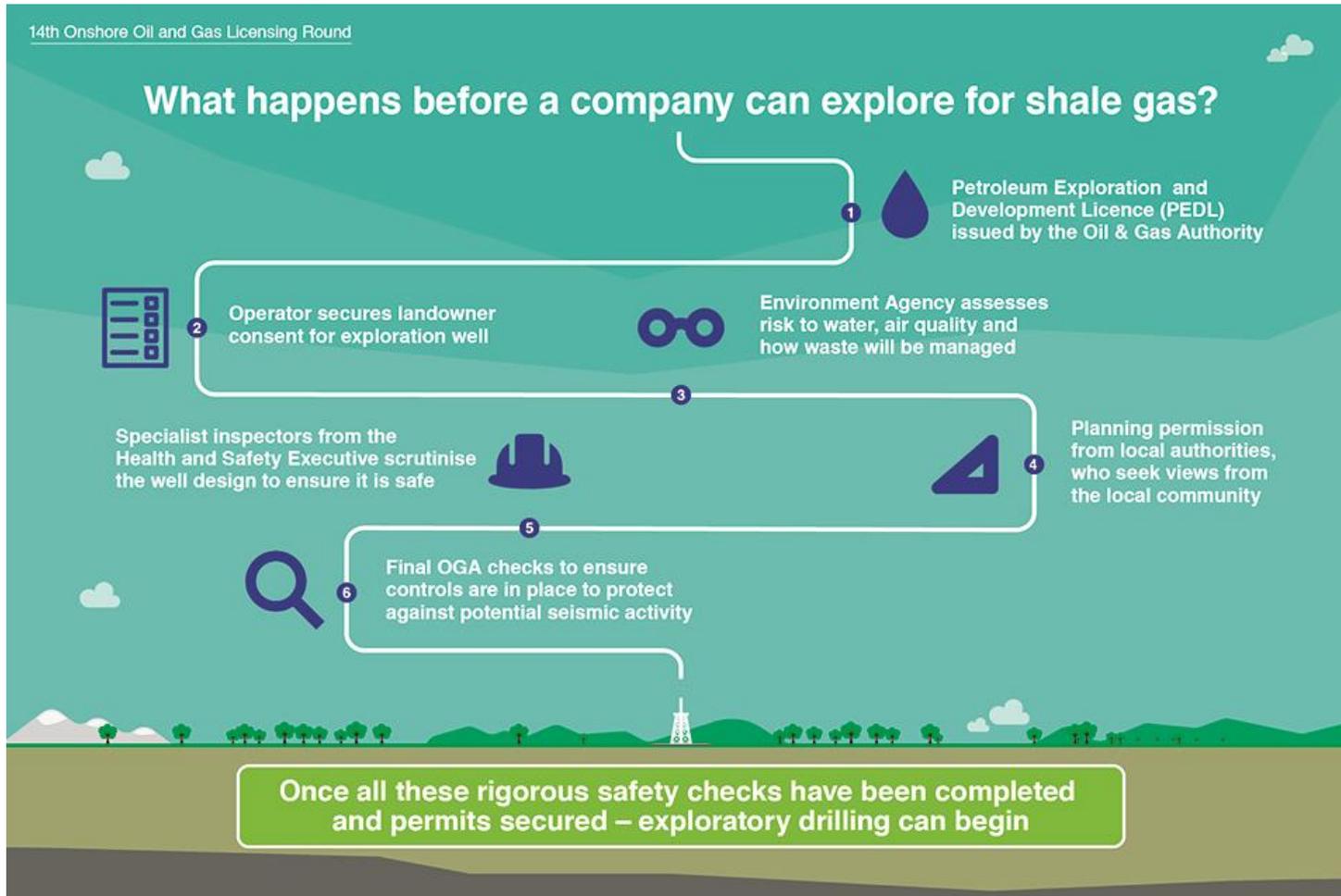


# Hypothetical Production Area

- Small surface well pads
- Extraction from large underground area through horizontal drilling
- Each well operational for possibly 20 years



# Award and Consents Process



# Regulators and other interested bodies

- Large number of bodies and organisations involved in the consents and regulatory process
  - Mineral Planning Authority
  - Oil and Gas Authority
  - Environment Agency
  - Health and Safety Executive
  - Coal Authority
  - British Geological Survey
  - Public Health England
  - Planning Inspectorate or SoS
-

# Mineral Planning Authority

- Prepares Development Plan
  - Screens for and scopes EIA
  - Carries out consultation with statutory and non-statutory bodies and the public
  - Determines planning applications
  - Monitors site operations
  - Oversees restoration
-

# Oil and Gas Authority

- Created in April 2015 and from 1 October 2016 is a Government Company with SoS for Business, Energy and Industrial Strategy the sole shareholder
  - Statutory objective is to maximise the recovery of the UK's oil and gas resources
  - Issues Petroleum Exploration and Development Licences (PEDL)
  - Requires Environmental Risk Assessment
  - Assesses operator competency and financial viability
  - Grants consent to drill, to fracture and for extended well test
-

# Environment Agency

- Key regulator for the onshore oil and gas industry
  - Responsible for issuing various environmental permits and consents
  - Permit for all extractive wastes including drill cuttings, spent drilling fluids, returning fracturing fluids, waste gases etc
  - Require a waste management plan that characterises wastes, describes risks, sets out mitigations etc
  - Deal with availability and protection of groundwater including evaluating risks and mitigation measures
  - Requires a notice of intention to drill
  - Regulates the flaring of waste gas, naturally occurring radioactive substances and flood risk considerations
-

# Other Regulators and Organisations

- **Health & Safety Executive** – operates closely with EA, requires a well examiner scheme, approves well design, requires advance notice of intention to drill
  - **Coal Authority (CA)** – requires permit if drilling encroaches on coal seams
  - **British Geological Survey (BGS)** – informed of intention to drill
  - **Public Health England** – advises on the public health impacts of shale gas extraction
  - **Planning Inspectorate or SoS** – determines planning appeals
  - **UKOOG** – represent the onshore oil and gas industry
-

# Planning Practice Guidance

- **Para 110** Identifies issues which are covered by other regulatory regimes and advises that MPAs should rely on the assessment of other regulatory bodies
    - Seismic monitoring, flaring, operation of surface equipment, treatment of waste, chemical content of fluid, well design, construction and integrity and decommissioning.
  - **Para 112** Before granting planning permission MPAs will need to be satisfied that these issues can or will be satisfactorily addressed by taking advice from the regulatory body
-

# Summary

- Four main stages in developing a site – exploration, appraisal and testing, production, decommissioning and restoration
  - Awards and consent process involves a wide range of bodies
  - Robust regulatory regime has been established
  - Assumption that regulators will do their job and enforce safety rigorously
  - Interface and good communication between the MPA and the Regulators are critical
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**Break-out session:  
Who does what and are the  
respective roles and responsibilities  
of the various regulators clear?**



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# Predetermination and the risk of challenge

Mary Campbell



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# Shale gas is controversial



# Predetermination or predisposition

- Decision makers are entitled to be ***predisposed*** to particular views
  - ***Predetermination*** is when a decision maker has a closed mind to any other possibility beyond their predisposition such that they are unable to properly assess an issue
  - Councillors must take great care when making statements in advance of the determination of planning applications as there is a risk that they can be misinterpreted or taken out of context
-

# Guidance on predetermination

- As a councillor working in a political environment do not be afraid to express your views on an issue BUT
  - Avoid giving the impression that you have made up your mind before hearing the officer report and any representations at the Committee meeting
  - If you comment in advance use words that make it clear you have yet to make up your mind
  - Be particularly careful in any discussion with developers or objectors or meetings at which minutes are not recorded, as there is a risk that you will be misrepresented or your comments will taken out of context
-

# Decision contrary to officer recommendation

- Planning Committee need not accept the officer recommendation to approve or refuse a planning application
  - But decision must be based on evidence
  - Local Authorities usually have a protocol to be followed when the Committee makes a decision contrary to the officer recommendation
  - When the Committee makes a decision contrary to the officer recommendation important that it identifies the material considerations leading to a decision to approve or the reasons for any decision to refuse
  - Risk of challenge greater with such cases
-

# Appeal

- Only the applicant can appeal
  - No 'third party' rights of appeal
  - Public inquiry likely to be held
  - Appellant can apply for costs if considers decision to have been unreasonable
  - Decisions on applications heard at conjoined public inquiries in Lancashire now received
-

# Legal challenge

- Anyone 'of sufficient standing' can challenge a planning decision in the courts
  - Cannot challenge whether a decision was right or not, only whether the regulations and procedures were properly followed
  - Two principal means of legal challenge – judicial review and statutory challenge (latter applies to decision by Secretary of State following an appeal or call in)
-

# Judicial Review

- Judicial Review is exercised by High Court judges
  - Court cannot disagree with the merits of the planning decision
  - Can either quash, prevent or require a decision or clarify the law
  - Application for judicial review must be made within 6 weeks of decision notice being issued
  - North Yorkshire decision subject to judicial review but High Court ruled that the Council had given proper regard to the issues raised by the proposal
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# Lessons from Other MPAs

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# PAS Case Study Project

- Aim is to identify good practice from the experience of 4 MPAs that have dealt with shale gas/oil planning applications
    - Lancashire – Preston New Road and Roseacre Wood
    - North Yorkshire – Kirby Misperton
    - Nottinghamshire – Springs Road, Misson and Retford
    - West Sussex – Balcombe and Wisborough Green
-

# Areas of Good Practice (1)

- Early dialogue with PEDL holders – benefits both MPA and the industry
  - Early community engagement and pre-application discussions
  - Consider entering into a Planning Performance Agreement
  - Keep local communities informed and web site up to date with information
  - Train members and keep them informed
-

## Areas of Good Practice (2)

- Administrative systems and staffing levels must be fit for purpose
  - Development Team approach
  - Twin track environmental permitting applications and the planning application
  - Robust FoI and committee procedures
  - Community Liaison Group as an effective link between all interested parties
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# Final Questions and Concluding Remarks



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# PAS needs your feedback

- PAS need to know what you think. On reflection, was today actually useful ?
    - 10 minutes of feedback in return for £100s of support
    - We read all comments and use your ideas to change what we do and how we do it
  - Our board use this to decide what we do with our grant. If we don't get positive feedback we are unlikely to continue
  - Please complete the feedback/evaluation form
-

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### New event series - Understanding the economic and financial impacts of planning



Come along to our new series of events which look at the direct and indirect financial and economic consequences of planning policy and development decisions. For councillors, senior officers and people with responsibility for finance, regeneration and/or economic development. October and November 2013.

Play 1 2 3 4 5 6

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**PAS** @pas\_team 18h  
Planning activity at todays workshop, generating lots of interesting discussion from delegates. [pic.twitter.com/kcldn21Dfo](http://pic.twitter.com/kcldn21Dfo)  
Show Photo

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