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THE VOICE OF BUSINESS

MINERALS

LIVING WITH MINERALS 3

SHAPING UK MINERALS POLICY

UK Minerals FORUM

Good news from NASA (ex BBC)

- New minerals point to wetter Mars
- A NASA space probe has discovered a new category of minerals spread across large regions of Mars

Living with Minerals 3

- Living with Minerals 3 – Shaping UK Minerals Policy
- 11:15 Registration - exhibition opens
- 12:00 Lunch – exhibition & networking opportunities
- 13:00 Chairman's welcome & introduction Nigel Jackson, Chairman, CBI Minerals Group
- 13:15 Keynote address John Cridland, Deputy Director General, CBI
- 13:30 Guest speaker Robert Flies, Adviser, Protecting the Natural Environment, DG Environmental, European Commission
- 13:45 Guest speaker Helen Phillips, Chief Executive, Natural England
- 14:00 Guest speaker Aubrey Manning, Emeritus Professor of Natural History, University of Edinburgh
- 14:15 Refreshments

Living with Minerals 3

- 14:45 Working Group 1 – Andrew Bloodworth, Head of Science for Minerals, British Geological Survey, Declining mineral reserves and the future security of supply
- 15:30 Working Group 2 – Ruth Chambers, Deputy Chief Executive, Campaign for National Parks, Mineral extraction in National Parks & AONB
- 16:15 Refreshments
- 16:45 Working Group 3 – Lester Hicks CBE MA MCD, Carbon and proximity of mineral supply
- 17:30 Working Group 4 – Simon van der Byl, Director - General, QPA Cumulative impact of policy, legislation & regulation
- 18:15 Closing remarks – Dyfrig James, Regional President Northern and Central Europe, Lafarge Aggregates and Concrete
- 18:30 Close

Sponsors – Thank you!

CBI Minerals Group

- Aggregates – QPA & BAA
- Ball clays and China clays – KABCA
- Brick clays and ceramics – BCC
- Cement – BCA
- Coal – Coalpro
- Industrial Sand – SAMSA
- Salt, Fluorspar, Potash, et al – MAUK
- British Gypsum, Consultants, Lawyers, BGS

CBIMG – key work 07/8

- Mineral extraction and Archaeology
- Mine Waste Directive transposition
- Planning system
- Community Infrastructure Levy
- Living with Minerals 3
- UK Minerals Forum
- Associate Parliamentary Minerals Group

‘Minerals are essential’ – the campaign continues

- 10 years on and growing
- Minerals 98, 00, 02
- LWM1, 2 and now LWM3
- ‘Making the link’ between
- Minerals, the economy & our way of life
- Flying the flag for all UK minerals

UKMF – Concept

- With diminishing resources for minerals issues in HMG an initiative was needed to make sure they get attention somewhere, with all key players in the same room

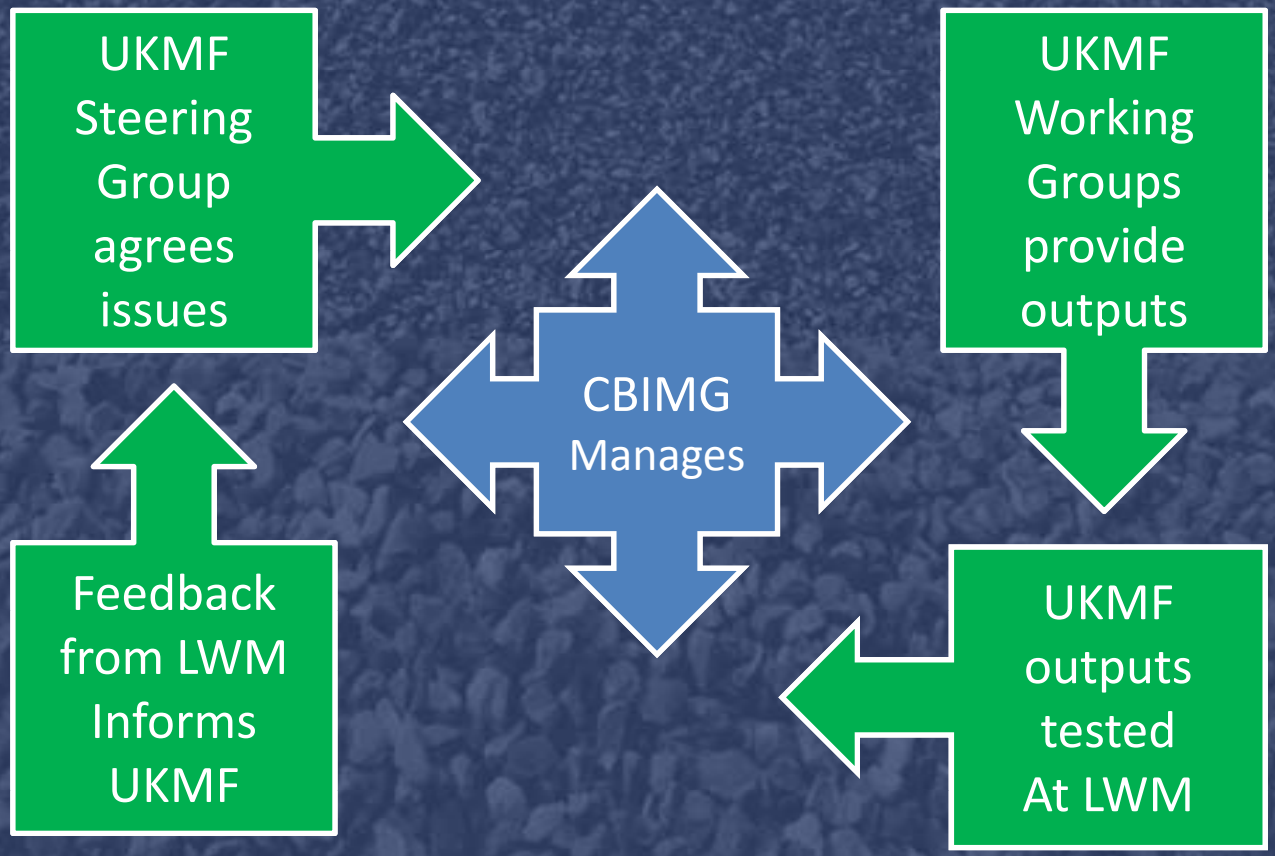
UKMF – Aim

To provide an overarching and representative National Minerals Forum, drawing together all key stakeholders, to debate and raise awareness of issues, and identify potential solutions, relating to the prudent use, sustainable management and security of supply of indigenous UK minerals.

UKMF – Participation

- CBIMG – UK land won industry
- HMG – CLG, DEFRA, BERR
- Agencies – EH, NE
- Devolved – WAG, SE, NIA
- NGOs – CPRE, WCL
- Planning Officers Society
- Others eg EA, HSE
- YOU!

UKMF – Operating model



UKMF – Work Cycle 2007/8

4 Working Groups:

- Security of supply
- Mineral extraction in National Parks & AONBs
- Carbon and proximity of mineral supply
- Cumulative impact of policy, legislation & regulation

UKMF – first output!

- Tougher planning policies to reinforce the proximity principle by giving preference or greater weight to using local sources, notably for aggregates, which are widely available
- Intervention to give preference or added weight to local sources for minerals such as coal and cement that are both available in the UK and, increasingly, imported.

This raises the wider question of how carbon reduction can be factored into regulatory decisions alongside more traditional environmental factors in the overall judgment of "sustainability". Decisions need to be taken on whether carbon might trump other issues or whether it should simply be added to the "environmental pot". What is the regulatory signal to which the minerals industries should respond through the preferred context of voluntary action?

AGENDA FOR ACTION

Instigate a coordinated campaign of voluntary carbon reduction action amongst the UK's minerals industries. Spread awareness, broaden company commitment and ensure action is followed through across the whole of the sector

Back the voluntary campaign with a "realistic and harder edge" led by the industry collectively, to ensure wide and sustained commitment amongst operators

Consider specific regulatory policies that reinforce the proximity principle by encouraging the reduction of mineral transport distances. Coordination of effort could be by the *UK Minerals Forum* under the auspices of the *CBI Minerals Group*.

5 Cumulative impact of policy, legislation & regulation

THE ISSUES

Good regulation is good for minerals, as it is for any other industry that needs permissions to operate. It provides a level playing field on which all operators in a given sector know what is required of them in key disciplines such as health & safety and environmental performance. Good regulation protects industry just as it protects those upon whom it has impacts.

But the reality today is that there is a growing volume of legislation that is not good – rules that are not properly thought through and are often devised and applied without proper "joined-up thinking" on the part of diverse regulators. The majority of such regulation emanates from Brussels and is then cascaded down into national regulation. It is not just the breadth of it that is of concern to the industry but the sheer volume and the fact that the UK often tends to "gold plate" its legislation when transposing EU directives, so adding to the overall burden, complexity and bureaucracy.

An example is the current planning for implementation of the Mining Waste Directive in the UK. Officials performed well in negotiating the Directive, achieving a realistic outcome appropriate to the characteristics of mineral waste in the UK. But when it comes to the Directive's practical implementation, both the industry and the various regulators involved are having to devote considerable resource to ensuring that the UK regulations do not result in duplication and conflict between overlapping regulatory regimes and the imposition of unnecessary burdens on all interested parties with no net environmental benefit. Whether this goal will be achieved remains unclear.

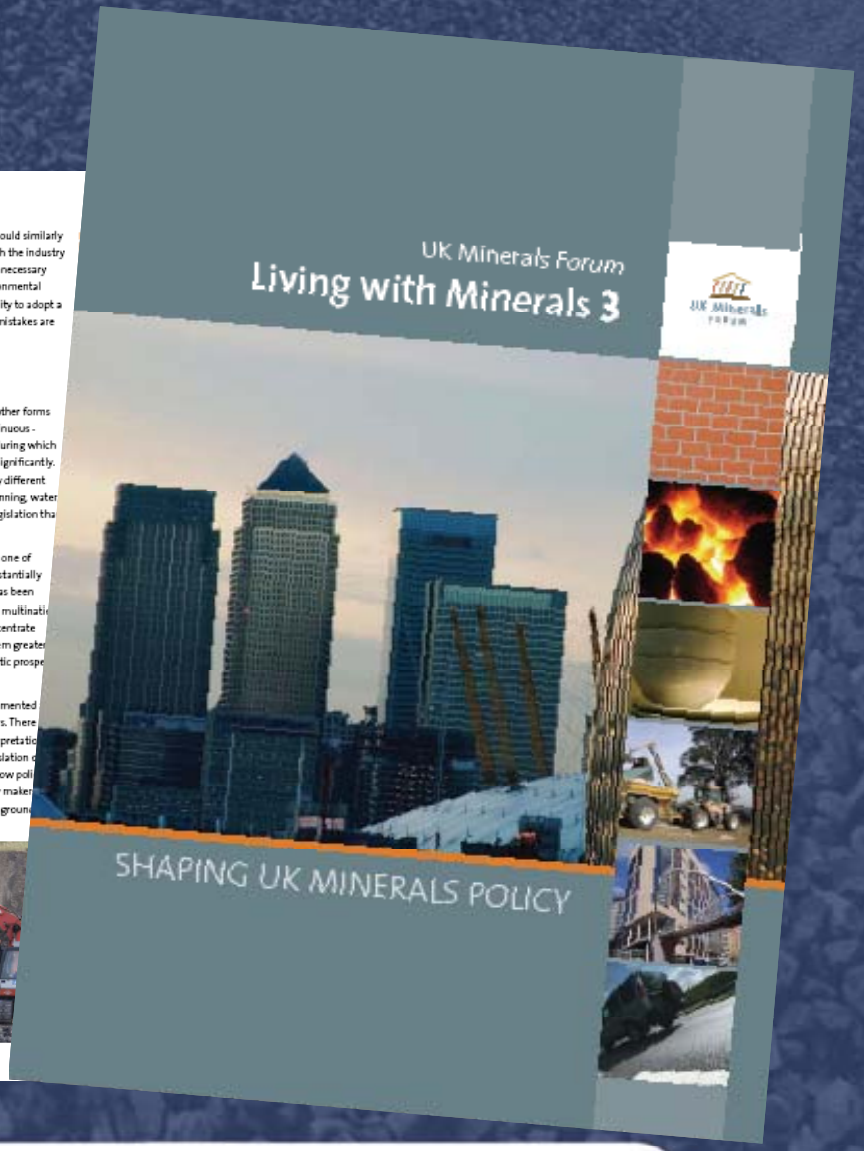
Legislation required under the Water Act to introduce abstraction licences for the dewatering of quarries, unless carefully crafted, could similarly create a regrettable situation in which the industry and the regulators have to resolve unnecessary conflict between planning and environmental regulation. There is now an opportunity to adopt a better approach to ensure that past mistakes are not repeated.

ANALYSIS

Minerals fundamentally differ from other forms of development in that they are continuous - evolving often over several decades during which the legislative goal posts may move significantly. Extensions to sites may well face very different requirements on health & safety, planning, water, waste, and general environmental legislation tha earlier permissions on the same site..

The big issue for mineral operators is one of certainty. The fact that laws can substantially change after the initial investment has been committed can be a big deterrent for multinati companies which can otherwise concentrate production in countries that offer them greate certainty and, therefore a more realistic prospe an assured return.

The situation arises because of a fragmented overlapping approach from regulators. There many instances where different interpretati are applied to different pieces of legislation regulation. They also often differ in how poli should be applied between the policy make the officers who implement it on the groun



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www.ukmineralsforum.co.uk

Thank You BGS

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Living with Minerals 3

- Hope you enjoy the day
- Mutual respect will be required!
- Reception on HOC terrace 7 .00pm
- Formalities at 7.30pm
- World record for speed drinking broken by 8.30pm?

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Strong links between the economy and the environment

- EU Heads of State and Governments: the Lisbon and Gothenburg Strategies (Sustainable Development) 2001
- European Strategy on non-energy raw materials
- Thematic strategy on the sustainable use of natural resources
- Climate change package

Strengthen coherence between Climate change, Natural Environment and Land Use

- **Climate change / Energy:** mitigation, adaptation, renewable energies
- **EU Biodiversity Strategy:** the living world around us, ecosystem services
- **Major negative drivers:** habitat loss / destruction, fragmentation, over-exploitation, invasive species, pollution..

Protecting the Natural Environment and Sustainable Use of Natural Resources

- **Integration of biodiversity issues into other policies:** legislation, financial incentives, business & biodiversity, TEEB - study
- **Network of protected areas:** NATURA 2000 based on the Birds and Habitat Directives
- **Climate change:** adaptation challenges

NATURA 2000: Cornerstone of EU Biodiversity and Nature Policy

- **More than 25 000 sites**, about 85 million ha (17% of the EU territory)
- **"Living Landscapes"** – Man and Nature work together: economic activities/developments continue to take place as long as these activities do not undermine the ecological value of the site;
- **Implementation:** to find an intelligent balance between economic interests and nature protection

Sustainable Land Management is more than just enforcing directives

- **Flexible mechanisms needed**: EU directives – Policy Implementation MS – practice at local level: "Brussels is often used as a convenient scapegoat"
- **Policy practices** not simply "effective implementation of directives" but also the articulation of conflict and difference: "Experience is a hard teacher because it gives the test first, the lesson afterwards" (Vernon Sanders)
- **The experiences** gained from the practice need to be translated back to the policy makers: "so that we don't become too alienated from real life"

Natura 2000: a bureaucratic monster or everything perfect ?

- Development projects: mitigation and compensation measures
- The need to take nature-issues on-board sufficiently early
- Relying on stakeholder involvement and an atmosphere of trust
- Specific guidelines for non-energy extractive activities under preparation

“Le vrai est trop simple, il faut y arriver toujours par le compliqué” (G. Sand)

[The truth is too simple, we always have to find it through complication]

- Trends in our society, such as strong urbanisation, increasing urban lifestyles disconnected from nature, land use changes, increased transport infrastructure, globalisation…
- Organisational risks: increasing costs, administration, diminishing efficiency..
- Improved networking in decision-making processes needed (at all levels)

Thank you for your attention

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What is meant by 'security of supply'?

- Criticality – how essential is the mineral?
- Vulnerability – what is the risk of disruption to supply?
- Cold War thinking
  - Overseas sources = more vulnerable
  - Domestic sources = more secure
- At the beginning of 21st Century – how secure is our domestic supply?

Indigenous minerals

- Energy / construction / industrial minerals
- Some minerals more important than others
- Benefits: security / self-sufficiency, wealth creation and employment (direct and indirect), internalising environmental and social costs, lower carbon
- Disbenefits: environmental and amenity impacts

Factors affecting security of supply of indigenous minerals

- Geological availability (resources)
- Demand – is there a market?
- Viability – can the mineral be produced profitably?
- Capacity to supply – are there sufficient extraction sites and is infrastructure able to move to market?
- Investment – are the risks acceptable enough to allow long-term investment?
- Legal access
  - can a 'licence to operate' be obtained?
  - can agreement reached with land- and/or mineral owners?

Resource availability

- UK relatively rich in resources
- Unevenly distributed / occur in inconvenient places
- Large variation in scarcity / abundance and geological complexity
- Grade / quality issues
- Sterilisation by other development
- Landscape, conservation and heritage designations constrain future availability

Investment and access

- Stable regulatory and fiscal environment essential to allow investment
- Certainty and clarity of policy at European, national, regional and local levels
- Legal access fundamental in creating and maintaining productive capacity
- UK is densely populated – creates demand for minerals, but also increases competition for land and heightens appreciation and value placed upon landscape / heritage / nature conservation

Environmental and planning policy

- Policies at all levels of governance crucial to long-term security of supply
- Spatial planning key to securing indigenous minerals supply
- Integrated approach to considering the economic benefits of minerals supply with environmental considerations
- Minerals can only be worked where they occur
- Demand seldom co-located with supply

Advocacy of 'need'?

- Continuity of minerals supply is essential for the development of a modern economy
- High level generic recognition of 'need'
- Some minerals (aggregates, silica sand) have more specific statements
- Lack of clarity for other minerals – planners may have difficulty balancing specific economic need with environmental considerations – especially if demand remote from supply
- Management of nation's mineral resources needs to championed like other national assets – water, environment, heritage

Mitigating security of supply

- Resource efficiency (more with less)
- Wider and more diverse resource base – challenging but possible (underground, deeper water, more recycling, substitution)
- Improved supply capacity (transport & storage infrastructure, disposal [CCS])
- Crucially sufficient permitted reserves to sustain supply

Permitted reserves – crisis, what crisis?

- Some are very large (salt, kaolin), some limited (coal, glass sand), and some perilously low (fluorspar)
- Aggregates large but declining – some faster than others (crushed rock slowly, sand and gravel more quickly, notably in SE)
- Major regional variations in aggregate reserves – reasons complex
- Next generation of strategic rail – linked hard rock quarries should be a concern because of long lead times

Conclusions (1): Changing times

- World is rapidly changing and competition for all resources is growing
- Secure supply of indigenous minerals is key to sustaining our economy for the foreseeable future
- Need to mitigate and adapt to climate change makes 'localisation' more likely

Conclusions (2): National advocacy for minerals

- Spatial planning key to maintaining security of supply
- Is a lack of advocacy for mineral need creating imbalance in the system?
- 'Strategic statements' by HMG on economic importance of specific minerals ~~may~~ improve decision-making by planning system
- Clear and unambiguous planning guidance is essential to sustaining supply

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Origins and current status

- Established by 1949 Act of Parliament as part of post - war social reconstruction of Britain to conserve natural and cultural heritage for the nation
- Millions visit because of their beauty and tranquillity
- 14 National Parks in England, Scotland and Wales covering over 2 million hectares
- 41 Areas of Outstanding Natural Beauty (AONBs) in England and Wales covering over 2.1 million hectares

Function and protection

- Not wilderness areas – lived in and worked in landscapes
- Primarily a landscape designation, they contain areas of wildlife or cultural importance (e.g. SSSIs, SAMs or SACs)
- Highest protection of landscape and scenic beauty in government policy
- No up to date information available on public perception of mining and quarrying in NPs & AONBs

Mineral extraction in NPs & AONBs

- 2,100 active mineral operations in England, Scotland and Wales
- 97 are located in NPs
- 168 are located in AONBs

(January 2008)

- Minerals extracted include:
  - Building stone
  - Cement minerals
  - Crushed rock aggregate
  - Fluorspar
  - Ball clay
  - Potash
  - Sand and gravel
  - Silica sand

Carboniferous Limestone

- Forms distinctive, high quality landscapes
- 48% of outcrop area within National Park or AONB
- Important source of industrial limestone and aggregate
- Significant issue in the Peak District / Yorkshire Dales National Parks and Mendips AONB

Aggregate minerals: sales, reserves and consumption from NPs & AONBs in England

Sales

- 22.6 Mt (16%) from National Parks and AONBs. 2005

Reserves

- 987.6 Mt (24%) in National Parks and AONBs. 2005

Consumption

London	1%
East of England	4%
South East	5%
North East	7%
East Midlands	9%
West Midlands	10%
North West	21%
South West	22%
Yorkshire & the Humber	26%

Options for aggregate supply from outside English NPs and AONBs

- Land - won primary aggregates outside National Parks & AONBs
- Marine - dredged
- Imports (from elsewhere in UK / overseas)
- Recycled / secondary aggregates
- Underground mining?

- All options have pros and cons (economic, political, environmental)
- Policy and regulation likely to have a major influence on choices / emphasis

Planning for minerals in National Parks and AONBs

- All major developments in these areas strictly controlled – 'Silkin Test'
- Minerals treated same as other development, with permission granted only in 'exceptional circumstances'
- Trend is towards consolidation at larger sites with 2042 end dates
- No new permissions; extensions rare
- Several dormant permissions given up

What are 'exceptional circumstances'?

- Decision must take account of :
  - 'national considerations of mineral supply'
  - alternative supplies outside designated area, or meeting need in some other way
- Alternative sources of aggregate are usually available, so these considerations generally apply to 'other' minerals with more restricted distribution which may coincide with NPs and / or AONBs

Clarity

- Planning policy framework for minerals other than aggregates lacks clarity – guidance is patchy and has a variable shelf - life
- There is confusion amongst stakeholders about roles and responsibilities of government departments
- A clearer approach the issue of 'national considerations of mineral supply' (for minerals other than aggregates) may be needed
- An overarching statement on the importance of natural resources (including minerals) might assist decision – making

Conclusions

- Certain National Parks & AONBs currently make a substantial contribution to the supply of minerals, although the supply of aggregate minerals from these areas is likely to decline significantly before 2042
- Although variety of future supply options outside National Parks & AONBs exist for aggregate minerals, these present environmental and socio-economic challenges
- Planning framework for supply of minerals other than aggregates from NPs & AONBs lacks clarity, particularly with regard to 'national considerations of mineral supply'

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Carbon and Proximity in Minerals Supply

- The Government has committed the UK to a cut in greenhouse gas emissions – including CO_2 – of 80% below 1990 levels by 2050
- Our best present estimate is that the minerals industries emit 4.25 million tonnes of CO_2 each year in extracting and moving material in the UK – almost 30% in transport
- Under 1% of the national annual carbon total of about 550 million tonnes
- But still a major challenge – no part of the economy can opt out

Putting Minerals in Carbon Perspective

UK Emissions in 2006: million tonnes CO_2	
Energy generation	232
Transport	130
Industry	93
Domestic	76
Commerce & institutions	23
Agriculture (CO_2 equivalent)	19
Landfill (CO_2 equivalent)	19
Minerals extraction + transport	**4.25**

What we did

We looked at:

- Material movement in the quarry – removing and piling overburden, extracting raw product and moving it to first stage processing
- Transport to first UK user
- Moving mineral imports to users
- Ready - mix concrete and road asphalt

What we didn't do

We excluded from our estimates:

- Oil and gas extraction
- High-energy downstream mineral processing and manufacturing – governed by the EU Emissions Trading Scheme and UK Climate Change Agreements (cement, bricks, china clay, potash, lime, gypsum)
- The intrinsic carbon in coal – coal as a fossil fuel is an energy carbon issue not an extraction issue
- Transport carbon in hauling imported minerals outside UK

But our proposals for action on carbon economy at extraction sites and on transport apply equally to all sectors, including imports

How best to cut carbon in minerals?

We decided to focus on stronger voluntary action because:

- There is already a lot of useful sector - wide material for mineral production managers at all levels
- There is already a lot of good practice in companies, especially on corporate data and sites
- Voluntary action can embrace and engage everybody
- More statutory action has large practical and competitiveness implications across a very diverse range of mineral industries with potential for distortions and perverse outcomes

Industry - wide voluntary action

- Best practice needs to be broadened and deepened
- Stronger and more consistent company commitment
- Comprehensive carbon monitoring on a consistent basis
- Delivery of action right down the management line
- Reporting good practice and achievement back up the line
- Reward and encouragement – company champions; national awards?

Proximity – cutting down 'Transport Carbon'

- Minerals are heavy and moving them burns carbon
- About 30% of UK "mineral carbon" is in transport
- Where there is a choice on sourcing there is a carbon trade-off between local and more distant supplies
- We looked at 2 different scenarios
  - Aggregates – widely available in the UK
  - Minerals available in the UK but also / increasingly imported

Proximity – Aggregates

- Aggregates the dominant onshore UK mineral – primary extraction 200-220 million tonnes a year – about 70% of UK land-won tonnage
- The "local mineral", widely available – average haul still only 25 miles
- But local supply difficulties means increasing use of distant sources, especially by the South East.
- Aggregates transport emissions about half CO_2 total for UK mineral transport
- So potential big savings in cutting haulage distance

Proximity – Other Minerals

- Some minerals available in economic quality and quantity in the UK but also imported
- Principally cement and coal – imports increasing but smaller tonnages of other minerals imported too
- Long-distance transport to the UK adds carbon – example:
  - 44 million tonnes of coal imported in 2005
  - 70% of UK consumption
  - shipped from Russia, South Africa, Indonesia, Colombia, Australia
  - Adding 8 million tonnes of embodied CO_2 – nearly 1.5% of total UK emissions and nearly twice total UK mineral emissions

The way forward

- Arguments about climate change causes and impacts may continue
- But the target of decarbonising the UK by 80% by 2050 is now setting the agenda – no-one can 'opt out'
- Mineral extraction and transport is not a major CO_2 source, and there is already much good practice
- But the time for doubts and quibbles is past – the whole minerals sector must 'up its game' on carbon – or government will step in

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Theme 1: Regulation and legislation – why it matters

- Good regulation is good for industry (but bad regulation needs to be challenged and corrected)
- All industries are regulated – this presentation looks at what singles the minerals industry out from the others
- The vast proportion emanates from Brussels and must then be transposed into national legislation
- Legislation and regulation in minerals centres on four main areas:
  - Planning, environment (including waste and water), H&S, energy

A Typical Legislative Package

15 EU Directives

33 Primary Legislations

22 Secondary Legislations

24 Planning Guidance Notes and Statements

13 Mineral Planning Guidance Notes and Statements

17 Regional Planning Guidance Notes and Regional Spatial Strategies

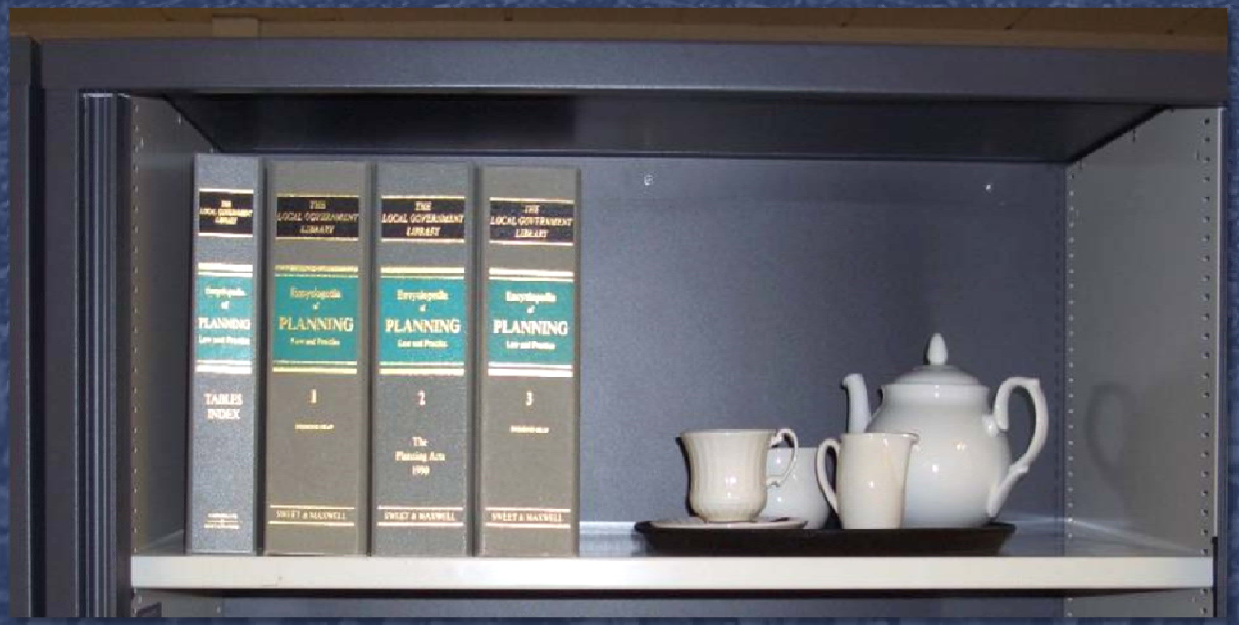
6 MP / ODPM & Defra Circulars

21 Guides & Good Practice

38 Research Reports and Publications

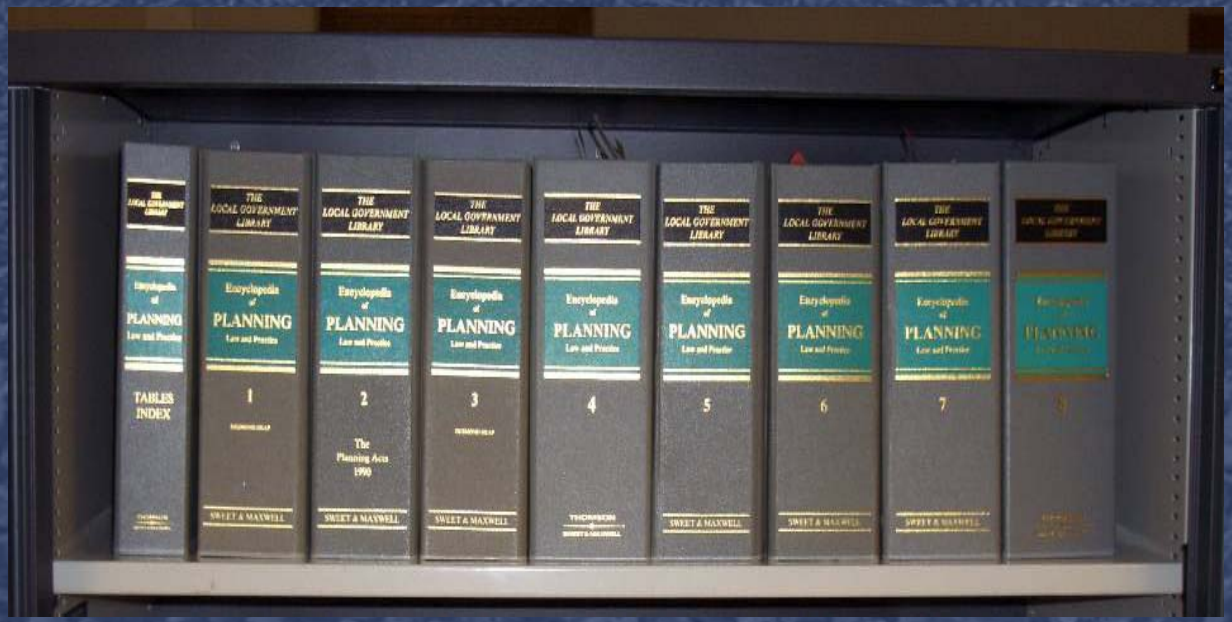
8 ISO / BS Standards

Encyclopaedia of Law and Practice in ?? Volumes



Ah the good old days when you could look it up quickly and easily and then put your feet up with a nice cuppa ...

Encyclopaedia of Law and Practice in ?? Volumes



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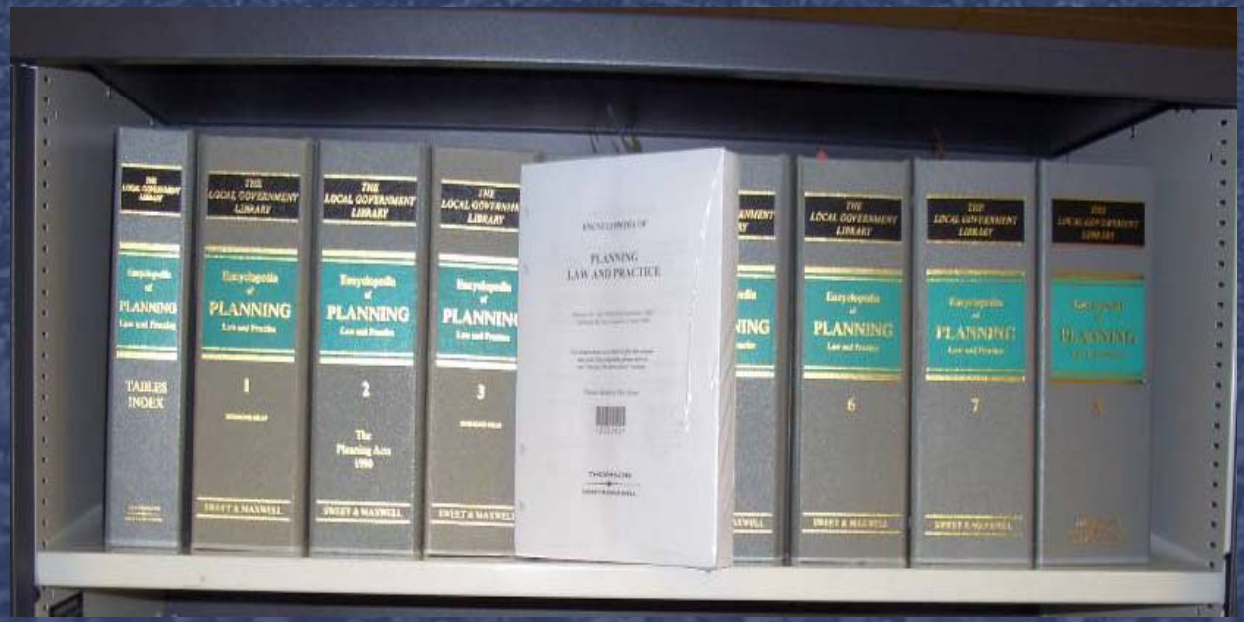
Encyclopaedia of Law and Practice in ?? Volumes



and don't forget to update it regularly...
...only takes a few hours

Theme 2 – Differences between minerals operations and other forms of development

- Minerals developments are continuous operations
- Where operations span many decades they must cope with several changes in policy, legislation and regulation during their lives
- The consent for the progressive extraction of the basic resource is subject to continuous revision resulting from changes to H&S, planning, waste, water and general environmental legislation and regulation

Theme 3: the effect of uncertainty

- A large percentage of minerals production is now owned by multinational companies, with investments in many parts of the globe
- Uncertainty about possible future changes in legislation and regulation could influence decisions taken at head offices about future investment in the UK
- This uncertainty could lead to a problem of security of supply of essential minerals in the longer term

Theme 4: "Joining up" the regulations and regulators

- Before legislation is passed the future regulators of that legislation must be brought together to appreciate the likely effects of it and avoid duplication and overlaps
- The probable regulators in this case are: HSE, EA, MPAs and EHOs.
- Currently there are many overlaps between these bodies and different interpretations of the policy, legislation or regulation in question
- There is also an apparent difference in what is set as policy at the highest regulatory level and the interpretation of that policy at field officer level

Theme 5: The Regulatory Impact Assessment

- Government accepts that the RIA concept is not working and is currently reviewing it
- It tends at present to take the desired policy outcome as a given and make the RIA suit that end as supporting evidence
- It is vital in the future that the RIA is a tool that is used effectively as a cross Departmental device, with a dialogue including the future regulators, NGOs and the industries affected, to realistically assess the impact of planned regulation and the cumulative impact of this and extant legislation.
- This must precede the legislation being passed in Parliament

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