ENSURE
Environmental Consulting Ltd

ENVIRONMENTAL, SOCIAL & GOVERNANCE
ESIA / SEA / IESC / CSR / EMS
SUSTAINABLE DEVELOPMENT

Coal Mine Closure
Can we deliver a Sustainable Legacy

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Introduction

- **ENSURE –** an independent environmental consultancy addressing coalfield closure legacy and development issues in the UK
- Active in Mine Closure Planning in Africa
- Purpose of this Presentation –
  - What have we learnt in the UK?
  - Examples of Good and Bad practice from our experience

Mine Closure Plans
Are they fit for purpose?

Does one size fit all?

- Each mine [Deep or Open Cast] has its own specific context in terms of national, regional and local significance
  - Direct and Indirect Employment
  - Social – local and wider impacts
  - Environment
  - Water – groundwater /mine water /surface water
  - Methane – risk or opportunity
  - Mine and tip stability
- Insurance risks – flood risk and geohazards

ISSUES

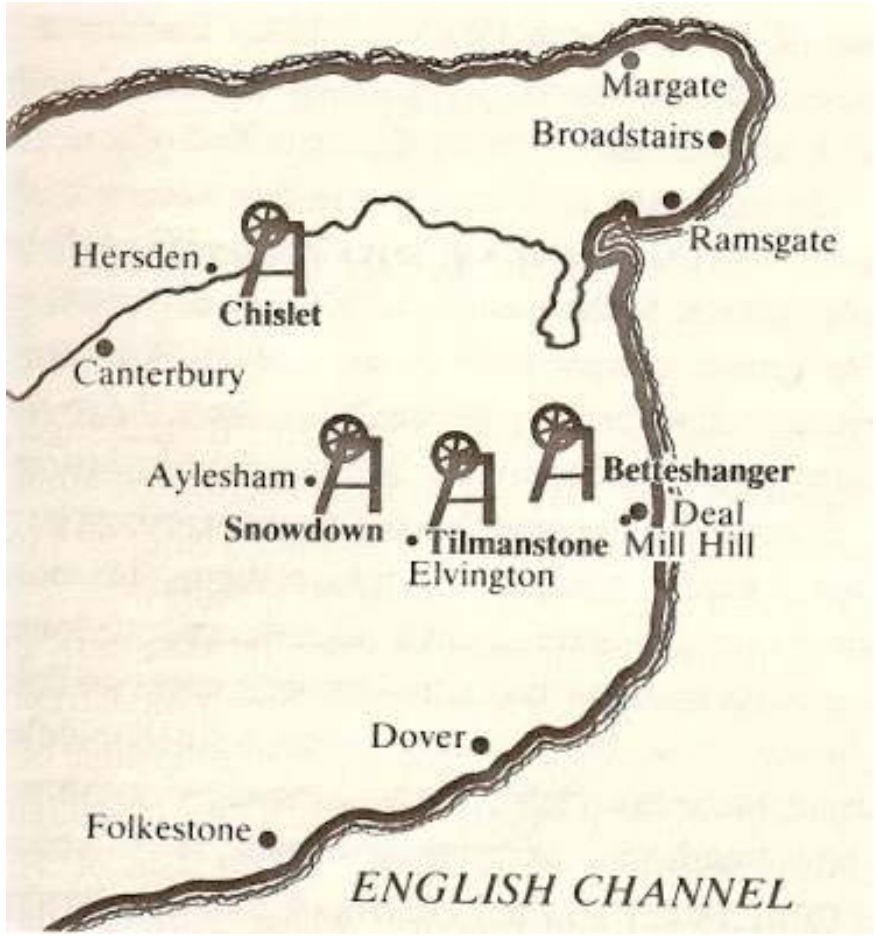
- Identify the Issues with Stakeholders
- Physical redevelopment constraints:
  - Subsidence
  - Spoil heap stability or opencast pit
    - (Aberfan to 2020 weather impacts)
  - Contamination
  - Groundwater/rising minewater
    - Active or passive treatment – lagoons and reedbeds prior to discharge
  - Infrastructure (road, rail, river/canal)

Opportunities

- Identify the potential Opportunities
  - Combined regeneration/ mixed use
  - Use of Nature Based Solutions for Open Pit or spoil reclamation
  - Integrate energy and heat recovery – combined options
  - High energy/heat/water users

    (glass houses like Thanet Earth)
    - Thanet Earth (400m toms, 30m Peppers, 24m cucumbers PA by hydroponics)
  - Eco-centre village/housing

Example: **Kent Coalfield**



- Betteshanger 1924 – **1989** (2 shafts, 648m & 739m)
- Chislet 1914 – **1969** (2 shafts 450m & 447m)
- Snowdown 1908 – **1987** (2 shafts 913m & 940m)
- Tilmanstone 1906 – **1986** (2 shafts 966m & 957m)
- Numerous other small pits with short life
- Closure due to economics and politics
- Local Authority for Regeneration : Kent County Council

Examples

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Chislet 1961 (shut 1969)

2021 Partial regeneration. Ongoing

Tilmanstone

1990 (shut 1986) – initial reclamation shown

2020 – Food and distribution. Heat recovery?

Betteshanger

1960 (shut 1989)

2019 – Intercrop glasshouses and country park.

Heat recovery. Nature based solutions in park.

Snowdown

1960 (shut 1987)

2020 – lack of strategy = no progress

Midlands: Steetley Colliery Worksop

- Deep mine – rising minewater and methane recovery
- Derelict Refractory works
- Limestone quarry, spoil pits and landfill
- Sensitive rising aquifer
- Straddles local authority boundary
- Heavily contaminated
- Quarry became lake as pumps stopped
- Poor Road access

Steetley Colliery

- Site regeneration strategy agreed between Local Authorities and Laing O’ Rourke.
- New road access agreed
- Expensive remediation
- Planned manufacturing hub
- Office relocation
- Recreation
- Future rail connection
- Planned heat recovery/ cooling
- Methane recovery/gas engine
- Willing local workforce

Steetley becomes Explore Industrial Park

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- State of the art facility
- Supplying across UK
- Local workforce and suppliers

Summary

UK Experience covers deep and Open Cast coal

- Many sites closed without adequate planning for environmental and social impact
- The impact can be wider than expected – regional rather than just local
- A Mine Closure Plan needs to include all connected stakeholders
- Strong strategy and unity of approach needed
- Regeneration needs to be planned from the start.
- Infrastructure improvements can be key to delivery
- Mixed use solutions – no single answer
- PLAN, REVIEW and PLAN again

Carbon Reduction and Diversification Opportunities

Regeneration should consider:

- Energy diversification options,
  - Power generation,
  - Methane recovery
  - Heat recovery
  - Water treatment
  - Connect users with high heat, power and water demand [glass houses]
  - Nature Based solutions for spoil regeneration and water treatment