



Malta
International
Risk
Management
Initiative

Sustainable Economic Development delivered through Strategic Risk Management

**“Delivering Sustainable
Prosperity”**

Strategic Risk Management applied to a challenge has 5 components :-



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5. Management
4. Technology
3. Understanding
2. Goals
1. Ethics

Strategic Risk Management

Furthermore, Strategic Risk Management of a process continually evolves, driven by the development of Understanding



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5. Management

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1. Ethics

Strategic Risk Management



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Consider a 200 year-old example of Strategic Risk Management

The Challenge in 1815:- The Coalmine Owners wanted to make coal mining safe and productive. In particular they wanted to prevent the loss of life due to methane explosions as mines went deeper into gassier conditions



1815 Component No 1. Ethics

Mine owners wanted to prevent of loss of miners' lives due to Methane gas explosions as mining goes deeper into gassier conditions



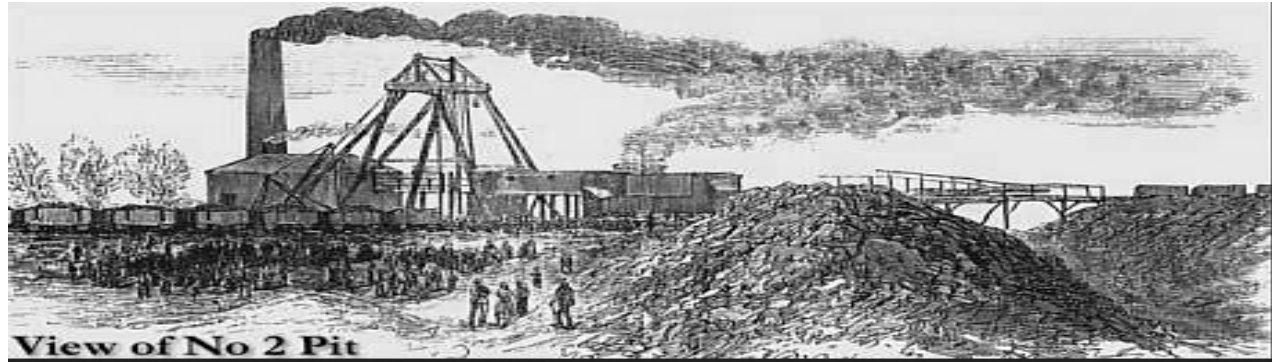
Coal Seam
going
deeper

- 5. Management
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1815 Component 2. Goals

- Safe mining of deeper coal seams
- Powering of the industrial revolution at home and abroad



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1815 Component 3. Understanding

- Open flames used for light caused methane released by the coal to explode with fatal results
- Flames enclosed by small metal tubes can't travel through the tubes – metal wire gauze is like a bundle of tubes



www.henecksacks.co.za

5. Management

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1815 Component 4. The Resulting Technology

The miner's Safety
Lamp invented by
Sir Hugh Davy in
1815



Wire gauze wrapped
around flame

Flame on wick soaked
in lamp oil

Oil reservoir

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Component 5. Management standards set years ago and continued today

- Responsibilities enshrined in the law:- Mining Law and Regulations
- Engendered responsible use of technology
 - 1842 Mines Act – no children or women underground
 - 1850 Coal Mines Inspection Act – regular inspection
 - 1872 Coal Mines Regulation Act – mine managers to have certified training
 - And so on.....Mines Regulations 2014

5. Management

4. Technology

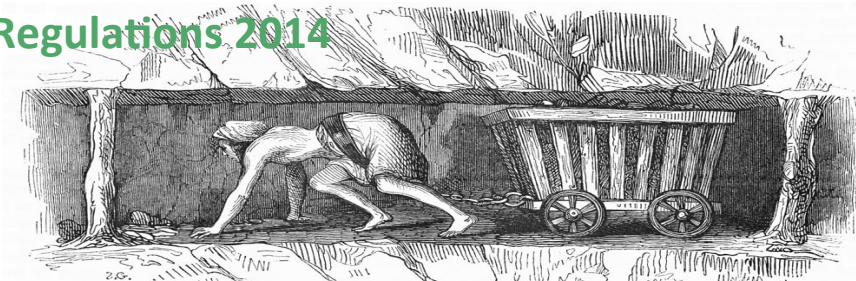
3. Understanding

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Strategic Risk Management

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The result of repeated Risk Management in British Coalmining as Understanding developed:-

British Coalmining was the safest and among the most productive in the world!





How could coalmining and the use of coal as a fuel in the UK evolve further? (1)

- New relevant Understanding, - Global Warming – need to reduce CO₂ emissions from fossil fuels - so Ethics and Goals have been revisited
- Ultimate UK solution – energy from renewables coupled with adequate storage
- But the UK doesn't have adequate storage at present, and the provision is a long term solution . So coal (and gas) should be used during a transition – can CO₂ emissions from coal be reduced?

How could coalmining and the use of coal as a fuel in the UK evolve further? (2)

- 2015 New Understanding and Technology lead to the development of Underground Coal Gasification (UCG) and Carbon Capture and Storage (CCS)
- 2015 and beyond:- These could be used in the UK, controlled by Management to meet UK standards of CO₂ emissions:- Risk Management
- Collateral Benefit - none of the workforce in danger underground



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In Conclusion

- Risk Management is a continuous, evolving process, dependent on the ethics and creative capabilities of mankind
- Global warming presents the greatest risk faced by mankind, and hence the importance of CCS and UCG when considering exploiting coal reserves
- This and other mitigation methods will be an important contribution to the position of fossil fuels in the context of Sustainable Economic Development
- This is an example of how a holistic, Strategic Risk Management approach to projects can help deliver Sustainable Economic Development



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Thank You

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