

## The Coal Authority

### Coal Reserves in the United Kingdom

In 1977 the National Coal Board (NCB) issued a Statement on Coal Reserves which explained how, in future, the NCB should define coal reserves and what, in its opinion, those reserves were at that date.

The three definitions used were:-

- i) Coal "in place" - the total coal originally in place in the UK defined as coal seams over 2 ft thick and less than 4000 ft deep, after allowing for the 25 bn tonnes already worked by 1976.
- ii) "Recoverable Reserves" - that proportion of coal in place in known coalfields which could be used by established technology.
- iii) "Operating Reserves" - that proportion of recoverable reserves, which has been fully proved in respect of thickness, quality and mining conditions and which is either accessible to existing mines or has been proved sufficiently to identify new mines.

The figures quoted against these definitions was as follows:-

- i) Coal "in place" - 190 bn tonnes (excluding coal at depths greater than 4000 ft and coal beneath the North Sea).
- ii) Recoverable Reserves - 45 bn tonnes (This is the basis of the publicised 300 years reserves.)
- iii) Operating Reserves - existing mines – 4 bnt  
- identified new mines – 2 bnt

In 1981, a review of the NCB's figures was carried out by the Natural Environment Research Council (NERC)/Institute of Geological Sciences (IGS).

Some of the more significant findings from that review are:-

- i) "There was agreement that estimates of quantities "in situ" are of less public usefulness than estimates of amounts likely to be available to meet future demands."
- ii) "The coal recovered will be determined largely by the future cost of its extraction compared with the costs of energy from alternative sources and by overall demand factors dependent on the future state of the national economy."

- iii) Until convincing economic arguments are produced in its support the Institute was sceptical about the estimates of 45 bnt.

In 1983 there was a further evaluation of reserves at deep mines by NCB showing:-

	<u>Proved in detail</u>	<u>Estimated</u>
Existing mines	3,246 mt	552 mt
New mines	977 mt	70 mt
	_____	_____
Total	4,223 mt	622 mt

In 1990, a presentation by British Coal Corporation (BCC) to the Department of Energy on coal reserves referred again to the latest estimate of 45 bnt as technically recoverable reserves but that the amount workable was dependent upon the economic circumstances at the time of working.

It also stated that recoverable reserves from existing mines and certain new mine projects was currently assessed at between 3 bnt and 5 bnt.

Since 1983 the coal worked in deep mines totals 1,100 mt.

Currently at UK Coal deep mines the reserves plus resources total 86 mt which without investments would see exhaustion at all pits between 2014-2020 depending how much resource could be converted into reserve and worked.

With investment, which would allow the potential resources to be worked, the total increases by 159 mt and production should be maintained at around 10 mt to 2020 reducing to the point of exhaustion around 2035. (This again assumes all pits continue in production until exhaustion.)

At December 2005 the CA statistics show the following:-

	<u>Reserves, Resources &amp; Mineral Potential</u>
Existing mines	352 mt
Drift mine prospects:	
Margam West	36 mt
Canonbie	No information
Amble	No information

In 1993 an audit of opencast reserves revealed the following:-

	<u>Potential</u>	<u>Part Proved</u>	<u>Fully Proved</u>
Scotland	143	47	1
England (W)	291	86	5
England (CW)	114	51	17
England (CN)	189	80	9
South Wales	<u>172</u>	<u>60</u>	<u>13</u>
	<u>909 mt</u>	<u>324 mt</u>	<u>45 mt</u>

Note: The partly and fully proved figures are included in the Potential.

The CA's analysis of potential opencast reserves at November 2005 is as follows:-

Current sites	39.6 mt
Sites awaiting consent	38.0
Conditional licences	67.3
Other sites	<u>474.3</u>
	<u>619.2 mt</u>

However, the amount being worked or with planning approval is only approximately 50 mt.

In 2002 the British Geological Survey (BGS) produced a report on behalf of the Department of Trade and Industry (DTI) which reviewed the suitability of the UK coal resource for new technologies.

The report identified onshore areas which offered potential for underground coal gasification (UCG).

The calculation showed that:-

- (a) The minimum total volume of coal suitable for UCG in the UK is about 7 bnt.
- (b) The total volume of coal derived using the average coal thickness meeting the criteria per area is almost 16 bnt.
- (c) The volumes represent 200 years based on the current UK coal consumption of 64 mt p.a.

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