PRESENTATION

ON

COAL BENEFICIATION & REJECT COAL UTILIZATION IN INDIAN CONTEXT

BY

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COAL BENEFICIATION & REJECT COAL UTILIZATION IN INDIAN CONTEXT

USES OF COAL

WORLD

1. 40% of world's electricity
2. 65% of world's steel production
3. Mined economically in 50 countries
4. Used in 70 countries
5. Production approximates 60 billions tonnes
6. 65-70% is washed before use- mostly by coal producer
7. International trade> 1 billion tonne- 99% of it is washed coal

INDIA

1. 65% of our electricity
2. 90% of our steel production
3. Mined extensively (8 states)
4. Used extensively
5. Production 0.431 billion tonnes about 7% of world's production
6. Less than 20% washed, washing capacity approx. 25% of production
7. About 2 million tonnes exported in unwashed form

COAL BENEFICIATION & REJECT COAL UTILIZATION IN INDIAN CONTEXT

COMBUSTION OF COAL

- CO2 EMISSION
- NOX EMISSION
- SOX EMISSION (Acid rain)
- GENERATION OF ASH

CAN BE REDUCED IF

- SUPERCRITICAL/ ULTRA SUPERCRITICAL BOILERS IS USED
- ASH OF RAW COAL IS REDUCED BEFORE USE/COMBUSTION (COAL WASHING)
- CLEAN COAL TECHNOLOGY OF COMBUSTION (FBC+BFBC) ARE USED
- MIXED WITH BIO FUEL IN APPROPRIATE QUANTITY BEFORE COMBUSTION

COAL BENEFICIATION & REJECT COAL UTILIZATION IN INDIAN CONTEXT

REDUCTION OF MINERAL MATTER OF COAL BEFORE COMBUSTION

Environmental Benefits:

- LESSER EMISSIONS OF GHG/SOX
- LESSER GENERATION OF ASH (generally a waste material)

Economical Benefits:

- HIGH THERMAL EFFICIENCY
- LOW ASH DISPOSAL COST
- LESSER BREAK DOWN DUE TO CONSISTENCY OF QUALITY & SIZE
- LESSER AUX. POWER CONSUMPTION
- SAVINGS IN TRANSPORTATION COST
- ADDL. COST OF WASHING VERSUS EXTENT OF ECONOMIC REDUCTION

Energy loss in Washery Rejects :

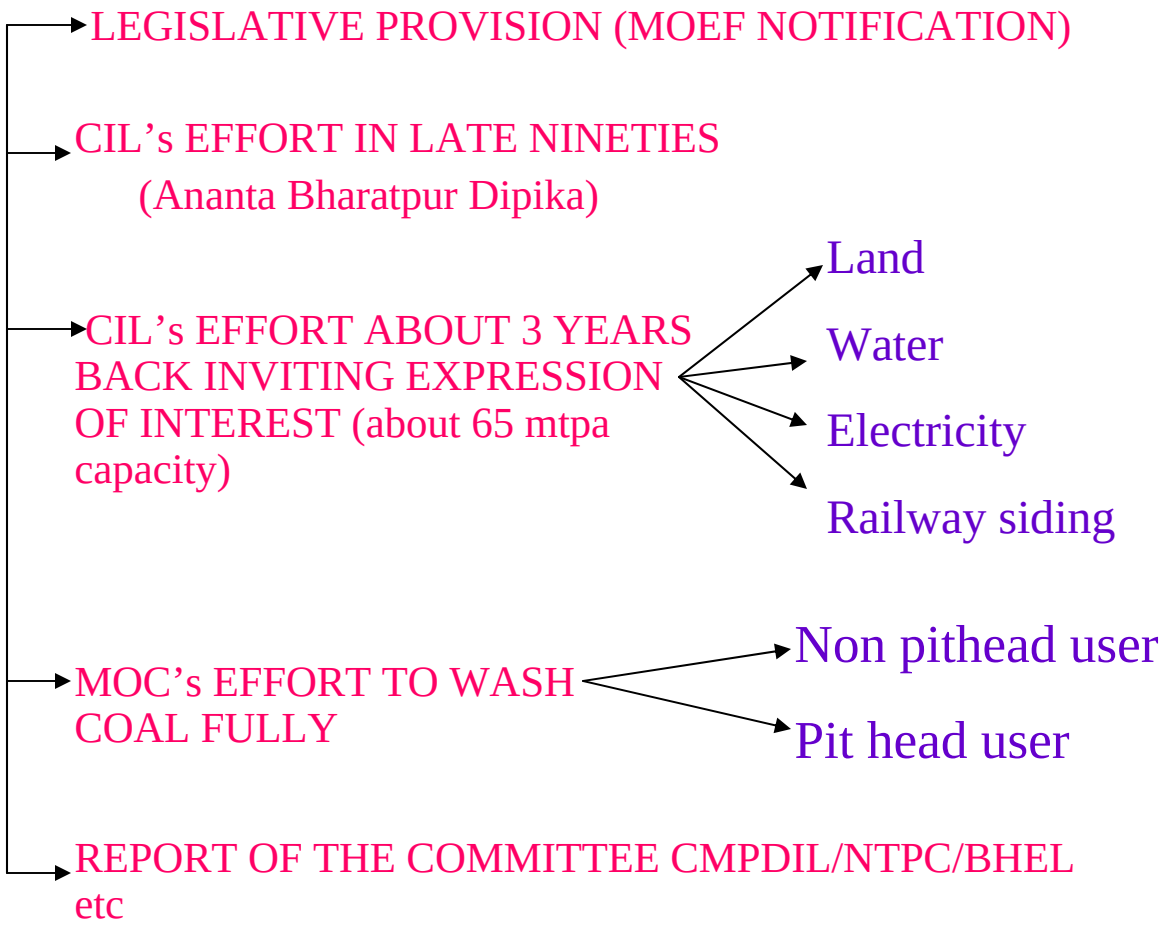
- LEADS TO HIGHER EXCAVATION ETC. IF ENERGY LOSS IS IGNORED
- TO BE USED IN POWER GENERATION
- HUGE ASH GENERATION

Ash Handling:

- ASH DYKE/ASH PONDS
- TRADE
- INTERNAL USE (Cement Plants, Void filling/ Mine filling, Construction of roads/embankments, Fly ash bricks)

COAL BENEFICIATION & REJECT COAL UTILIZATION IN INDIAN CONTEXT

INITIATIVES TO ENHANCE WASHING



COAL BENEFICIATION & REJECT COAL UTILIZATION IN INDIAN CONTEXT

WHY DID WASHING NOT PICK UP

- CONSUMER NOT FULLY CONVINCED OF ECONOMIC BENEFITS
  - Difficult to wash (NGM)
  - High cost of washing
- SLACK IMPLEMENTATION OF LEGISLATIVE PROVISION (no other country has it though)
- INSISTENCE ON CONSUMER TIE UP
- WASHING NOT YET RECOGNISED AS AN END USE ALTHOUGH VAGUELY MENTIONED IN COAL MINES NATIONALISATION AMMEDMENT ACT
- LACK OF CLARITY/USE OF WASHERY REJECTS

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REJECT COAL UTILISATION

QUALITY REQUIREMENT:

- **GCV BETWEEN 1300 TO 1800 KCAL/KG(washery rejects from Orissa & Jharkhand suitable)**

LIKELY COST OF GENERATION:

Rs. 3.5/kwh in CIL's seven 10 MW each FBC plants using washery rejects

(High due to low plant load factor)

Generation cost should be as that of other thermal power plant

CLI WASHERY AT DIPKA TO UTILISE 0.3 MT/ANNUM OF REJECTS WITH 0.13 MT OF RAW COAL IN A FBC PLANT

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WHAT NEED TO BE DONE

- A CONSENSUS ABOUT THE NEED OF WASHING ON THE BASIS OF ECONOMIC BENEFITS ALONE
- FRESH LEGISLATION/NOTIFICATION
- PRODUCER MUST WASH IF WE ARE CONVINCED OF MERIT
- REJECT UTILISATION A MUST (may consider incentivising)
- REMOVE THE RESTRICTIVE CONDITION OF CONSUMER TIE UP BEFORE FACILITATION
- CONSIDER WASHING- AN APPROVED END USE
- ENVIRONMENT FRIENDLY DISPOSAL OF ASH

THANK YOU