

IMPROVEMENT OF THE ORGANISATION AND EFFECTIVENESS OF THE MONGOLIAN COAL SECTOR

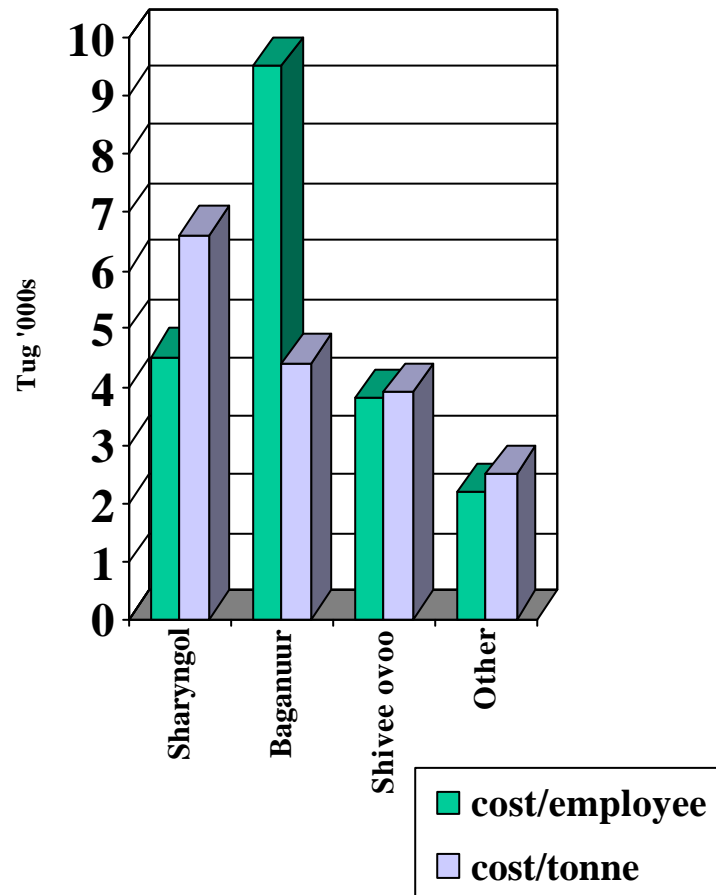
Guinness Gallagher Corporate Services Ltd
and the
Implementation Agency for Coal, Mongolia

FINDINGS AND ISSUES *(DRAFT)*

KEY FINDINGS FROM OUR STUDY

- Sharyngol, Baganuur, Shivee ovoo, and the local private mining companies are all viable businesses,
- each of the mines has a reasonable market base which is well balanced among different types of customer,
- the principal mines are served by a satisfactory rail network and road communications can be improved cost-effectively, cutting travelling times by as much as one third,
- a strong human resource base of skills and knowledge exists. If skills can reach international best practice, big increases in profitability are possible,
- profit increases will benefit the mines and consumers if the railways system is opened to private trains.

F:1 COST OF MINING IS TOO HIGH



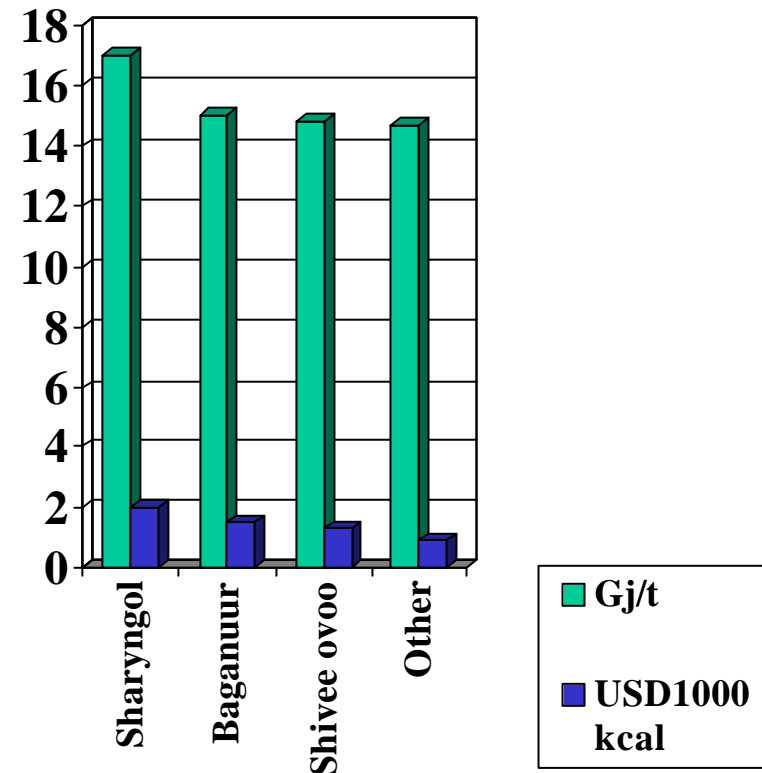
ISSUES:

- costs are low by world standards but higher than they need to be,
- social costs are “front ended” onto mines which subsidise community infrastructure,
- too many people are employed and not paid enough,
- too much rubbish is transported with the coal,
- hard use of equipment increases the cost of maintenance.

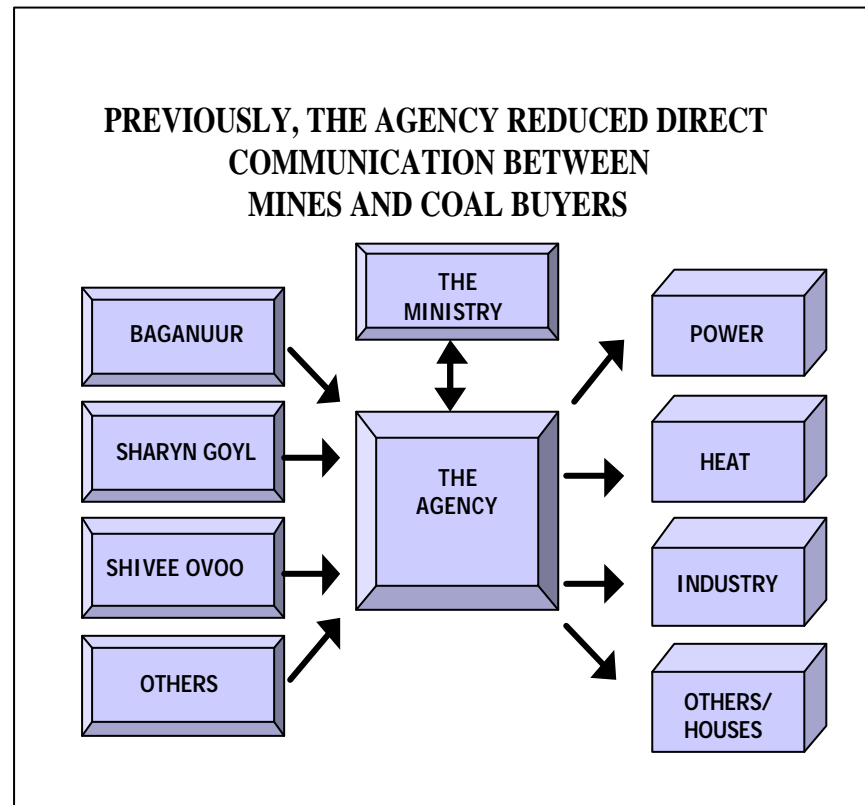
F:2 QUALITY OF COAL IS STILL TOO LOW

ISSUES:

- mine face “housekeeping” practices need to improve.
- this will reduce coal contamination by stone, metal and moisture,
- incentives and penalties are not sufficient to improve practices,
- results in coal continuing to fall below design specification for the electricity and heat boilers,
- over time payment for coal by heat value rather than tonnage will help make improvements.



F:3 WEAK INCENTIVES



ISSUES

- PREVIOUSLY there was limited contact between producers and those who deal with the consequences low quality coal,
- coal allocation system prevented buyers moving to the best quality suppliers,
- financial incentives have not yet been strong enough to affect behaviour
- the party with the best incentive to improve quality should manage the work.

F:4 MAJOR GAIN FOR MINIMAL CAPITAL

ISSUES

- there is still available a 10-20 percent improvement in coal quality from better “house-keeping” by miners,
- the miners need information and incentives to change,
- changes do not require major capital investment but better training and better practices,
- further significant gains can be made by putting pressure on the transport sector to improve its performance

“poor quality, large lumpy coal, rocks, metals, other foreign matter in coal supplied to customers, at power stations and boilers,

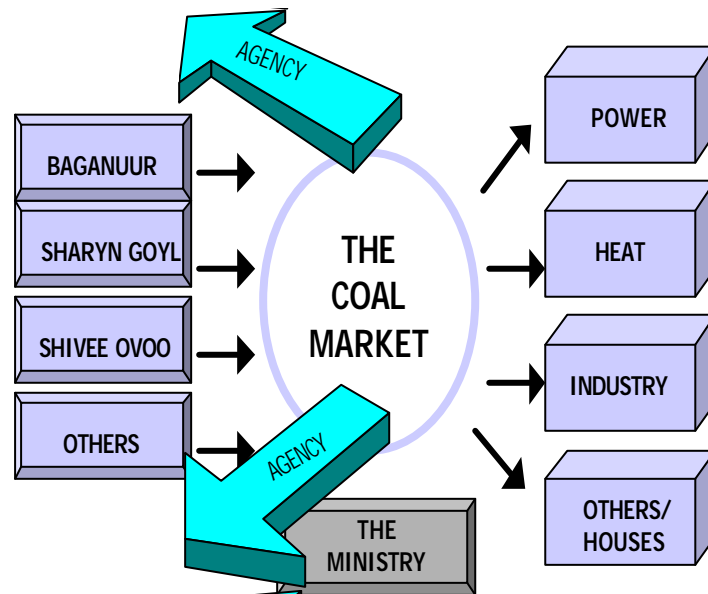
29% cut in boiler pressure, steam temperature dropped from 560 ° to 540 ° resulting in low efficiency, extra coal has to be carried long distances, wasting transport, equipment is damaged,” *

electricity is as much as 30% dearer than it needs to be.

* See Masterplan page 165

F:5 NEW RELATIONSHIPS

AGENCY FUNCTIONS REORGANISED



ISSUES

- most mines now have direct contact with their customers
- clients can choose the supplier of coal on quality and price of coal,
- management and workers, get bonuses for quality not tonnage,
- over time coal contracts, based on or gj/kcal will improve incentives,

F:5 NEW RELATIONSHIPS (2)

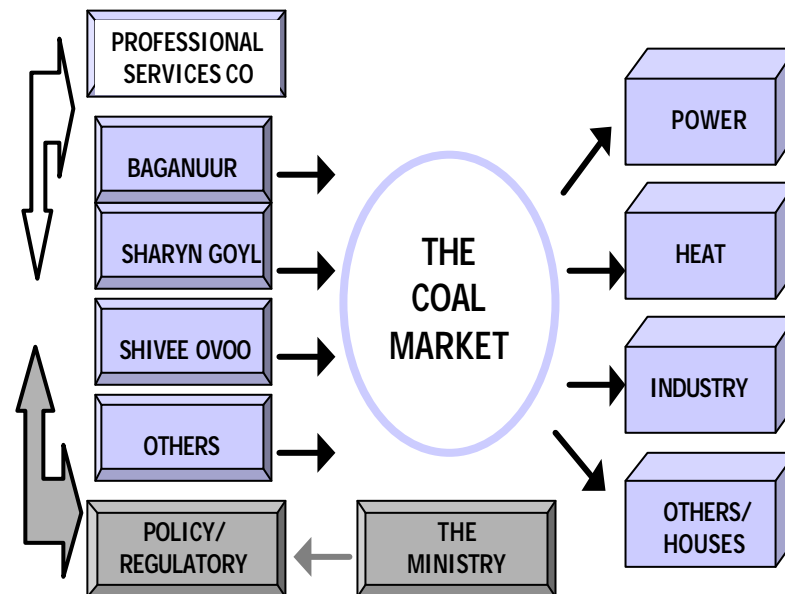
Professional Services Company

- change part of the agency, into a private professional services company with all types of mining and engineering expertise, funded by fees from clients,
- this company can act as a dealer in coal and spare parts,

Regulation and Policy Agency

- the rest will keep health, safety and environmental tasks and absorb policy role from MOID,
- these tasks could be performed by the company under contract to the government.

AGENCY FUNCTIONS REORGANISED

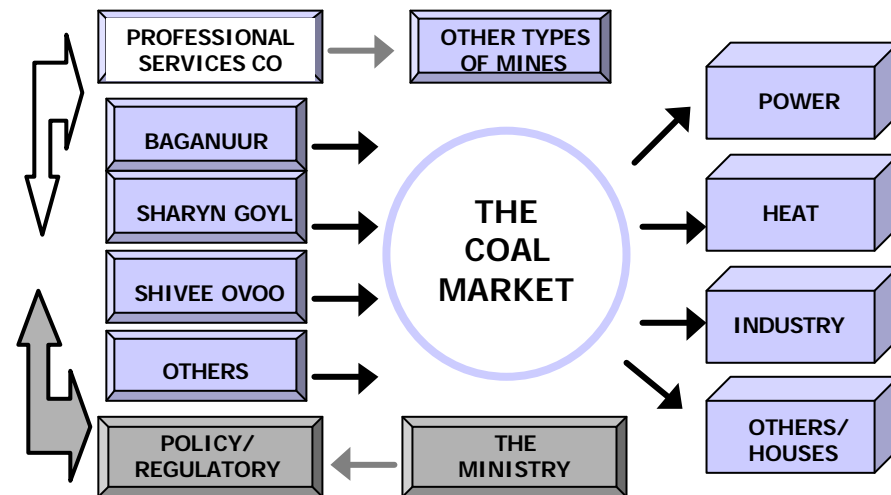


F:6 REORGANISATION COMES FIRST

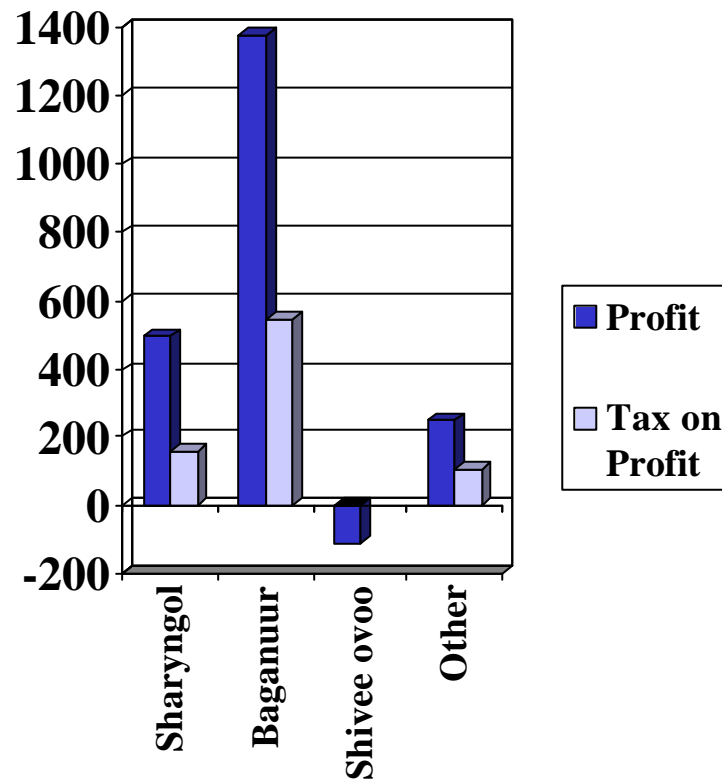
ISSUES

- better housekeeping and professional management are pre-conditions to new capital,
- if capital is invested before key relationships have been resolved money will be wasted,
- debt incurred to install capital equipment that is wasted will still have to be serviced,
- excessive debts will exacerbate cash flow problems

DIAGRAM OF NEW SITUATION



F:7 MINING BUSINESS ARE VIABLE



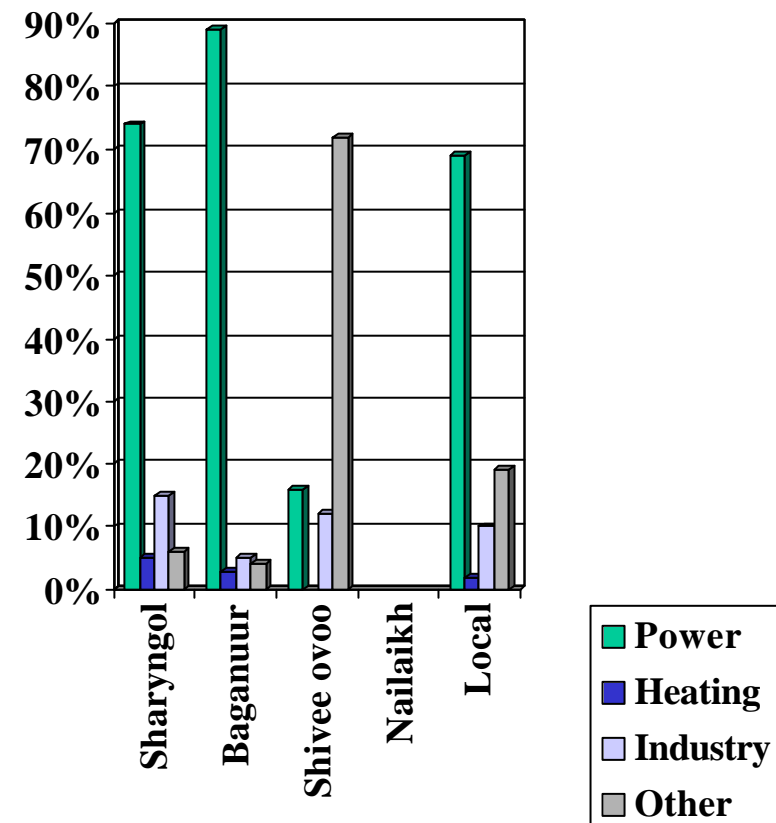
ISSUES

- at present each mining business is a viable entity,
- if mining methods move towards world best practice, all will be profitable
- the government, should explicitly contract for delivery of social services,
- the contract should be between the service provider and the government's agent.
- a base contract for mine staff, between mine and provider, will get the provider started.

F:8 GOOD MARKETS EXIST

ISSUES

- all the main mines have good, well balanced markets,
- the allocation system interfered with contact between the mines and their markets, reducing the effectiveness of the market,
- competition between mines is the best practice method to allocate product at minimum cost and at maximum quality.
- competition should be fostered,
- e.g. NZ Coal Corp had competition from private mines.



F:9 SATISFACTORY TRANSPORT

ISSUES

RAIL

- well established rail network from the mines to the markets,
- maximising coal quality will minimise transport costs,
- 10% reduction in tonnes, will save US\$ 750,000 p.a.
- should pressure the railway to improve service by adoption of international best practice,
- reducing tonnage by better quality, will reduce the demand for investment, in wagons and increase profit.

ROAD

- simple, cost effective methods can make big improvements, e.g. drag grading of dirt roads,
- coal mines could seek a contract from the road agency to take responsibility for key roads,
- small improvements in roads could cut travel times by 30% and reduce maintenance costs for vehicles.

AIR

- professional services company should use light aircraft to move key staff between mines.

F:10 STRONG HUMAN RESOURCE POTENTIAL

ISSUES

- 90 years of experience in coal mining has created a well established core of mining skills,
- a need exists to build on this base by adopting best practice mining methods,
- performance of staff will improve greatly if incentives are strengthened and related to desired results,
- efficiency will increase through direct contracting for technical, and professional services from independent specialists,
- independent professionals hired as required will make better use of scarce skills, be available to other types of mines and coal users,
- the company will develop skills and knowledge by international professional affiliations,
- world class affiliations will give access to best practice knowledge and training,
- career development for coal sector staff will be enhanced,
- movement between public and private sector, will be possible.

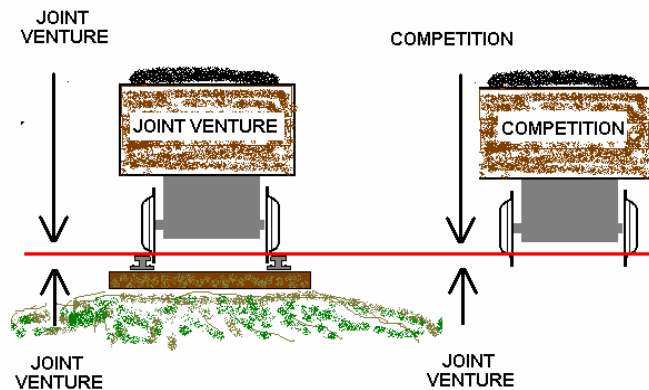
COMPETITION WILL BENEFIT THE CUSTOMER

MINE

- 3-4 Competitive mining companies
- 10% reduction in costs,
- 10% improvement in quality ~
- 300-400% increase in profit,
- at same sale price in \$ per gj

TRANSPORT

- 10% reduction in tonnage from better quality coal is worth US\$ 750,000,
- potentially a monopoly, could gain all the benefits,
- competition possible, if track separate from rolling stock



POWER PLANT

- a 10% improvement in heat/tonne
- would improve generation by some 20-30%
- There would also be savings in the cost of repairs and maintenance,
- savings in the need for other expensive fuels.