

**WORLD BANK**

**Southern Mongolia Infrastructure**

**Land Transport Infrastructure to Support Mining  
Development**

**DRAFT**

## SUMMARY

This report describes the options, and their associated costs and benefits, for developing land transport infrastructure and services to support the development of key mines in Southern Mongolia. It discusses the potential for private-sector investment in infrastructure and develops a decision framework for infrastructure development in the region.

### **Future demand for transport**

There are at least eight major coal and mineral projects in the South Gobi which are expected to come into production in the next five years or so; these are mostly coal mines but also including one of the largest copper deposits in the world. This will be accompanied by an increase in population and the development of associated urban centres. Together, there will be a substantial increase in the demand for transport, both to transport mineral production to markets and to provide goods and services to the local population and industry.

The principal economic driver of new rail construction will be the coal flows. Whilst the base metal mines have the capacity to earn large amounts of revenue, the volume of freight they generate is relatively limited and, even for Oyu Tolgoi, would be unable to justify significant new rail construction, whilst a regional population of less than 100,000 would likewise be much more economically served by truck and bus rather than a new railway.

The scale of the coal reserves is such that future transport volumes will largely be determined by demand, especially from northern China, rather than being constrained by availability of supply. The forecast increase in Chinese steel production will lead to continued growth in coking coal demand and Mongolia has rapidly become the most important external supplier, a position it will probably maintain into the long-term.

Exporting through either Russia or China to third countries is less certain. The competitiveness of Mongolian coal in the North Asian markets will critically depend on the cost and availability of rail transport to either Russian or Chinese ports; coking coal will probably be able to bear this cost but exports of thermal coal will be difficult, especially so through Russian ports at current rail tariffs. The most likely scenario may be for Mongolian coking coal to displace Chinese supplies from mines further towards the coast which are then freed up for local export to Japan and South Korea.

As China currently imports the equivalent of about 10 million tonnes of concentrate, Oyu Tolgoi should thus be able to readily export its entire production of copper concentrates (around 2 million tonnes p.a.) for the foreseeable future. Whilst this traffic would not justify a rail line by itself, it will almost certainly move by rail if a rail line exists.

Overall, it is likely that Mongolia will export around 25 million tonnes of minerals by 2015, of which possibly 10 million tonnes will be exported overseas, probably through a Chinese port. In the longer term, these volumes could double.

The mine inputs of supplies and fuel are generally an order of magnitude smaller than the mine output unless there is a smelter attached to the mine and, with the exception of fuel, are generally not well suited to rail transport. In comparable situations, mining supplies are generally collected from a number of suppliers and delivered as a mixed load by road as long as there is road access. These inputs therefore will rarely be a deciding factor as to whether or not a railway is constructed. In addition to the mines themselves, there will be demand for passenger and freight transport from the settlements in South Gobi. However, again this is unlikely to be significant in terms of deciding whether or not a line is built and most, if not all of this traffic is likely to be transported by road.

### **Infrastructure Plans in South Gobi**

The objectives for the road sub-sector in the National Development Policy formulated by the GOM in 2005 include the continuing development and improvement of the corridors linking to the international highways, constructing the three Asian Highways and continuing the periodic maintenance of state highways and local roads. Achieving these objectives was addressed in more detail by a Road Masterplan prepared in 2007; this aims to provide a sealed road between Ulaanbaatar and each aimag centre as well as connecting the international network with the national roads serving the five economic regions of Mongolia.

Within South Gobi, there are plans to construct or reconstruct sealed roads between Ulaanbaatar and Dalanzadgad via Mandalgovi as well as roads linking Ovoot Tolgoi and Dalanzadgad (via Tavan Tolgoi and Oyu Tolgoi) with the Chinese border. However, the masterplan does not include any projects connecting Dalzadgad towards the east and the Trans-Mongolian Highway

The Mongolian rail network (MTZ) is of Russian gauge and has been constructed to Russian standards. Although it is being upgraded, this is along-term project and the network is in generally poor condition with limited remaining capacity on its north-south mainline. MTZ has a dual ownership structure, with equal shares held by the Mongolian and Russian governments, and this has created considerable difficulty in terms of agreeing an investment and upgrading plan.

In 2007, the Millennium Challenge Corporation (MCC) provided a grant of US\$ 188 million to GOM for rail investments. This includes funds for rollingstock which will be owned by a new leasing company which will lease them on commercial terms to MTZ and independent shippers, thus providing the start of private-operator access to the rail network. The grant does not include any infrastructure component other than new signalling equipment and this will need to be addressed if significant volumes of minerals are to be exported on any routes other than the cross-border lines to China.

A number of new lines have been proposed at various times, some of which are more likely than others; most will be built only if there are major mining developments which generate substantial export quantities of coal. Cross-border links to China from Tavan Tolgoi and Ovoot Tolgoi are likely to be the first built, followed by a link from the South Gobi to the main Trans-Mongolian Railway (TMR) when it is justified by demand.

### **Neighbouring rail networks**

Exports of minerals from Mongolia depend critically on the capacity and charges on the neighbouring rail networks in China and Russia.

#### *China*

China's rail network is extensive but also highly congested and there is very little spare capacity on key routes, especially those crossing the mountains which run north-south west of a line between Beijing and Guangdong. Coal is about 40 per cent of the traffic carried on China's railways and its strong growth in recent years is forecast to continue for at least the next decade, thus being the single most important factor affecting network capacity. The major coalfields are all located west of the mountains and over 700 million tonnes is carried each year, mostly by rail, from these to the eastern and southern provinces, either directly or by coastal shipping from the northern ports.

Nine railway lines, forming three groups, currently cross the mountains separating these fields from the coastal plain. Two of these lines, the Daqin line and the privately-owned and operated Shenshuohuang line, are specialist heavy-haul lines, with a combined capacity of around 600 million tonnes. Coal shipments from the main western coalbases were forecast to more than double by 2020 compared to 2006 and the railway Medium and Long-term Development Plan (MLTDP) prepared in 2004 places considerable emphasis on expanding coal transport capacity.

The increase in rail capacity is complemented by expansion plans for the seven main coal ports on the east coast (including the construction of a new port at Caofeidian, a sub-port of Tangshan) which are expected to increase their capacity by 60% by 2010 compared to 2005.

In addition to increasing rail capacity across the mountains, China plans to build several other lines to carry minerals from Mongolia. A line between Hami and Linhe is currently under construction as far as Ceke; this acts as a collector line for traffic feeding in from South Gobi by road or rail. Four feeder lines are planned to carry traffic from railheads on the China-Mongolian border between the current crossing at Zamyn Uud and Urumqi in the west. A major new line is also being constructed to carry coal from Nei Monggol to Liaoning; this is planned to subsequently be extended across the border to Choibalsan in Mongolia to provide a third trunk route between northern China and Russia. These lines are constructed, at least initially, as single lines, with a capacity of about 20-25 million tonnes and could typically be built within 18 months – 2 years of being approved. Most of them are likely to be built as either joint venture lines, with the financing shared between the central Government, provinces and potential customers, or as purely private lines.

The difference in gauges between the Chinese and Mongolian systems currently requires traffic to be transhipped at the border. This is a time-consuming process as, although the physical transshipment itself is generally not a problem, it does require adequate supplies of wagons on either side of the border as well as negotiating customs requirements. The short cross-border lines are planned as standard-gauge lines, which will avoid the need for such transshipment; lines to the north and east of the South Gobi, by the same reasoning, would normally be Russian-gauge.

Although there are several non-China Railways operators currently operating, most of them do so on their own networks and there are comparatively few private wagons, and almost no private locomotives, operating on the Chinese network. The concept of a Mongolian-owned train, with Mongolian locomotive and wagons, operating through to the Chinese mainline network, is thus some way off. China Railways has actively discouraged privately-owned wagons for some years and, as yet, there are also no formal arrangements whereby a third party can pay access charges to operate over the main CR network. The normal arrangement is that traffic is carried in CR wagons; whilst they are on non-CR lines, a standard charge is made per day; whilst they are on CR lines the normal CR tariff applies.

An important consideration with the Chinese network is obtaining a reliable long-term capacity allocation. Currently, there is an annual convention at which the available capacity (which is constrained on most of the east-west routes) is allocated to users, and on which MOR's annual transportation plan is then based. If a particular shipper fails to obtain an allocation, he can apply to the relevant railway authority for a non-plan allocation but this is not guaranteed and is also subject to change if circumstances change. For this reason, using the privately-owned Shenhua line may be an attractive long-term option for Mongolian shippers, especially as Shenhua produces very little coking coal itself and thus is not a direct competitor.

Chinese rail tariffs are controlled by national and provincial pricing authorities and are generally set to achieve cost-recovery; they thus vary between different lines. Coal traffic on the main network is typically charged around US\$ .015 per net tonne-km (ntkm), with rates on other lines of up to US\$ .026 per ntkm. Indicative rates from the Mongolian border to Qinhuangdao, the main coal port, are \$US 25.00 from Gashuun Sukhait and \$US 18.00 from Erlian.

### *Russia*

The Russian rail network connecting to Mongolia is much simpler, essentially consisting of the Trans-Siberian Railway (TSR) linking the Mongolian network to the Far East ports. The TSR is a double-track electrified railway which is reportedly currently carrying about half its capacity.

Unlike the Chinese network, therefore, line capacity is not a significant issue for Mongolian mineral exports. However, there are likely to be significant potential tariff and access barriers.

The two main coal terminals are at Vanino and Vostochnoy. Both are privately-owned, either wholly or partly by mining interests. Russian policy is that all terminals should be Russian-owned; the key issue in Russian ports is thus the ownership of terminals and the extent to which Mongolian coal would get access at times of either limited port capacity or when Mongolian coal was competing with Russian producers for the same markets.

The Russian rail network is open to third parties and shippers have been able to operate their own trains, supply their own wagons or continue to rely on the Russian railways (RZD). During this period, a number of third-party operators have emerged, some of whom are the transport arms of major industrial organisations but others of which are genuinely independent transport specialists. Any Mongolian exporter could thus use one of these operators. However, Russian access charges remain commodity-based and tariffs for transit coal are two-three times higher than those for domestic coal which is being exported; the current charges for export coal from Naushki to Vostochny are \$85/tonne, pricing thermal coal out of the market and probably a major barrier for coking coal in the long-term.

### **Infrastructure options in the South Gobi**

The road networks that have been proposed in South Gobi are consistent with the RMP network but also include a connection between Oyu Tolgoi and Sainshand, serving Tsagaan Suvarga en route) as well as a cut-off connecting Tavan Tolgoi directly with the Dalanzadgad – Ulaanbaatar road. No proposals have yet been made for a link between Ovoot Tolgoi/Naryin Sukhait and the aimag centre at Dalanzadgad; instead Naryin Sukhait is linked to Arvaikheer as part of a north-south vertical road.

Both the roads from the mines to the Chinese border are expected to be financed by the mines, with fees then being levied for their use by third parties that are used to partially defray the cost of construction and/or maintenance.

The possible rail lines that have been presented at various times fall into three groups:

- Cross-border lines from Ovoot Tolgoi to Ceke and from Tavan Tolgoi and Oyu Tolgoi to Gashuun Suhait
- A line from Ovoot Tolgoi through Dalanzadgad to Tavan Tolgoi which connects these two
- Connections from the Tavan Tolgoi/oyu Tolgoi area to the main TMR; these include:
  - From Tavan Tolgoi direct to Ulaanbaatar via Mandalgovi; this would provide the most direct route to the north and Russia as well as providing a reasonable service for non-mine traffic to and from the capital
  - From Tavan Tolgoi to the TMR in the vicinity of Airag; this is the shortest route to the TMR but involves a longer distance for traffic heading north
  - From Oyu Tolgoi to Zuunbayan and from there on the existing branch to Sainshand on the TMR. This involves even less new construction, although the Zuunbayan branch would probably have to be reconstructed.
  - In addition, this analysis has considered an additional route direct from Tavan Tolgoi to Sainshand which avoids the detour via Oyu Tolgoi.
- Any of the last three routes would also fit with any longer-term development of a new route to the Russian ports via Choibalsan and the border crossing at Ereentsav.

The cost of constructing a new railway varies significantly, depending on the terrain and the standard of the track being constructed. Construction costs in China, the closest parallel to the South Gobi, vary from a minimum of under \$1 million per route-km for a single-track minimum-standard railway in easy terrain to over \$10 million per route-km for a double-track medium-high speed line in mountainous terrain. A line capable of carrying 25 million tonnes of minerals a year in moderate terrain such as the South Gobi, would normally be constructed as a Class I railway in China, with a ruling grade of 0.6 – 1.3%. The cost of such lines in the South Gobi is estimated at about \$1.8-2.0 million per route-km, depending on the terrain and volume of earthworks.

Operating costs likewise depend on the standard of the line (in particular the axle-load) and the terrain (which affects the tonnes per train and per locomotive). The two most modern and efficient mineral lines in China, the Daqin and Shenhua heavy-haul lines, had operating costs in 2007 of just under 0.008 \$US/ntkm (including depreciation) while the average cost on the CR network for all freight operations in 2006 is estimated at \$US0.0093/ntkm, excluding depreciation. A figure of \$US0.01/ntkm, including depreciation, has been used in this analysis, but in practice costs could range between \$0.009-0.012/ntkm.

#### *Connections to mines*

When a mine is commencing production at a low level, production is normally carried by truck to a railhead, as currently happens at both Tavantolgoi and Nariin Sukhait. Where this does not adversely affect the local population or the environment, this is generally the most economical method of transport for tonnages up to around 4 million tonnes, although the precise level will depend on individual circumstances. Typical breakeven tonnages under Mongolian conditions for a mine to build its own rail connection range between 3 and 8 million tonnes; given the forecast outputs, the mine at Tavan Tolgoi justifies a rail connection under any circumstances, as would the adjacent Baruun Navan. Those at Ovoot Tolgoi and the adjacent Sumbar in the west also would probably justify a rail connection; if this is constructed to the south, then it could also serve Nariin Sukhait. Oyu Tolgoi would be unlikely to justify a rail link by itself but would be served by a line from Tavan Tolgoi to the south. However, Tsagaan Tolgoi and (even more) Tsagaan Suvarga are marginal cases at best and would probably transport by road to a suitable railhead unless other factors became significant.

#### *Ovoot Tolgoi – Tavan Tolgoi*

The case for a connection between these two lines via Dalanzadgad is less clear. Mining inputs alone would not require a connection from the north to Ovoot Tolgoi. Its justification therefore depends on whether the Ovoot Tolgoi mines wish to have an alternative outlet for their coal, either via Gashuun Sukhait and Baotou or via Russian ports.

The route to China from Ovoot Tolgoi via Tavan Tolgoi is longer by about 130 kilometres but is cheaper by about Rmb 10/tonne, excluding the cost of constructing the line. At a discount rate of 10%, this saving requires a volume of around 50 million tonnes before it becomes worthwhile and the only justification for the line would then be the option of using the Russian ports.

#### *Connections from Tavan Tolgoi to TMR*

The principal purpose in constructing one or more of the routes between Tavan Tolgoi and the TMR is likewise to provide an alternative export route to Russia or China or both. For southbound traffic, the routes via the TMR are at least 300 km further than by using the Gashuun Sukhait crossing point and the Chinese network, require a bogie exchange at the border, possible duplication of the southern part of the TMR, and also need to negotiate the heavily congested Chinese network around Datong. It is unlikely that any significant volume would use a link via the TMR in preference to the Gashuun Sukhait line unless the tariffs on the Mongolian network were exceptionally low and the principal justification for these connections is thus their

usefulness for exports via Russia, always remembering that such exports are only viable as long as the fob price of coking coal at the ports remains high enough to cover the land transport cost of around \$100/tonne.

For northbound traffics, the direct line to Ulaanbaatar is the shortest, being 200-400 kilometres shorter than the other options; it is also consistently the cheapest option for northbound exports, as its higher construction cost is outweighed by the need for less upgrading of the TMR and the much shorter distance with its lower operating costs.

The land transport cost to the Chinese ports is about \$70/tonne cheaper than via the Russian ports and exporting via a Chinese port would therefore generally always be the first choice. The route via Gashuun Sukhait is the cheapest southern route by around \$10/tonne (for an export volume of 10 million tonnes), reducing to \$4/tonne if exports reach 20 million tonnes p.a. The two Sainshand options have lower costs than the Airag route as they join the TMR further south, while the Ulaanbaatar line unsurprisingly has a high cost penalty for exports to China.

The optimum choice of route to access the TMR thus depends on the direction in which the exports are expected to flow; predominantly northbound flows will favour the more northerly options whilst the converse is true for southbound exports. However, for these latter, the Gashuun Sukhait route is so superior that it is unlikely a significant volume would use the TMR unless there were exceptional circumstances.

#### *East-west route via Choibalsan*

A final option is a cross-country route, which extends the Airag route to use the existing 60-kilometre Borondor branch and then build a new line to Choibalsan. From there, traffic can use the existing line (which would need to be rebuilt) to access the Russian network at Solovievsk and subsequently join the Trans-Siberian Railway. Unfortunately, this route only saves 200 kilometres compared to using the TMR from Airag to Ulan Ude (and only 30 kilometres if the Ulaanbaatar line is constructed), as the route from Solovievsk to the TSR runs generally north-west

Because of the small distance saving, the Choibalsan route from Airag only becomes justified economically when volumes reach 30 million tonnes p.a. and, even then, the Ulaanbaatar route remains cheaper.

#### *Summary*

Whilst the cross-border routes to China are likely to be viable at around 5 million tonnes p.a., extending the network to connect to the TMR needs to wait until the export potential for Mongolian coal is clearer. It seems unlikely that any significant volume of exports to China will use the TMR via Erlian unless the line is built for other reasons but most other developments in the Tavan Tolgoi – TMR corridors are metal mines generating comparatively low volumes of product which would normally be transported by road to an existing railhead.

Whichever route is constructed, it will be better for some exports flows than others. If exports via Russia can be guaranteed and it is agreed all exports to China will use the cross-border lines, then the Ulaan Bataar route is the best but if it is required to keep options open then an alternative approach may be needed in which the route which gives the least penalty for a mix of traffics. If equal volumes of exports are assumed in the two directions, the Airag and direct Sainshand options are better than either of the extreme north and south connections (Sainshand via Oyu Tolgoi and Ulaanbaatar). However, the Airag route is the more robust as, whilst it is never the best option for either direction, it is also always within about \$2/tonne of the lowest cost for either direction, a small penalty compared to the total cost of transport to the ports. It also provides the

opportunity for future extension to Choibalsan should traffic volumes expand or if the network structure develops to provide a more direct link to the TSR.

Whilst this analysis is adequate at a strategic level, practical route selection will also need to take into account any engineering features of these lines, including any differences between the various options in construction costs and operating conditions and unit costs.

The distance to ports of Mongolian exports leave them very vulnerable to changes in world prices or to unilateral changes in rail tariffs in Russia and China and long-term contracts covering not only the end-user, but also port and rail access in China or Russia, would be required before any substantial new construction would be justified, or attractive to private investment.

While the cross-border lines are planned as standard-gauge lines, it is likely that most of the traffic using the connections to TMR will be to or from the north and these lines should therefore be broad-gauge. If the Airag route is selected, Oyu Tolgoi will not have a broad-gauge connection but it seems unlikely much concentrate traffic would move north and any that does could be transported by road to a railhead at Tavan Tolgoi.

### **Private investment in mineral railways**

#### *General considerations*

The private sector can be involved in the construction and operation of railway lines in many different ways: through infrastructure construction, infrastructure operation (i.e. signalling and train control), rollingstock provision and train operation. There are five basic types of concession:

- Train availability contract, where rolling-stock is provided by a third party (who also normally also does the scheduled maintenance). These enable capital expenditure to be spread over the life of the asset, as well as guaranteeing rollingstock availability and reliability.
- Train operating concession, in which operators either pay Government (or are paid by Government) to operate specific services. Such operators pay access charges (normally a combination of a rate per train-kilometer and a rate per gross tonne-kilometer) to the infrastructure provider. In some cases, and this is the normal situation for freight, there is 'open access', i.e. an operator can operate trains without any financial payment to or from Government by complying with technical standards and paying access charges
- Infrastructure concession – where an organisation undertakes to build infrastructure which is then leased to Government (either directly or to a Government-owned railway) for an annual lease fee. This arrangement avoids Government having to make a large initial capital expenditure and also greatly reduces Government's risk of project over-runs and delays.
- Infrastructure build and operate concession – where an organisation both builds the infrastructure and 'operates' it (i.e. provides train control and supervises train operations), similar to the arrangements used for toll-roads. One example of such an arrangement is a current proposal for a new mining development in Australia.
- Integrated concession in which a company is given the right to build and operate a railway, normally for a defined time period (historically 50 or 100 years) subject to certain conditions such as tariff control, service obligations or (on the Government side) a dividend guarantee.

There are a number of variations on these basic models; for example, a line can be financed by a mine developer, even if it is built and operated by the public sector, with the cost of the line being offset against freight revenue received from the mine.

A fundamental distinction is that between a railway built by an individual company (or companies) on which they transport their own products as part of an overall logistic chain and railways which third parties can use – either using and operating their own rollingstock or using

services provided by railway operator. Many of the new railways constructed in the last fifty years have been of the first type, typically as part of an integrated mine-rail-port project. They are effectively private railways with no obligations to provide a service for third parties, although there is often some informal passenger transport.

However, in other cases, the railways have either been explicitly built to carry third-party freight or it is an obligation imposed by the Government as part of the permission to construct the railway, in order to ensure that smaller mines that cannot justify building a railway line on their own account can be provided with access at a reasonable price. A key decision for Government when granting a rail concession is therefore whether the line is to be common-user and, if so, what arrangements are proposed for this to be enforced in practice as well as in theory.

There are three broad streams of work associated with administering such a rail network with multiple users:

- Accreditation, licensing and safety
- Establishing the procedures for capacity allocation and network management
- Establishing the charging framework and prices

Each of these streams of work has two phases:

- Defining the principles to be adopted
- Developing the procedures by which they will be implemented

These are normally summarised for third party operators (TPOs) in a document which in Europe is known as the 'network statement'.

Even though the regulatory and operational obstacles for TPOs may be overcome, they may still face difficulties in obtaining rollingstock. Most rail rollingstock has a life of over 20 years, a long period to which to commit given that comparable road vehicles may only be used for 3-5 years and then easily disposed of through the secondhand market. A key element in countries where TPOs have flourished has been the existence of third-party rollingstock which can be leased or hired for periods of one or two years. In some countries this has been through specialist leasing companies; in others from other railways. An obvious option in Mongolia is for TPOs to contract with one of the Russian railway operators for the provision of rollingstock or alternatively to develop the leasing company created as part of the Millennium Challenge project.

Other issues to be considered include whether any line that is constructed by a private company will eventually revert to the state (either at the end of the mining lease or after some more general time period) or whether ownership of the line will continue in perpetuity. The handback arrangements need to be clearly stated in the concession agreement, as well as the conditions under which the government can step in and takeover if the concessionaire is not performing as required. This in turn requires a monitoring procedure which is non-intrusive but observant.

### *Potential within South Gobi*

The potential for PSP in the rail network in South Gobi ranges from very good to negligible. The most important thing for an investor in infrastructure is the reliability of the traffic forecasts. The lines linking the proposed mines with the industrial complexes just over the border in China will be carrying traffic that is subject to long-term contracts. Whilst such contracts cannot be relied on absolutely, they are the closest thing to certainty that the mines are going to experience, especially if the industrial complexes themselves have a stake in the mines. For many of the plants in Gansu and Nei Mongol, Mongolia is the closest and cheapest source of their inputs and this also provides some reassurance that substantial traffic volumes can be expected in the long-term.

The lines linking the mines to the existing Mongolian network unfortunately are unlikely to have any such long-term guarantees. Exporting coal through Russian ports must overcome two uncertainties: firstly, the inherent uncertainty of the international market and, secondly, the uncertainty associated with exporting through Russia, which has shown several times in recent years that it is prepared to use energy as a political weapon. Whilst it may be possible to interest some local businesses in lines connecting the mines to the existing network, it seems likely that any such interest would require some guarantees from the government. The other option is to interest some of the Russian resource companies in the South Gobi mines.

It is important that any lines that are built allow access to third parties at a reasonable rate. Whilst Tavan Tolgoi is clearly large enough to justify a line in its own right, other mines with a production capacity of, say, 2-5 million tonnes p.a. will not be and will naturally use road, at a much higher cost per tonne than if they had access to rail. At the margin, this will mean that if small potential mines adjacent to existing lines cannot obtain rail access, they will not be developed and it is in Mongolia's national interest to ensure this does not occur.

### Outline decision framework

Issue	Decision	Comments
Road access to new mines	Privately-funded as far as public network	Determine threshold volumes above which access roads must be sealed to preserve environment. Specify construction standards
Use of public roads for hauling product	Allow up to specified volume subject to loading standards and charges	Volume limit will depend on level of other usage. Loading should be enforced at corporate level. Charges must be sufficient to cover long-run maintenance and renewal costs
Rail access to new lines	Allow	Require access to third parties under specified conditions. Develop standard procedures and charging methodology. Specify handback requirements.
Connection to TMR	Allow if privately-financed. Otherwise defer until there is clear evidence of long-term demand	Undertake marketing and operations study to establish long-term potential for export to Russia. May require commercial agreement with RZhD and ports to obtain reduced long-term access and rate for export coal transiting from Mongolia. As China appears to currently have \$70/tonne advantage, a better option may be to develop alternative customers in China; the ownership of the connecting border lines in China should be monitored.
Connection between Ovoot Tolgoi and Tavan Tolgoi	Allow if privately-funded.	Any Government funding should be restricted to the Tavan Tolgoi – Dalzangadbad section and only considered after a connection to TMR has been constructed.
Connection to Choibalsan	Long-term option only	Monitor progress of proposed Chinese line through Choibalsan