

Mongolia

Mongolia
Survey on Energy – Efficient Construction in
Cold Climate
Final Report
(Summary Version)

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Japan International Cooperation Agency

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1. Executive summary

Takagumi Co. Ltd. (Takagumi) will step into the housing construction market in Mongolia, by offering investment capital and cold-climate resistant construction technologies, which are yet modernized in the country. Due to observed risks in the market, Takagumi will start with construction of 1 apartment house per season with a reliable partner which has been under selection.

Takagumi will target, not the market of luxurious housing where competition has been tight, but the market of low/reasonable cost housing for the middle class, which is expected to grow further. Though it would not be feasible to use housing materials and equipment manufactured in Japan because procurement costs will be uncompetitive, it may be possible to technically control construction specifications for cold climate with Japan's standard of carpentering work on site. Accordingly most procurement will be undertaken in China where Japan's standard practices of stringent inspection will be applied, and authentic procedures of construction on site would then make up the quality of houses to be cold climate resistant.

Takagumi's staff-members will be fielded to the newly established affiliate company to manage cost and quality of work, time schedule and safety of construction site. Since telecommunication between Japan and Mongolia has rather been smooth, it may suffice to deploy a secretary on site to manage close communications with partners, subcontractors and Takagumi's office in Japan, which would consist a reliable network of information as practiced in Japan.

Although expectable profit levels may stay rather lower due to the nature of the target market, and to the additional cost of Japanese standards and expertise, securing stable and constant returns and to avoid price competition with contenders from China and/or Korea will be prioritized.

Hokkaido's construction technology to cope with cold climate may contribute to Mongolia to enhance housing asset with better quality and may expose an indirect solution to atmospheric air pollution. It would also facilitate technology advancement of local industries through learning opportunities on construction site for locally hired foremen and workers to get acquainted with Japanese skills and technologies.

1.1. Technology offered

The Takagumi project aims to conduct housing construction in cold climate and offers modern technologies of housing construction with super insulation through improvement of work precision, which will be led by experts to be fielded from Japan.

1.2. Background

Takagumi has been engaged with construction business in Asahikawa, Japan for more than 60 years and accumulated rich experiences of building construction as a middle-sized contractor. The company has offered higher precision of housing construction which achieves higher level of energy saving (super insulation), and the company has exported houses for colder climate (called "Hoppon-gata jutaku") to Sakhalin, Russia.

They launched a limited liability company in Mongolia, as of April 2012, in order to take part in the housing construction business in Mongolia.

1.3. Market

The housing market in Mongolia has been heated up due to buoyant economy by development in the mining sector, and there has been a rush to build luxurious apartment houses within the city of Ulanbaatar (UB). The newly launched government of Mongolia has offered "100,000 houses construction program" for the middle/poor, which has been promoted by private sector companies such as real estate developers.

1.4. Competition

There have been approx. 1,700-1,900 companies existing in the local market with complex structure of subcontracting. Foreign contractors from China and Korea are active, too.

1.5. Commodities

Due to severe winters, in Mongolia it has been habitually practiced to complete construction work of small/medium sized buildings within the summer season. Takagumi will take it into account and offer Hokkaido based technologies of thermal insulation by air-tightness with reasonable price, through engineering work and expert fielding to the construction site, via the affiliate company established in Mongolia, in order to enhance a business model to promote “Japan brand” through word-of-mouth marketing.

2. Business objectives

(1) Motivation and priority of foreign investment on management strategy

Though superficially looking stable, the business performance of Takagumi has shown better than average profit levels, even after 2007 when construction business as a whole came to be stagnant in Japan. However, as shrinkage in the domestic market caused the company’s performance to be unstable and stunted improvement of capital investment efficiency, the management has sought for investment opportunities out of the country. Under cooperation by Hokkaido local government and Hokkaido bank, the company commenced housing export business to Sakhalin, Russia, which fruited in providing expert houses with pre-cut structural members. The project in Mongolia, through the local affiliate, will strategically be taken as another opportunity to improve the capital investment efficiency of the company.

(2) Business direction

Takagumi will formulate joint ventures (JV) with locally licensed partners, by which the company can take part in construction projects.

Once formulated, a JV handles subject construction project for which the JV hires a main contractor who directly manage construction of the building. Takagumi will field experts to Mongolia in order to be engaged with technical instruction on site, in order to achieve precision of construction work which should be closer to the Japan standard.

Regarding the investment cycle, Takagumi will respect the business cycle in Mongolia and prioritize those projects which can be completed within a summer season, for which decision on investment has to be made by the end of previous calendar year and complete detailed engineering by March of the construction year. The cycle will then be repeated from one year to the next.

(3) Conformity to the development agenda

The development agenda of Mongolia has been summarized as the “Millennium Development Goal (MDGs) based Comprehensive National Development Strategy of Mongolia” in 2008. Further, in November 2008 the government consolidated the “Action plan by the government 2008-2012” which stipulates priorities on development of mining industries, promotion of manufacturing industries, enhancement of agro-products self-sufficiency, improvement of citizens’ welfare and human resources development and promotion of transparency in public sectors.

With regard to the welfare of the citizens, as previously mentioned it has been promoted the “100,000 houses construction program” since 2005 with gradual enhancement, which exposes a higher priority of housing construction among various issues in politics.

With regard to the bilateral aid policy by Japan to Mongolia, it has been in conformity with the above referred development strategy to prioritize development of water, electric power and gas supply networks while housing construction has not been listed.

It should mean that housing construction should be handled by the private sector. Under such circumstances promotion of housing construction through private investment means the investment goes along with the

development agenda, which verifies validity of the project to be in line with the development policy objectives.

3. Country, area and city of investment

(1) Target area

The target area of the project will be Ulanbaatar city (UB) in Mongolia and its suburb area.

(2) Justifications to select the target area

Construction business in the city of Ulanbaatar, where the climate in winter is severe, has boomed for the last few years due to strong demand based on the country's rapid economic development. Capacity of local contractors remained insufficient leading to foreign contractors from China and/or Korea to find room to take part in the market. Since Takagumi thought that UB is a market where construction technologies for cold climate would be needed and that they have technical advantages to local/foreign contenders, they selected UB as the target area of the business.

4. Investment climate

(1) Politics

Mongolia has carried out national / UB city parliament election in August 2012 where people's party, the former ruler lost its majority, and the democratic party of Mongolia has formed a new government. A new legislation on foreign investment has been affected just before the election to limit foreigners' share below 49% with regard to mining development, financial services and telecommunication. Since it has been said that the new legislation may consist a part of new policy to regulate foreign investment, together with another political opinion to revise existing tax treaties, it should be cautiously monitored for further development, especially whether the construction subsector may be affected.

(2) Macro economy

The economy of Mongolia has been driven by the strong economy of China and experienced rapid growth exceeding 10 % per annum. It has been said that the mining industries such as newly developed Oyu-Torgoi copper mine would further support constant development of economy during 2012.

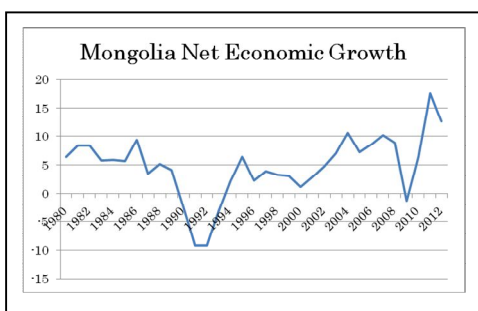


Chart 1 Economic growth, Mongolia (http://ecodb.net/country/MN/imf_growth.html#ngdp_rpch)

Nominal GDP growth in 2011 was 17.3% per annum, when inflation was approx. 10.2%. Accordingly real GDP growth was estimated as approx. 7% per annum.

With regard to the construction subsector, the local market was extremely strong in 2012 and it has been said that within UB there were more than 200 construction projects carried out simultaneously.

(3) Business environment

a.-1 Policy and institutional infrastructure

Although the new investment law has been implemented and has created new concerns, the market has still been open to foreigners who are demanded to invest more than US\$ 100,000 to establish a company with a comparatively easier application process. In the meantime it has been said that construction business licenses would take time with rather complicated procedures, which includes inspection on cranes and other construction equipment.

Taxation has also been simple to be 10% of net profits which is applied to less than 3 billion Mongolian Tugriks (MNT). Withholding tax for capital repatriation is also 10% and it fits to small/medium scale investment. Meantime there is no such guarantee on policy to prioritize small and medium foreign investors, it should therefore be taken as a risk factor to invest in Mongolia, for which continuous effort of intelligence work would remain indispensable.

As of the end of year 2012, Japan and Mongolia have no bilateral tax treaty. Since the government of Mongolia has indicated an interest to revise existing treaties with other countries in reference to the terms and conditions which are said to be not mutually benefiting, the negotiation between Japan may possibly be affected to remain stagnant. In this perspective Takagumi has to prudently deploy measures to avoid double taxation.

a.-2 Infrastructure

a.-2-1 Roads

Road traffic as a whole may be listed as a common challenge of the country's business environment, however it has been said that the following measures have worked to improve the situation; such as 1) a new standard of road construction has been introduced which simulates US construction standards, 2) new administration of UB city started to regulate the number of vehicles in reference to license plate numbers from a day to the other, and 3) exclusive use of right lanes of major roads have been prioritized for buses only.

Completion of the third bridge (the Sun bridge) over Tor river which runs across the city of UB by Japan's ODA is said to mitigate traffic congestion to a certain extent, as well.

Concerning construction industries, heavier vehicles are prohibited to be driven through public roads during daytime, and it would be a challenge to improve efficiency of resource distribution. Accordingly night work will increase and construction management may mean night shift management. It may not be foreseeable to improve traffic condition in 3 years time therefore cranes may not be transported by road during daytime.

a.-2-2 Power supply

Presently the power plants No. 3 and No.4, which supply electric power to UB, are equipped with outdated facilities dating from the age of the Soviet Union, with low energy efficiency and also atmospheric air pollution due to usage of coal, which has been a serious issue.

As of the end of 2012 electricity prices in UB are 88MNT/Kwh for industries and 84MNT/Kwh for civil use.

a.-2-3 Water supply and sewage

Water supply in UB has totally been relying on rich underground water and surface water from Tor river. Recently water quality came to be an issue due to the rapid increase of population in Ger zone, yet the quantity of water supply has not been an issue, including supply capacity for industrial use, so far.

Sewage treatment facilities have not been modernized. In order to prevent future contamination of underground water by urbanization, it has been envisaged to update the sewage processing capacity at the earliest possible opportunity.

a.-3 Wages

The local labor market has been on constant escalation. Labor cost of construction subsectors are with the same tendency of upward market and labor piracy by offering higher wage, as a commonality. This has been said to be an obstacle of quality assurance of building construction.

5. Business strategy

(1) Business outline

Based on a marketing concept to “target the middle class who demand newly constructed houses”, “offer energy-efficient houses built with Japanese technologies” and “price the houses with market average”, Takagumi will start a project with a partner who has consolidated project of development.

a. Target market

a.-1 Marketing segmentation

Primary target of the project will be housing construction for middle class population in suburban areas of UB, in reference to the 100,000 houses construction program by the government. It has been said that the luxurious market came to saturate and recent statistics shows average size of newly constructed houses came to be smaller.

The study has clarified that target segmentation in UB could be recognized as shown on the chart 2, which is based on information obtained through various hearings in UB. Since it is not based on official statistics, the use of the chart should be limited to confirmation of market volume for Takagumi’s project only.

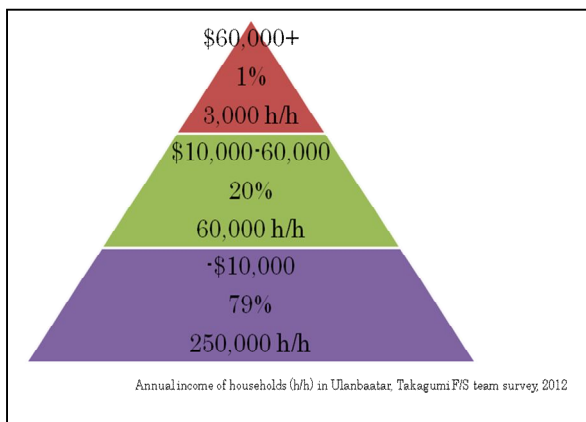


Chart 2, Assumable market segmentation in Ulanbaatar (Nov 2012 based on information from Company M)

It has been said that the middle class (annual income between \$10,000 and 60,000) came to prefer new houses in suburb area to city centre, due to strong market of real estate and depletion of adequate vacancies in centre of the city.

Table 1, example of needs on houses by middle class families

	Middle class, city inhabitants	Middle class, suburban area inhabitants
Basic needs	Commutation to school/work, reasonable price, comfortable	Convenient room allocation, enough space, reasonable price, comfortable

	heating. Second hand vacancies acceptable	heating New houses are preferred
Challenges of purchasing	High price, bad reputation on word-of-mouth	High price, bad reputation, detailed order neglected by contractor which accelerate dissonance

2012.9. hearing in UB

A few different sources endorsed the above referred analysis and therefore the direction of the business looks to be in line with the observation.

b. Characteristics of products and technologies

b.-1 Certified housing construction technologies in Hokkaido

Experts seconded by Takagumi will instruct engineers of contractors and foremen with regard to a variety of construction technologies verified in the market of Hokkaido. Such tendency has not been commonly observed in Mongolia, including foreign contractors from China and/or Korea.

b.-2 Direct technical instruction on site, including site management

For the above mentioned purpose, Takagumi will field her experts via a locally established affiliate company to the JV. All candidates at Takagumi have worked for more than 15 years to manage construction project on site, and are technically qualified to be engaged with technical instruction.

(2) Market analysis

a. Candidates of JV partner

While plural candidates of the partner company were interviewed, there came to be 3 candidates who offered apartment construction for the middle class.

Out of the 3, P1 company was selected as the primary candidate for the time being, yet depending on approval/endorsement by the government, Takagumi reserves the first right of refusal to change the partner to P2 or even P3 company.

b. Contenders

In addition to local contractors who are active in the local market of Mongolia, there are Chinese and/or Korean contractors and a few Japanese affiliated companies. The local contractors are far below Takagumi in terms of construction technology level, and the Japanese are just a few in number and all are engaged with the luxurious market which has deprived them of extra capacity of operation to aim at the middle class market.

With regard to the Chinese/Korean companies, it has been endorsed by the EBRD regional office in UB (Ms. S. Baasansuren) that as of summer in 2012 they are mostly engaged with luxurious market and marginal interest has been shown to go into the lower market of 100,000 house construction program.

Yet the days may change to have those potential competitors coming into the same market segmentation. Therefore constant and continuous intelligence work should be encouraged.

(3) Characteristics and strength of the project

The project is to formulate a joint venture between Takagumi's local affiliate company and local partner in Mongolia to build and sell apartment houses for the middle class market, where Takagumi will field its experts to the affiliate company for technology transfer.

Takagumi's comparative advantage stems from 1) sophisticated construction technology against the local companies, 2) higher precision of construction and reliable construction procedures in comparison to the Chinese or the Koreans. Though the project has no clear-cut advantage in terms of cost, it may still envisage achieving higher quality with comparatively lower budget of construction, by enhancing higher level of construction management and long term employment of workers who ought to be equipped with higher efficiency. Labor piracy by mining industries may become an issue, while it is also true that certain contractors in Mongolia have appealed to their workers of stable job opportunities in order to secure long term deposit of human resources. Takagumi will be pleased to assist those who are committed to seek for long term employment and constant labor supply, to which Takagumi's technology transfer may provide positive input.

(4) Business plan

a. Business plan for initial 3 years

JV's business plan will be as following table (table 2). Since Takagumi is a new player in the market, priority should be given to secure profit with minimal risks, without seeking for expansion of its business beyond the target.

Table 2, business plan for 3 years

	2013	2014	2015
Sales	To seek for exhaustive sales of the apartment houses for year 1	To seek for exhaustive sales of the apartment houses for year2	To seek for exhaustive sales of the apartment houses for year3
Market share	Not necessarily pursue.	Not necessarily pursue.	Not necessarily pursue.

(5) Business model

a. Business formation

The project will be implemented by a JV between a local partner and Takagumi's local affiliate company.

Candidate of main contractors are C1 company or C2 company whom Takagumi examined of technical qualification through the feasibility study. Both of the companies have rather higher interest in Japanese technologies and are equipped with sufficient experiences to be deployed as a main contractor.

b. Procurement of raw materials, consumables and equipment

As a finding through the first visit, there are basic channels of material/equipment supply which are import agents of international supply chains. Although demand of construction projects differs from one to the other, it would be possible to import Japanese brands manufactured and marketed in China in the form of "lot purchases" for each project.

Either local purchase or import from cheaper market would help the project to reduce the cost, while indispensable items will be procured from Japan (scales, ink-bottle and electric tools for carpenters).

c. Schedule of construction

From 2013 to 2015 the JV will construct apartment houses of identical design (30 household per building, 1 building per year) which has been planned by P1 company in UB.

d. Sales and marketing

Since P1 company, the assumed partner of JV, has rich experience of marketing houses in UB, the JV will count on their sales channels. They would use advertisement in papers and magazines to attract prospects, guide promising respondents to construction sites and win contracts through individual negotiation. Payment will be made in 2 separate installments, at signing the contract and upon handing over the residence on completion of construction.

Planned sales of the houses are as shown on the following table.

Table 3, annual sales program for 2013; same cycle to repeat for 2014 and 2015

	Type	Size (square meter)	Completion + Sales			
			1Q	2Q	3Q	4Q
1	A	39				5
2	B	32.7				5
3	C	38.2				5
4	D	38.2				5
5	E	45.4				5
6	F	38.3				5
7	GF	200.0				1
10	Parking	8 cars				8

6. Project implementation plan

(1) Formation of project implementation

a. Affiliated company in UB

The affiliated company will start its operations in a rented office at the P1 company's head office. Takagumi president will concurrently serve as the president of the affiliated company, and will examine the project implementation at least twice every quarter. The fielded expert will manage the office and he will be responsible for not only the construction management on site, but also for cash flow management at the office. The office would hire a local accountant. Since management of cash flow has been habitually practiced at satellite offices of construction projects in Japan, there would be no problem for the fielded experts to undertake the same practice in UB.

b. JV company

Takagumi management will maintain close communication with P1's president and the fielded expert by using Skype, which should help solve minor problems.

c. Human resource allocation, recruitment and development

During the past 18 months 7 technical staff-members of Takagumi have visited Mongolia (3 of them visited more than twice). 2 or 3 individuals will consequentially be selected as the final candidates of the experts to be fielded to UB, for whom terms of references would have to be consolidated soon. Those fielded experts will have to be engaged with technical instruction in order to upgrade Mongolian workers' quality of work. If possible the instruction ought to be continued for 3 years and make engineers of contractors and workers to be familiar with Japanese style of construction work.

7. Risk analysis

(1). Assumable variation of risks

Assumable risks are listed in order of apprehension

a.-1 Political and legislative risks

The case of newly imposed regulation on foreign capital by the investment law in 2012, which affected on foreign investors in mining, finance and telecommunication subsectors, ought to be recognized as unforeseeable risks for construction industries as well. Continuous effort of intelligence, by exchanging information with Japanese chamber of commerce, government agencies and consultants would be indispensable to mitigate the risk.

a.-2 Financial risk

In Mongolia as of November 2012, the commercial rate of loan stays around 20% per annum. Due to comparatively higher rate, housing loans are not widely used and hurdle rate of business planning stays also high, which is the biggest challenge to plan business expansion. Although the market has been stable for months and risk factors are not very volatile for the time being, yet the rate is high enough to be taken as a risk.

a.-3 Procurement risk

Usually procurement of materials and equipment would consist 60-70% of total construction cost, and it has been confirmed that both price and delivery would have some risk factors. Items other than cement and concrete, which are not available from somewhere else than designated cement/concrete suppliers, may be introduced from alternative suppliers and it may mitigate a certain extent of the risk, and competitors would have to face against the same risk since they are working in the same market and because of the nature the procurement risk may not just affect the JV of Takagumi only. Yet the market of procurement has to be carefully observed in order to avoid the risks caused by market volatility and store management ought to be instructed to the contractor who would be responsible for the inventories.

a.-4 Macro-economic risk

At this moment the Mongolian economy looks stable, however 1) mono-cultural operation on mining industries, 2) slightly loose financial management of the government, and 3) recent change of administration, it should be taken that there always exists risk of volatility. It has just been 4 years since IMF support saved the country, a continuous attention should be paid onto macro-economic indicators. In this sense the Japanese chamber of commerce in UB as well as the embassy of Japan would help to exchange information.

a.5 Social environment risk

Recently a series of construction accidents came to be observed, some of which were with serious casualties. It has been said that due to short time of construction work, either unreasonable manning or sloppy management of safety control might have been practiced. One of effective measures ought to be technical instruction to local contractors so that the contractors can impose local workers to habitually practice it.

On the other hand, good compliance to regulations may indirectly appeal good quality which may differentiate quality from other contenders. Concerning site possession, the premises have already been owned by P1 company and detention of land may not be a risk factor of Takagumi project.

a.-6 Labor risk

It has been detected that in Mongolia, usually job hopping rate of workers would be rather high, because of mining sectors' strong demand on labor force. Some contractors are concerned on the situation and have tried to secure workers by 1) offering long term employment contract, 2) introducing in-house training opportunities to upgrade technical skills, and 3) family style management to offer comfort and prevent job

hopping. Such contractors can be chosen in order to better make use of Takagumi experts' management know-how and consequentially minimize the risk of job-hopping.

8. Action schedule to launch the business

The project offered by P1 company has already finished the basic design and as from January 2013 the detailed engineering was supposed to have been started.

Action schedule of the project will be as follows;

Jan 2013	Start of detailed engineering, selection of main contractor and start of sales
February	JV contract, main contractor contract, purchase order of items with longer lead time
March	Final quotation of purchasing items, start of construction work and first deadline of sales
June	Second deadline of sales
October	Completion of building construction and inspection
November	Hand over the houses to customers

Even if the P1 company can not be contracted, there still are promising possibilities to form JVs with P2 and P3 company. Therefore Takagumi will further seek for those opportunities without surrendering.