

MONTHLY
STATISTICAL
BULLETIN

MAY
1995

MONGOLBANK
ULAANBAATAR

MONEY SUPPLY

(in millions of togrog) (changes: in percent)

	1988		1989		1990		1991		1992		1993		1994					1995				
	12/31	12/31	12/31	12/31	12/31	12/31	12/31	12/31	12/31	12/31	03/31	06/30	09/30	12/31	01/31	03/31	04/30	05/31				
Currency Issued in Circulation (monthly changes)	526.1	581.1	742.7	2003.0	2896.4	10786.1	13655.6	18863.3	20995.0	21804.8	23276.6	23920.1	24844.7	28667.3	23276.6	23920.1	24844.7	28667.3				
Commercial Banks Cash	-	4.6	5.7	306.7	1057.2	2035.5	2981.0	3380.1	4577.7	3037.6	3121.9	4297.7	2694.9	3558.0	3121.9	4297.7	2694.9	3558.0				
Currency Outside Banks (monthly changes)	526.1	576.5	737.0	1694.3	1839.2	8750.6	10674.6	15483.2	16357.3	18767.2	20154.7	19622.4	22149.7	25109.3	20154.7	19622.4	22149.7	25109.3				
Money (M-1) (monthly changes)	3021.7	3505.0	4749.9	7313.7	7640.2	18548.4	23376.1	30788.7	30999.2	32871.2	37057.3	35655.1	39579.2	42584.3	37057.3	35655.1	39579.2	42584.3				
Currency Outside Banks	526.1	576.5	737.0	1694.3	1839.2	8750.6	10674.6	15483.2	16357.3	18767.2	20154.7	19622.4	22149.7	25109.3	20154.7	19622.4	22149.7	25109.3				
Private Sector Demand Deposits (BoM)	384.0	411.0	573.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Public Sector Demand Deposits (BoM)	2111.6	2517.5	3342.3	27.3	11.2	40.6	24.5	73.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Demand Deposits (Commercial Banks)	-	-	97.0	5592.1	5769.8	9757.2	12677.0	15231.7	14581.5	14104	16902.6	16032.7	17429.5	17475	16902.6	16032.7	17429.5	17475				
Quasi Money (monthly changes)	1752.5	1577.9	883.2	2601.1	5412.1	24215.8	28390.0	32766.8	47411.1	43905.8	44556.5	52076.2	51669.4	53868.9	44556.5	52076.2	51669.4	53868.9				
Time Saving Deposits	1585.3	1478.0	726.3	1996.9	4430.2	10103.1	13758.9	19322.6	24230.0	28937.5	30350.9	33756.9	35354.7	35998.1	30350.9	33756.9	35354.7	35998.1				
Individuals	750.8	765.2	726.3	1553.3	2985.7	7969.6	10980.4	15450.0	20323.6	25287.3	26683.9	29995.6	31241.5	32135.2	26683.9	29995.6	31241.5	32135.2				
Enterprises	834.5	712.8	-	443.6	1444.5	2133.5	2778.5	3872.6	3906.4	3650.2	3667	3761.3	4113.2	3862.9	3667	3761.3	4113.2	3862.9				
Foreign Currency Deposits	167.2	99.9	157.0	604.2	981.9	14112.7	14631.1	13444.2	23181.1	14968.3	14205.6	18319.3	16314.7	17890.8	14205.6	18319.3	16314.7	17890.8				
Money (M-2) (monthly changes)	4774.2	5082.9	5633.1	9914.8	13032.3	42764.2	51766.1	63555.5	78350.3	76777.0	81613.8	87731.3	91248.6	96473.2	81613.8	87731.3	91248.6	96473.2				
						1.2	8.1	7.3	11.5	-1.7	6.3	2.1	4.0	5.7	6.3	2.1	4.0	5.7				

Source: BoM (SRD)

CONSUMER PRICE INDEX

Group of Goods	1991				1993				1994				1995			
	10/1/16	12/31	12/31	12/31	10/3/31	06/30	09/30	12/31	10/3/31	06/30	09/30	12/31	10/1/31	08/31	04/30	05/31
		100.0	134.4	755.4	1308.4	1674.8	2024.3	2247.0	2793.0	2779.9	3164.6	3565.3	3674.9	4030.6	4066.9	4329.57
Food Stuffs	100.0	136.4	468.3	880.3	1289.6	1913.3	1744.3	1970.1	2279.9	2992.9	2723.1	2795.1	3537.9	3477.8	3855.9	
Meat, Meat products	100.0	156.3	884.2	1769.8	1592.5	1715.7	2153.2	3348.5	2231.3	2570.5	3658.8	4176.8	4426.8	4371.8	4066.8	
Milk, Dairy products	100.0	124.0	978.4	1638.5	1663.8	2525.5	2906.7	3228.4	3282.1	3298.7	4147.5	4244.9	4294.3	4359.6	4509.3	
Flour, Bakery	100.0	131.4	828.9	1468.3	2335.3	2342.1	2736.5	3600.2	3732.6	4161.9	4681.4	4745.4	5060.5	5238.8	5840.4	
Other	100.0	126.9	800.1	965.8	1009.5	1172.2	1424.5	1502.2	1513.4	1538.6	1855.4	1744.3	1829.1	1791.3	1700.8	
Soda, Cigarettes	100.0	192.4	679.1	724.5	876.3	970.4	1304.3	1451.8	1767.7	2097.0	2363.1	2398.7	2643.7	2583.8	2654.5	
Clothes and Shoes	100.0	148.4	676.3	873.7	997.0	1184.9	1161.6	1162.2	2335.8	1964.9	1957.5	2103.6	3552.0	3532.6	3532.6	
Fabric	100.0	174.5	347.3	455.6	484.1	570.4	650.4	904.5	1182.5	1291.1	1259.4	1259.4	1259.4	1259.4	1265.0	
Men's Clothes	100.0	229.3	541.2	588.1	641.6	708.3	896.4	1033.4	1033.2	1862.8	2110.3	2076.3	2076.3	2173.1	2318.3	
Women's Clothes	100.0	173.5	397.1	543.2	581.7	579.8	743.5	756.3	839.1	902.6	972.1	980.9	998.6	1006.8	1030.4	
Wear	100.0	100.0	440.9	551.3	921.4	787.5	1404.4	1702.5	1992.3	1996.2	2126.9	2085.3	2123.6	2151.9	2120.5	
Children's Wear	100.0	236.1	965.4	883.3	1070.2	1252.4	1782.9	1976.1	2184.7	2837.4	3377.3	3437.4	3502.2	3307.9	3439.2	
Shoes	100.0	115.5	245.8	284.9	901.7	1066.7	1068.3	1195.4	1206.8	1209.4	1595.7	1604.2	1618.5	1618.5	1644.4	
Rent and Price of energy	100.0	209.6	795.8	1071.7	1240.2	1615.5	2087.2	2777.1	2678.5	3102.4	3247.2	3393.2	3694.9	3715.3	4281.0	
Housing Goods	100.0	100.0	196.7	226.4	487.6	765.5	1933.9	1905.4	1933.9	1933.9	1933.9	1933.9	1933.9	1933.9	1933.9	
Medicine	100.0	137.3	535.3	738.3	1673.3	1673.3	1673.3	1683.1	1683.1	3059.2	3221.1	3261	3261.1	3261.1	3261.1	
Transport & Communication Costs	100.0	277.3	581.0	989.0	1407.1	2049.7	2154.8	2834.2	2867.9	3759.3	4427.9	5389.2	5450.5	7114.2	7114.2	
Articles for Cultural Needs	100.0	152.3	430.2	577.3	1030.7	1038.0	1483.8	2063.1	2230.9	2382.1	2904.7	2920.2	2962.6	3022.1	3084.5	
Other Goods and Services	100.0	152.7	649.8	979.0	1359.5	1610.0	1838.7	2225.2	2292.6	2703.0	3057.8	3166.6	3410.6	3483.2	3654.4	
General CPI	100.0	152.7	281.5	424.2	589.1	697.6	796.7	964.1	993.3	1171.1	1324.9	1372.0	1477.7	1509.2	1583.4	
Monthly Changes																

Source: SSO

MONETARY SURVEY

(in millions of tegrog)

A S S E T S	12/31/90	12/31/91	12/31/92	3/31/93	6/30/93	9/30/93	12/31/93	03/31/94	06/30/94	09/30/94	12/31/94	01/31/95	03/31/95	04/30/95	05/31/95
Foreign Assets	-331.6	495.4	-27.0	5510.2	10116.0	9484.6	23395.7	26334.1	31497.5	36447.2	29699.3	32938.4	28747.3	26769.1	28954.7
Domestic Credit	6988.6	10971.2	16078.2	17960.7	24931.5	29947.7	24460.3	29501.3	32689.9	42609.6	49190.3	56920.1	58732.3	67399.2	68207.9
Claims on Central Government (Net)	-1191.6	-1883.7	-3051.7	-4692.3	-5507.2	-5420.3	-7143.4	-6922.0	-9491.4	-4124.9	-3773.1	-2114.8	-2192.1	-1859.2	-2406.8
Claims on Public Enterprises	7664.4	9779.6	12204.2	13264.9	19690.8	24466.8	21744.4	12892.7	13443.3	14423.8	12193.3	12896.7	11562.9	14583.9	15507.9
Claims on Private Sector	515.8	3075.3	6925.7	9388.1	10747.9	10901.2	9859.3	23552.3	28712.4	32158.3	40638.0	45901.5	49136.0	54413.0	54931.8
Claims on NonBanks Financial Institutions								19.5	6.8	17.0	7.8	112.4	101.2	137.2	50.7
Share & Promissory note								18.8	18.8	135.4	124.3	124.3	124.3	124.3	124.3
L I A B I L I T I E S	12/31/90	12/31/91	12/31/92	3/31/93	6/30/93	9/30/93	12/31/93	03/31/94	06/30/94	09/30/94	12/31/94	01/31/95	03/31/95	04/30/95	05/31/95
Money	4749.9	7313.7	7640.2	9100.0	12941.3	16876.7	18548.4	23376.1	30788.7	30918.8	32871.2	37057.3	35655.1	39579.2	42584.3
Quasi-Money	883.2	2601.2	5412.1	9038.3	17736.7	20479.8	24215.8	28390.0	32766.8	47411.1	43905.8	44556.5	52076.3	51669.5	53888.9
Long-Term Foreign Liabilities	0.0	1981.7	3809.5	13277.2	9663.2	9402.6	9054.4	9345.8	10148.4	8476.2	7452.1	7478.7	7787.9	6608.5	6752.3
Other Items (Net)	1023.9	-430.0	-810.6	-7944.6	-5293.7	-7326.6	-4002.6	-5276.5	-9516.5	-5769.3	-5339.5	766.0	-8039.7	-3688.9	-6062.9

MONETARY AUTHORITIES (For Monetary Survey)

(in millions of togrog)

A S S E T S	12/31/90	12/31/91	12/31/92	3/31/93	6/30/93	9/30/93	12/31/93	03/31/94	06/30/94	09/30/94	12/31/94	01/31/95	03/31/95	04/30/95	05/31/95
Foreign Assets	834.3	1989.0	2212.3	4101.0	16684.8	14511.6	25615.6	29435.6	44803.7	43407.7	42589.0	45163.0	44421.8	43343.5	43640.2
Claims on Central Government	144.8	82.0	0.0	0.0	0.0	0.0	759.2	8502.7	5406.4	6064.4	6405.3	6519.9	6423.1	6293.1	5824.4
Claims on Public Enterprises	7549.8	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Claims on Private Sector	478.5	2.8	1.3	1.2	5.1	10.1	9.2	10.2	17.3	17.6	6.5	8.4	10.1	11.2	11.4
Claims on NonBanks Financial Institutions								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Claims on Deposit Money Banks	0.0	1528.5	6152.7	5916.5	6810.2	7210.8	6637.3	5882.9	9464.9	11787.2	10374.9	12717.6	10516.5	10714.2	11010.7
L I A B I L I T I E S	12/31/90	12/31/91	12/31/92	3/31/93	6/30/93	9/30/93	12/31/93	03/31/94	06/30/94	09/30/94	12/31/94	01/31/95	03/31/95	04/30/95	05/31/95
Reserve Money	4661.52	2068.1	5316.2	5620.4	6879.3	11327.5	14277.1	21507.4	27196.0	34324.2	29139.1	31515.1	27491.4	30028.9	31060.2
of which: Currency Outside Banks	737.0	1694.3	1839.2	2512.7	3515.1	6401.4	8750.6	10674.6	15483.2	16357.3	18767.2	20154.7	19622.4	22149.7	25109.3
Deposit Money Banks Cash	5.7	308.7	1057.2	589.4	550.0	1183.7	2035.5	2839.0	3380.1	4577.7	3037.6	3121.9	3441.8	2676.6	2728.6
Deposit Money Banks Deposit	3.0	37.8	2408.6	2357.2	2751.5	3678.6	3450.4	7969.3	8258.9	13389.2	7334.3	8238.5	4427.2	5302.6	3222.3
Private Sector Deposits	573.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Public Sector Deposits	3342.3	27.3	11.2	161.1	62.7	63.8	40.6	24.5	73.8	0.0	0.0	0.0	0.0	0.0	0.0
Time Savings and Foreign Currency Deposits	883.2	0.1		530.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BoM Bill	1165.7	0.0	13.9	13.9	15775.6	14912.8	15219.8	13000.5	23270.5	23355.9	25632.2	27784.1	25966.4	22766.4	23686.6
Foreign Liabilities				0.0	9663.2	9402.6	7790.9	7997.1	7929.6	7832.0	7054.6	7079.8	7372.5	6608.5	6746.1
Long-Term Foreign Liabilities				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Central Government Deposits	1336.4	784.4	1201.8	2142.1	1722.2	481.0	633.6	9666.2	8711.7	5632.1	2465.1	1905.8	383.2	348.2	656.7
Capital Accounts	210.4	3070.4	3264.3	2769.5	11101.3	14428.1	1479.9	1894.2	2137.3	3920.6	3047.0	3040.2	3017.0	3553.4	6263.5
Other Items (Net)	-14.4	-2331.4	-1429.9	-1037.6	-21661.5	-28819.5	-7885.0	-12234.0	-13652.8	-13187.9	-10069.3	-8006.1	-6569.0	-5053.4	-8046.4

DEPOSIT MONEY BANKS (For Monetary Survey)

(in millions of togrog)

	12/31/90	12/31/91	12/31/92	3/31/93	6/30/93	9/30/93	12/31/93	03/31/94	06/30/94	09/30/94	12/31/94	01/31/95	03/31/95	04/30/95	05/31/95
A S S E T S															
Reserves	1.6	345.5	3023.5	3051.3	3410.1	5030.4	5690.3	10746.5	11678.2	17069.7	10319.1	11007.2	8787.1	8032.0	6313.7
BoM Bill						1500.0		2000.0	4100.0	0.0	2106.0	1090.0	3710.0	2110.0	120.0
Foreign Assets		3214.6	2090.6	7287.5	13488.4	13587.6	16325.2	13306.0	14247.8	22675.1	17271.4	20973.9	15641.3	12678.1	15422.9
Claims on Central Government		5.0	99.9	220.0	475.4	578.9	232.7	579.1	722.9	2245.2	737.4	521.8	740.9	855.1	1064.8
Claims on Public Enterprises	114.6	9779.6	12204.2	13244.9	19690.8	24466.8	21744.4	12832.7	13443.3	14423.8	12193.3	12896.7	11562.9	14583.9	15507.9
Claims on Private Sector	37.3	3072.5	6924.4	9386.9	10742.8	10891.1	9850.1	23542.1	28695.1	32140.7	40631.5	45893.1	48125.9	54401.8	54920.4
Claims on NonBanks Financial Institutions								19.5	6.8	17.0	7.8	112.4	71.4	137.2	50.7
Share & Promissory note								18.8	18.8	135.4	124.3	124.3	124.3	124.3	124.3
L I A B I L I T I E S															
Demand Deposits	97.0	5592.1	5789.8	6426.2	9363.5	10411.5	9757.2	12677.0	15231.7	14581.5	14104.0	16902.6	16032.7	17429.5	17475.0
Time Savings & Foreign Currency Deposits	0.0	2601.1	5412.1	8507.9	17736.7	20479.8	24215.8	28390.0	32766.8	47411.1	43905.8	44556.5	52076.3	51669.5	53888.9
Foreign Liabilities	0.2	4708.2	4316.0	5864.4	4261.6	3701.6	3325.3	3407.0	4283.5	4279.7	4528.9	5414.4	5349.4	6486.1	6421.8
Long-Term Foreign Liabilities		1971.0	3809.5	13277.2	0.0	0.0	1303.5	1348.7	2218.8	644.2	397.5	398.9	415.4	0.0	6.2
Central Government Deposits		1186.3	1949.8	2770.2	4260.4	5518.2	7486.7	6337.6	6909.0	6802.4	8450.7	7250.7	8972.9	8659.2	8639.3
Credit from Central Bank		1522.6	6287.6	5468.1	5547.7	5774.6	5390.9	3751.9	8917.2	11310.0	10151.8	12296.8	10292.2	10634.1	10737.2
Capital Accounts	70.7	1687.9	2641.8	3704.8	5125.9	5731.0	7291.8	9355.2	10375.0	11482.6	12784.2	13305.6	14227.6	15067.6	15301.1
Other Items (Net)	-14.4	-2852.0	-5864.0	-12828.2	1511.7	2938.1	-3438.5	-2261.0	-7814.7	-7957.0	-11064.2	-7742.8	-17798.4	-17285.1	-19119.8

LOANS OUTSTANDING

(in millions of togrog)

	1992				1993				1994				1995											
	06/30		09/30		06/30		09/30		03/31		06/30		09/30		01/31		03/31		04/30		05/31			
Total loans outstanding	14540.1	17956.1	21432.5	19129.9	22653.0	30438.6	35368	31603.7	36404.5	42162.5	46598.9	52859.1	58910.3	60894.5	69133.8	70490.4	58910.3	60894.5	69133.8	70490.4	58910.3	60894.5	69133.8	70490.4
	5.1	6.9	2.4	-11.7	-6.1	-2.6	-4.4	-15.5	-7.7	-5.4	2.3	0.2	11.5	-0.6	13.5	2.0	11.5	-0.6	13.5	2.0	11.5	-0.6	13.5	2.0
Of which by Sectors	11188.5	13189.8	13647.6	12204.2	13264.9	19690.8	24466.8	21744.4	12832.7	13443.3	14423.8	12193.4	12896.7	11562.9	14583.9	15507.9	12896.7	11562.9	14583.9	15507.9	12896.7	11562.9	14583.9	15507.9
To Public Sector	3.5	7.7	-5.4	-10.6	-14.1	-1.1	-1.5	-17.1	-18.7	-20.5	10.2	-4.3	5.8	-22.9	26.1	6.3	5.8	-22.9	26.1	6.3	5.8	-22.9	26.1	6.3
To Private Sector	3351.6	4766.3	7784.9	6925.7	9388.1	10747.8	10891.1	9859.3	23552.3	28712.4	32158.3	40637.9	45901.5	49136.0	54413.0	54931.8	45901.5	49136.0	54413.0	54931.8	45901.5	49136.0	54413.0	54931.8
	10.7	4.7	19.6	-13.7	8.2	-5.2	-10.4	-11.9	-0.1	3.9	-1.0	1.8	13.0	8.8	10.7	1.0	13.0	8.8	10.7	1.0	13.0	8.8	10.7	1.0
To NonBanks Fin. Inst.									19.5	6.8	17.0	7.8	112.4	71.4	137.2	50.7	112.4	71.4	137.2	50.7	112.4	71.4	137.2	50.7
									-59.6	-60.0	93.2	86.2	1341.0	-29.4	92.2	-63.0	1341.0	-29.4	92.2	-63.0	1341.0	-29.4	92.2	-63.0
Of which by Banks	4271.0	4571.3	5551.8	4252.4	4759.9	5468.2	7741.2	6571.7	11568.6	10342.6	12724.3	11407.5	14298.5	14929.8	17363.1	16954.2	14298.5	14929.8	17363.1	16954.2	14298.5	14929.8	17363.1	16954.2
BITI	359.5	518.3	658.1	572.2	776.5	1020.8	1026.4	819.4	873.9	1012.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cooperative Bank	1399.5	2016.6	2784.4	2962.0	3098.2	4482.6	4646.9	3812.3	4155.7	5034.1	5323.9	5379.8	5721.3	5965.2	6573.9	6525.9	5721.3	5965.2	6573.9	6525.9	5721.3	5965.2	6573.9	6525.9
Insurance Bank	267.3	532.9	509.9	1000.0	1040.7	844.3	747.2	514.8	161.8	162.8	213.4	41.7	29.8	14.2	10.4	125.5	29.8	14.2	10.4	125.5	29.8	14.2	10.4	125.5
Industrial Bank	2793.8	4087.3	4933.2	4189.1	4835.0	5593.6	7027.1	6390.9	5222.2	6095.9	6005.8	5071.0	5639.8	5135.0	6032.9	5321.5	5639.8	5135.0	6032.9	5321.5	5639.8	5135.0	6032.9	5321.5
Agricultural Bank	3803.2	4136.3	4704.3	4696.2	5817.3	7468.3	8701.6	8302.1	8624.3	12591.0	16061.7	23160.2	24037.0	26991.4	28580.5	30009.2	24037.0	26991.4	28580.5	30009.2	24037.0	26991.4	28580.5	30009.2
People's Bank	77.8	83.9	96.9	81.9	74.1	101.7	134.3	110.1	106.9	109.8	113.4	129.7	129.8	128.1	123.4	120.2	129.8	128.1	123.4	120.2	129.8	128.1	123.4	120.2
Autoread Bank	1565.7	1891.4	1947.0	1075.9	1649.8	4302.7	3717.9	3316.4	3347.1	4232.9	3753.1	4784.0	5081.1	4243.9	6167.4	6682.7	5081.1	4243.9	6167.4	6682.7	5081.1	4243.9	6167.4	6682.7
Trade and Development Bank		126.6	156.6	155.2	207.2	317.2	433.3	483.9	527.1	640.8	538.2	734.8	740.7	821.6	791.7	918.1	740.7	821.6	791.7	918.1	740.7	821.6	791.7	918.1
Central Asia Bank			88.7	119.4	300.2	381.6	456	557.9	522.3	593.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Selenge Bank				24.3	72.9	74.6	71.7	81.0	78.2	73.2	83.7	89.0	85.9	93.2	74.2	345.9	85.9	93.2	74.2	345.9	85.9	93.2	74.2	345.9
Bayanbogd Bank																								
Post Bank																								
Business Bank																								
Mercury Bank																								
Export Import Bank																								
Golomt Bank																								
BoM	2.3	1.5	1.6	1.3	21.2	5.1	10.0	9.2	10.2	17.3	17.6	6.5	8.4	10.1	85.0	101.0	8.4	10.1	85.0	101.0	8.4	10.1	85.0	101.0

Source: BoM (SRD)

INTEREST RATES

	1992						1993						1994						1995											
	06/30		09/31		12/31		03/31		06/30		09/30		12/31		03/31		06/30		09/30		12/31		01/31		04/30		05/31			
	03/31	06/30	09/31	12/31	03/31	06/30	09/30	12/31	03/31	06/30	09/30	12/31	03/31	06/30	09/30	12/31	03/31	06/30	09/30	12/31	03/31	06/30	09/30	12/31	01/31	04/30	05/31			
DEPOSITS RATES																														
Current accounts																														
Central Government	0.5-1	0.5-1	1	1	1	1	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
State Enterprises	0.5-1	0.5-1	1	1	1	1	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Private Sector																														
Saving Deposit Accounts	4	4	4-15	10-51.6	10-63.8	24-125	24-125	24-100	24-100	24-100	24-125	24-100	24-100	24-100	24-100	24-100	24-100	24-100	24-100	24-100	24-100	24-100	24-100	24-100	24-100	24-100	24-100	24-100	24-100	
Time Deposit Accounts																														
Domestic Currency																														
Between 1 and 3 years	6	18	28	50-70	54-84	60-151.8	90-151.8	70-153	70-153	90-151.8	70-153	70-153	70-153	70-153	70-153	70-153	70-153	70-153	70-153	70-153	70-153	70-153	70-153	70-153	70-153	70-153	70-153	70-153	70-153	
Between 3 and 5 years	8	24	32	50-70	60-84	60-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	125-151.8	
More than 5 years	8	32	40	50-70	60-90.1	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	60-151.8	
Foreign currency																														
Between 1 and 3 years	8	8	10	40	48-60	48-70	15-70	10-72	10-72	48-70	15-70	10-72	10-72	48-70	15-70	10-72	10-72	48-70	15-70	10-72	10-72	48-70	15-70	10-72	10-72	48-70	15-70	10-72	10-72	
Between 3 and 5 years	10	10	12	50	48-60	48-70	15-70	10-72	10-72	48-70	15-70	10-72	10-72	48-70	15-70	10-72	10-72	48-70	15-70	10-72	10-72	48-70	15-70	10-72	10-72	48-70	15-70	10-72	10-72	
More than 5 years	10	12	15	50	48-60	48-70	15-70	10-72	10-72	48-70	15-70	10-72	10-72	48-70	15-70	10-72	10-72	48-70	15-70	10-72	10-72	48-70	15-70	10-72	10-72	48-70	15-70	10-72	10-72	
LOAN RATES																														
Mongobank rate	30	30	100-214	120-240	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	120-300	
Commercial Loans																														
Short Term (Less than 1 year)	15	30	60	100	133	159	197.2	182.5	182.5	197.2	182.5	182.5	182.5	182.5	182.5	182.5	182.5	182.5	182.5	182.5	182.5	182.5	182.5	182.5	182.5	182.5	182.5	182.5	182.5	182.5
State Enterprises	25	40	72	127	169	217	228	215.4	215.4	228	215.4	215.4	215.4	215.4	215.4	215.4	215.4	215.4	215.4	215.4	215.4	215.4	215.4	215.4	215.4	215.4	215.4	215.4	215.4	215.4
Private Business Units	40	50	100	147	207	225	214	222.5	222.5	214	222.5	222.5	222.5	222.5	222.5	222.5	222.5	222.5	222.5	222.5	222.5	222.5	222.5	222.5	222.5	222.5	222.5	222.5	222.5	222.5
Consumer																														
Medium & Long Term																														
1-3 years																														
3-5 years																														
More than 5 years																														

Source: BOM (SRU)

INTEREST RATES APPLIED BY COMMERCIAL BANKS

05/31/1995 (in percent)

BANKS	Deposit rates				Lending rates		
	Domestic		Foreign Currency		Public sector	Private sector	Individuals
	Current	0-1 years	Current	0-1 years			
1. Agricultural Bank	24.0	79.5	12.0	36.0	60-180.0	60-180.0, 60-180.0	
2. BITI	36.0	101.2	-	15-25	60-156.0	60-156.0	60-156.0
3. People's Bank	42.5	42.5-125	6.2	26.8	120.0	120.0	120.0
4. TD Bank	26.8	79.5	6.2	12.7-24.0	48.0-96.0	96-120	120.0
5. Insurance Bank	26.8	79.5	6.0	13.0	72-120.	120.0	144.0
6. Industrial Bank	26.8	79.5	-	-	60.0	60.0	60.0
7. Central Asia Bank	-	51.1-90.1	-	34.4-42.6	-	60-144.0	144.0
8. Bayanbogd Bank	26.8	51.1	-	-	-	60-144.0	60-144.0
9. Post Bank	26.8	79.5	18.0	-	96-180.0	96-180.0	96-180.0
10. Business Bank	42.6	79.5	26.8	42.6	96-180.0	72-144.0	72-144.0
11. Mercury Bank	36.0	79.5	12.0	36.0	36.0	180.0	180.0
12. Export-Import bank	42.6	79.5	12.0-18.0	24.0	120.0	120.0	180.0
13. Golomt bank	-	-	-	-	-	72.0	-

Source: BoM (SRD)

TRADE BALANCE

(Millions of US dollars)

	EXSPORTS					IMPORTS					TRADE BALANCE				
	TOTAL	By group of major countries (in percent)				TOTAL (mil. rub)	Russia	China	G-7	Other		By group of major countries			
		Russia	China	G-7	Other							Russia	China	G-7 countries	Other
1990	95.9 (mil. rub)	81.0	0.7	3.5	14.8	139.9	84.3	2.0	1.8	11.9	-44.0				
1991	297.4	78.7	9.1	6.6	5.6	359.3	74.2	4.6	6.4	14.8	-61.9				
1992	53.5	77.0	8.1	10.3	4.6	61.8	43.7	8.6	24.2	23.5	-8.3				
II	142.5	61.5	11.3	14.1	12.5	158.3	42.7	4.1	9.1	44.1*	-15.8				
III	250.5	57.4	15.2	14.5	12.9	285.3	54.5	5.8	5.4	34.3*	-34.8				
IV	368.0	57.2	16.8	12.9	13.1	400.0	52.4	12.2	18.3	17.1	-32.0				
1993	65.0	74.2	12.8	11.8	1.2	45.4	52.0	24.2	11.5	12.3	19.6				
II	172.5	37.0	25.7	8.7	28.6	128.1	40.8	20.7	30.0	8.5	44.4				
III	243.3	38.6	24.7	4.3	32.3	245.7	63.2	17.6	2.1	17.1	-2.4				
IV	360.9	37.5	30.9	9.8	21.8	361.5	59.7	16.8	13.6	9.9	-0.6				
1994	62.2	34.4	16.2	10.0	39.4	24.4	54.5	10.7	16.0	18.8	37.8				
II	130.7	32.1	20.9	17.8	29.2	73.3	53.6	11.1	18.7	16.6	57.4				
III	225.4	26.3	21.6	20.4	31.7	139.5	57.2	10.0	13.9	18.9	85.9				
IV	324.3	27.7	19.4	21.5	31.4	221.7	57.9	9.7	16.1	16.3	102.6				
1995	39.7	54.7	8.1	7.9	29.6	13.1	73.3	5.3	16.1	5.3	26.6				
2	48.3	18.4	15.9	12.4	53.7	39.9	67.2	6.5	10.3	16.0	8.4				
3	108.7	14.8	11.9	9.8	63.5	57.7	61.5	6.9	16.5	15.1	51.0				
4	148.9	12.8	15.5	16.1	55.6	98.9	70.7	5.7	11.2	12.4	50.0				
5	185.6	12.0	15.2	24.9	47.9	151.9	64.9	6.0	15.7	13.4	33.7				

(Source: SSO)

MARKET RATES

(Foreign Currency Units per Mongolian Togrög)

Currency	Cod	Unit	1993												1994												1995				
			1993				1994				1994				1994				1995				1995								
			10/26	11/19	12/30		01/31	02/22	03/31	04/26	05/27	06/28	07/28	08/24	09/02	10/13	11/25	12/28	02/21	03/25	05/11	05/23	05/30								
Austrian Schilling	ATS	1	33.06	32.88	33.13	32.73	32.61	34.73	34.62	35.52	36.93	37.31	37.86	37.53	37.93	37.62	37.28	40.8852	43.7255	45.8796	44.0638	45.9519									
US dollar	USD	1	391.31	395.00	396.51	402.20	403.00	409.32	409.45	410.48	411.58	413.67	415.90	415.80	410.43	411.96	414.09	424.0000	432.7515	446.4500	448.4428	449.652									
Canadian dollar	CAD	1	299.60	301.31	298.28	303.70	299.71	297.14	297.45	296.11	296.95	299.37	301.92	304.23	304.65	299.78	295.08	303.1819	308.3373	329.7754	327.9527	327.6964									
GB pound sterling	GBP	1	580.55	583.61	592.70	601.08	594.66	606.40	610.28	619.20	636.50	633.61	641.60	642.07	649.50	643.98	639.77	671.0648	692.7053	707.8464	706.611	717.7086									
Italian lira	ITL	1	0.24	0.23	0.23	0.23	0.24	0.25	0.25	0.25	0.26	0.26	0.26	0.23	0.26	0.25	0.25	0.2646	0.2509	0.2745	0.2659	0.2731									
French Franc	FRF	1	66.69	66.77	68.39	67.97	68.58	71.50	70.91	72.88	75.84	76.81	78.20	77.17	77.94	77.13	76.02	82.6671	87.1604	91.7548	87.8231	91.805									
Deutsche marc	DEM	1	232.48	231.19	233.10	230.91	232.98	244.19	243.28	248.97	259.73	262.56	268.20	264.11	266.94	264.89	262.35	287.5551	307.6797	321.372	311.4617	324.358									
Hong Kong dollar	HKD	1	50.63	51.10	51.32	52.08	52.15	52.97	52.99	53.13	53.24	53.54	53.82	53.81	53.11	53.28	53.51	54.8462	55.9652	57.7258	57.9705	58.0043									
Swiss franc	CHF	1	264.06	263.38	275.01	273.51	273.05	288.55	284.48	291.61	308.87	309.74	318.94	314.16	319.77	312.49	310.99	340.2889	371.4605	387.9812	373.9826	393.4853									
Japanese yen	JPY	1	3.61	3.69	3.55	3.65	3.80	3.97	3.96	3.92	4.10	4.19	4.16	4.17	4.10	4.19	4.12	4.3598	4.8981	5.3294	5.1382	5.4253									
Europ. Cur. Unit.	ECU	1	343.96	351.07	349.19	448.57	451.27	470.79	469.80	479.44	497.80	501.28	509.39	504.49	509.01	504.36	498.77	539.8792	561.2354	591.9927	574.8137	597.0212									
SDR	SDR	1	544.85	550.76	549.62	555.88	555.28	572.12	574.97	581.87	594.66	609.25	612.54	608.24	601.06	607.20	602.19	621.4016	668.3847	704.8106	667.5073	693.6015									
Russian rubl	RBL	1						0.22	0.22	0.21	0.20	0.2	0.19	0.19	0.10	0.13	0.12	0.0971	0.0868	0.086	0.0891	0.0898									
PRC yuan	RMB	1								46.27	47.39	46.66	46.91	46.89	49.31	46.49	48.60	50.2738	51.3493	53.7548	54.0559	53.9985									

Source: BoM (TD)

THE GOVERNMENT BUDGET ACCOUNTS

(in millions of togrog)

Total Budget Account	1990					1991					1992					1994					1995					
	Y	II	III	IV	5	Y	II	III	IV	5	Y	II	III	IV	5	Y	II	III	IV	5	Y	II	III	IV	5	
Revenue	6494.2	6065.1	10937.0	55704.3	15007.5	19358.0	57096.7	85397.2	5787.4	24375.2	31709.5	42390.9														
Direct Tax	2061.8	2584.1	5263.6	26025.6	6144.6	10964.1	23973.5	31051.7	2643.7	10185.6	12614.0	17427.2														
Enterprise Income	2011.6	2485.9	5036.0	24804.0	5823.1	10964.1	22841.5	29243.6	2524.6	9374.3	11422.8	15863.9														
Individual Income	50.2	98.2	227.6	1221.6	321.5	1132.0	1808.1		119.1	811.3	1191.2	1563.3														
NonDirect Tax	3479.8	2235.4	3274.9	15164.9	3383.4	3550.1	10559.5	16567.1	1149.9	4509.2	5904.3	7840.8														
Excise & Sales Tax	3479.8	2164.3	3181.2	15164.9	3383.4	3550.1	10559.5	16567.1	1149.9	4509.2	5904.3	7840.8														
Land Fee		71.1	93.7																							
Customs Duties		294.7	1386.2	6578.8	2025.6	4843.8	5703.9	7541.1	650.5	2098.8	2516.5	2881.1														
NonTax Revenues	952.6	950.9	1012.3	4907.8	3098.0		15145.5	26981.6	1263.3	6752.0	9561.0	12605.6														
Foreign Aid			3027.2		356.0		1714.3	3255.7	80.0	829.6	1113.7	1636.2														
Expenditures	6812.3	8929.3	11560.7	56511.4	18483.8		68900.8	97060.6	7392.1	23862.0	31912.9	42342.1														
Material Sector	3032.5	1886.3	907.5	9810.8																						
NonMaterial Sector	3705.2	6245.7	9830.6	33040.8																						
Reserve Fund			510.2	5272.5																						
Other	74.6	797.3	312.4	8387.3																						
Deficit	-318.1	-2864.2	-623.7	-807.1	-3476.3		-11804.1	-11663.4	-1604.7	513.2	-203.4	48.8														
Central Government Budget			6472.9	43854.7	11139.6		43469.3	65593.1	4564.4	19060.3	24438.1	32763.3														
Revenue			5500.1	34986.4	12648.1		55484.3	77791.6	5938.1	14660.6	19557.4	26654.8														
Expenditures			972.8	8868.3	-1508.5		-12015.0	-12198.5	-1373.7	4399.7	4880.7	6108.5														
Deficit																										
Local Government Budget			4464.1	11849.6	3867.9	9336.3	13627.5	19804.1	1223.0	5314.9	7271.4	9627.6														
Revenue			6060.6	21525.0	5835.7	13664.8	20202.1	29701.6	2551.0	9201.4	12355.5	15687.3														
Expenditures			-1596.5	-9675.4	-1967.8	-4328.5	-6574.6	-9897.5	-1328.0	-3886.5	-5084.1	-6059.7														
Deficit																										

Source: MoF, SSO

INDUSTRIAL PRODUCTION INDEX

(1990=100)

(in percent)

Year Month	Month	Electric & Mining			Building mater. industry				Food industry						
		Electricity	Coal	Copper Conc.	Cement	Bricks	Sawn Wood	Carpet	Knifed Goods	Leather Coat	Sheep Coat	Meat, Meat Product	Milk, Dairy Product	Flour	Bakery Goods
1991		96.5	98.0	...	51.5	71.3	53.2	71.1	66.1	83.2	80.8	87.3	82.0	91.9	99.9
1992	I	78.8	96.0	76.9	59.8	39.2	31.5	47.2	39.9	98.8	82.4	53.4	52.2	81.9	89.9
	II	81.5	86.5	...	27.0	39.1	31.8	53.1	35.4	70.4	74.3	46.1	50.8	94.6	95.0
	III	82.8	87.2	83.7	33.9	36.5	30.3	51.7	36.1	104.2	50.4	48.3	48.5	92.2	93.2
	IV	85.5	83.5	84.8	30.1	35.7	24.5	52.6	33.2	112.3	70.5	45.5	54.7	95.8	96.2
1993	I	69.4	84.1	89.5	12.6	25.5	19.9	33.2	29.8	35.9	59.3	5.2	22.2	86.5	75.7
	II	71.5	78.1	94.8	22.8	26.6	19.0	51.6	22.1	69.6	51.2	11.8	21.9	87.4	76.7
	III	73.4	75.9	93.8	24.1	23.5	16.8	46.4	26.1	30.8	32.4	29.3	21.6	76.4	73.1
	IV	75.7	78.4	94.4	18.7	22.1	16.6	50.7	23.3	26.3	62.7	16.2	21.6	73.1	63.1
1994	I	65.8	54.3	94.7	...	15.9	11.8	36.6	14.3	64.1	58.7	14.4	6.0	33.2	43.6
	II	69.6	71.9	...	15.2	15.7	12.9	31.7	15.0	96.2	48.6	15.3	6.7	61.5	53.8
	III	73.3	62.7	95.9	17.0	17.1	15.6	34.5	12.7	98.1	28.5	22.9	8.0	62.6	55.3
	IV	75.4	70.0	97.0	19.5	22.2	9.9	34.6	12.1	98.0	41.3	2.2	8.2	65.5	53.6
1995	1	...	45.7	...	13.2	...	...	...	...	...	...	...	...	...	...
	2	...	43.6	...	18.8	...	11.5	26.7	15.2	43.1	25.4	16.6	2.7	77.0	39.9
	3	65.7	86.3	...	23.0	12.0	9.7	27.5	11.6	46.2	31.4	11.4	2.6	77.3	45.1
	4	...	93.3	...	26.2	...	11.5	21.7	10.2	40.4	21.1	13.5	13.8	79.9	48.3
	5	...	91.6	...	23.0	...	12.4	26.4	13.8	37.7	67.4	12.7	2.0	84.8	50.6

(Source: SSO)

UNEMPLOYMENT

year	month	Economically active population (tho.per.)	Unemployed (in thousand persons)	Unemployment rate (in percent)
1988		836.6	12.2	1.5
1989		879.4	10.3	1.2
1990		927.9	24.8	2.7
1991		976.4	55.4	5.7
1992	3		54.6	
	6		51.9	
	9		54.4	
	12		54.0	
1993	3		55.6	
	6		60.0	
	9		62.1	
	12		71.9	
1994	3		72.5	
	6		73.6	
	9		75.6	
	12		74.9	
1995	1		69.1	
	2		66.0	
	3		62.2	
	4		54.8	
	5		46.9	

(Source: SSO)

Term of Reference

Development Plan of Tavan Tolgoi Coal Deposit

1. Background of the Project

There are enormous coal resources in the Mongolia. These coal resources are an important source of energy and the coal industry is one of the important industries to promote economic activities.

There are three big coal mines (named Baganuur coal mine, Shivee Ovoo coal mine, and Sharyn gol coal mine) and some 20 small coal mines in Mongolia. These three big coal mines are supplying to the power stations of Central Energy System and the general industries. Among these big coal mines, the production of Sharyn gol coal mine is decreasing because of increasing stripping ratio with little remains of reserves. On the other hand, some 20 small coal mines are only supplying to local hot water plants, local general industries and households. Tavan Tolgoi coal mine is one of these small coal mines and the present production is about ten thousand tons a year.

The Tavan Tolgoi coal field is located the settlement Tsogttsetsii in the South Gobi province, 540 km south of Ulaanbaatar. The nearest railway stations are Choir, Khar Airag and Sainshand and are located at a distance of about 420-450 km. As per the geological survey data, the coal reserves of Tavan Tolgoi is estimated at approximate 6,29 billion tons. Although most of the coal deposit in the Mongolia belong to steaming coal, the Tavan Tolgoi coal deposit belongs to coking coal. And so the coking coal midding coal as a by-product will be produced by washing the row coal. It is estimated that the coking coal of 2,144 billion tons is available in the favored mining conditions. The raw coal is possible to sell as steaming coal.

The coking coal is one of the important products to export and the midding coal and the raw coal are energy source for power stations, general industries and households. The development of Tavan Tolgoi coal deposit is one of a little projects that can obtain foreign currency and one of coal mines that can supply the high calorific coal to domestic customers after Sharyn Gol coal mine is closed. Therefore the development of Tavan Tolgoi coal deposit has been the main concern of government.

2. Object of the study

The ultimate objection of the study is to prove sufficiently the feasibility of the project from technical, economic and financial aspects.

3. Scope of the study

The scope of the proposed study is as follows:

- a. Study for the middle-long term foreign coking coal demand and the middle-long term domestic steaming coal demand
- b. Preliminary study for transportation routes to neighbor countries and distant countries via neighbor countries based on existing data.
- c. Feasible study for the development of Tavan Tolgoi coal deposit

In detail, the scope of the study is composed of phase I and II.

Phase I: The coal demand and transportation

- a. Study for middle-long term coking coal demand in neighbor countries
- b. Study for middle-term steaming coal demand in Mongolia
- c. Preliminary study for the transportation route to export to neighbor countries
- d. Preliminary study for the transportation method and route to supply to power station and general industries

Phase II: feasible study for the development of Tavan Tolgoi coal deposit

- a. Evaluation of topographical and geological data
- b. Investigation of mining system and equipment
- c. Investigation of surface facility (especially washery)
- d. Planning of infrastructure
- e. Planning of development schedule
- f. Environmental impact assessment
- g. Financial and economical evaluation

4. Time schedule for the study

The time schedule for the study is as follows;

Preliminary mission October, 1995
Preparatory mission March, 1996
Start of the study October, 1996
End of the study March, 1999

The period of the study is 30 months. Details are shown in attachment.

5. Reports

The following reports should be prepared within the period specified below:

1. Inception report should be completed within the first month of study. It should describe the detailed approach and methodology for the study.
2. Progress report should be completed within 12 months after the commencement of the study. It should summarize the results; (phase I) of the study to date of the site visits and survey.
3. Interim report should be completed within 18 months after the commencement of the study. It should summarize the results (phase II) of the study to date and of the site visits and survey.
4. Draft final report should be submitted within 24 months after the commencement of the study. It should be presented to MEGM and other related agencies officials for review and comments.
5. Final report should submitted within 30 months after the commencement of the study. It should incorporate review and comments from the draft final report presentation.

6. External and government inputs

1. External inputs

- a. 100 man-months experts
- b. Survey costs

2. Government inputs

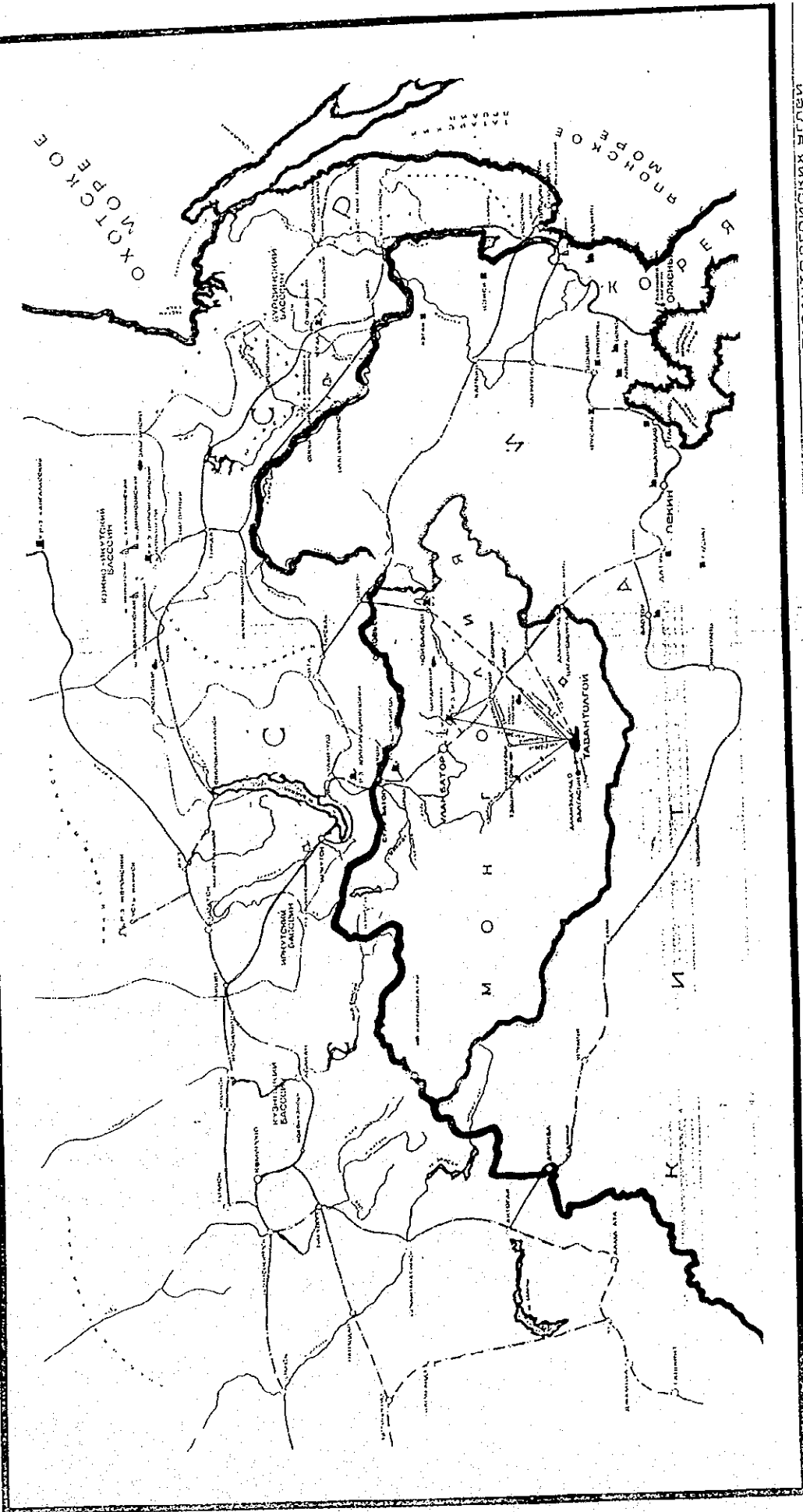
- a. Office space and facilities
- b. Counterpart staff

(Attachment)

Time schedule for the study

Months works item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
< Phase I >																														
1.Coal demand	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*									
2.Transportation method and route							*	*	*	*	*	*	*	*	*	*	*	*	*	*	*									
<Phase II>																														
1.Topographical and geological data							*	*	*	*	*	*	*	*	*	*	*	*	*	*	*									
2.Mining system and equipment												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3. Surface facility												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4. Infra-structure															*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5. Development schedule															*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6.Environmental impact assessment															*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7. Financial and economical evaluation																		*	*	*	*	*	*	*	*	*	*	*	*	*

СХЕМА ТРАНСПОРТИРОВКИ ТАВАНТОЛГОЙСКИХ УГЛЕЙ



РАЗРЕЗЫ	1	ДАЛЫНГАЙ ТРАНСПОРТИРОВКИ ТАВАНТОЛГОЙСКИХ УГЛЕЙ	2820 км
ШАХТЫ	2	ТАВАНТОЛГОЙ-СУХ-БАТОР-НАХОДКА	4900
МЕТАЛЛУРГИЧЕСКИЕ К-ТЫ	3	ТАВАНТОЛГОЙ-СУХ-БАТОР-НАХОДКА	4670
ЖЕЛЕЗНЫЕ ДОРОГИ	4	ТАВАНТОЛГОЙ-СУХ-БАТОР-СВОБОДНЫЙ	6030
ВОДОВОД	5	ТАВАНТОЛГОЙ-СУХ-БАТОР-НЕРЮНГРИ	4730
		ТАВАНТОЛГОЙ-ЭРЛАНЬ-ШИНХУАНДАО	
		ТАВАНТОЛГОЙ-ЭРЛАНЬ-ДРУМБА	
		ТАВАНТОЛГОЙ-НАХОДКА	
		ТАВАНТОЛГОЙ-СВОБОДНЫЙ	
		ТАВАНТОЛГОЙ-СВОБОДНЫЙ	

3 Coal Development Plan

3.1 Review of coal resources in Mongolia

3.1.1 Outline of coal resources

Mongolia is one of the prominent countries having large resources of coal in the world. Coal is found in a total of 15 large-scale coal-bearing basins regions as shown in Figure 3.1. These distributed limits of basins are presumably based on the similarities of each coal deposits and/or coal occurrences in terms of geological peculiarities such as major geotectonic structures, stratigraphical and paleogeographical features, and degree of coalification. In the basins, about two hundred ore deposits and occurrences are known from the whole country. According to the last report by the Department of Geology in 1993, the total geological coal reserves is estimated at 152.2 billion tons in the whole country.

Generation of coal accumulations on the territory of Mongolia occurred during the Carboniferous, Permian, Jurassic and Cretaceous ages, which differ from each other in conditions of coal-bearing deposit, degree of coalification and coal quality. In the process of their formation, the coal-bearing deposits migrated from west to east in ascending order. The most intensive accumulation of coal took place during the Middle-Upper Carboniferous, Upper Permian and Lower Cretaceous times.

All the coal deposits formed under continental environment in areas of intramontane troughs of varying sizes. In terms of geotectonic structure, these deposits are subdivided into two major groups : orogenic and young platform areas. The first group includes all Carboniferous, Permian and Jurassic deposits, and shows usually a rather complex folded pattern representing frequently graben-syncline broken into blocks. The second group comprises the Cretaceous deposits of eastern Mongolia, and is found at low grounds in present geographical features.

With regard to the degree of coalification, the Carboniferous and Permian coals belong to bituminous to subbituminous coals of the medium grade. The Jurassic coals are subbituminous or transitional (to lignites) coals. The Cretaceous ones mostly belong to lignites of the low degree in coalification and partially to transitional (to subbituminous) coals. The classification of coal ranks in Mongolia, USA, and Japan is summarized at Table 3.1.

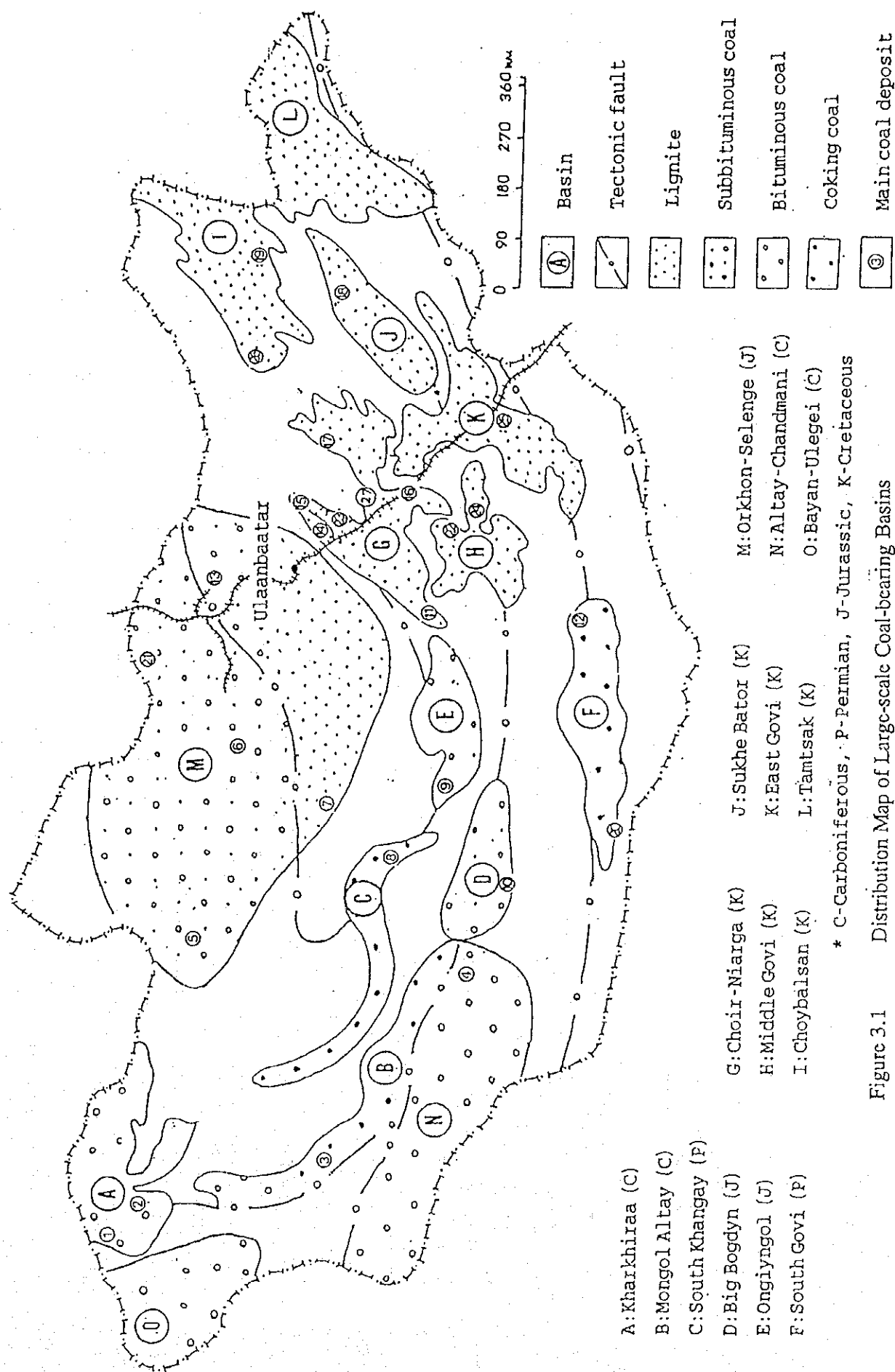


Figure 3.1 Distribution Map of Large-scale Coal-bearing Basins

Table 3.1

Classification of coal ranks

Rank			Ro %	Vol. M. (daf) %	Carbon (daf) %	Bed Moiture %	Cal. Value kcal/kg (Btu/kg)	Applicability of Different Rank Parameters		
Mongolia	U. S. A (ASTM)	Japan (JIS)						bed moisture (af)	carbon (daf)	calorific value (daf)
	Peat		0.2							
			68							
			64		60	75				
	Lignite	Lignite	0.3							
B 1		F	56			35	4,000 (7,200)			
B 2		C	52							
B 3~D	SB	B	0.4		71	25	5,500 (9,900)			
		A	0.5							
D~G	C	SB	0.6		77	8-10	7,000 (12,600)			
G J	B		0.7							
		HV	0.8							
J	A		0.9							
			1.0							
		Bit.								
K~K J	MV		1.2		87		8,650 (15,500)			
		B	1.4							
			20							
OC	LV		1.6							
		Anth.	1.8							
		A 2	2.0							
T	Semi Anthracite									
			8		91		8,650 (15,500)			
A	Anthracite	A 1	3.0							
			4.0							
	Meta-A									

3.1.2 Major coal deposits

In the Master plan study, a total of 27 coal deposits have been selected as main coal deposits in Mongolia, and studied in terms of coal geology. These deposits comprise 17 deposits being mined by MEGM, 2 deposits under preparing coal mines by MEGM, 3 deposits being mined by private sectors and 4 deposits that have a possibility of developing in the future. As a matter of convenience in the report, these selected 27 deposits are subdivided into five megablocks based on such a similarity as locality, geological age of deposition, coal quality and degree of consolidated infrastructure as shown both in Table 3.2 and Figure 3.2. All the boundaries of megablocks, without a part of west boundary of Middle-East Megablock, are overlapped on boundaries of provinces.

Summary of properties for appreciating above-mentioned main coal deposits is shown in Table 3.3, and the outline and coal geology on major deposits selected in short list in the section 3.2.3 and Sharyngol are reported the following.

(1) Tavantolgoi Deposit

1) Locality and topography

The Tavantolgoi Deposit is present within the Middle-South Megablock and at the middle east in Omnogovi Province of the South Govi District. The center of the deposit is in latitude $43^{\circ} 35' N$ and in longitude $106^{\circ} 30'$, 540 km south of Ulaanbaatar and 96 km west of Dalanzadgad which is the capital town of Omnogovi province (Figure 3.3). The land surface of the deposit forms a gently undulated semidesert at 1,490-1,560 m above the sea level.

2) History of exploration

1890 : Firstly recorded by a geologist of U.S.A.

1940 : Exploration by the former Soviet Union

1949 : Sampling survey by the former Soviet Union

1950 : Sampling survey by former Soviet Union

- evaluated as showing a coking property

- recommended a necessity of detailed exploration

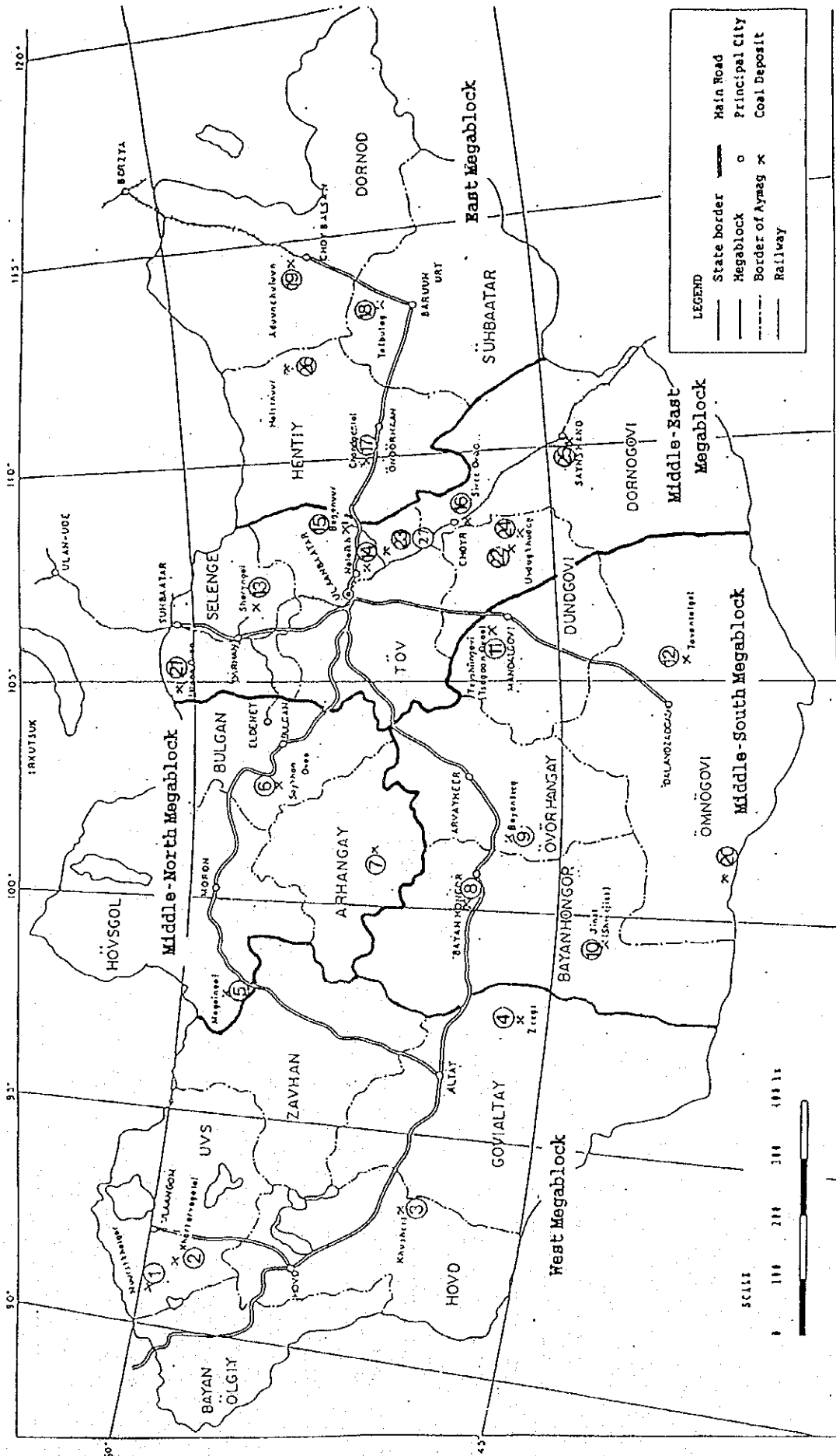
1953-56 : Detailed exploration by a geological expedition of the former Soviet Union

- confirmed the continuity of 18 minable coal seams at the central area by drilling

- estimated coal reserves of 950 million tons (C_1) and 866 million tons ($+C_2$)

Table 3.2 Megablocks of Coal Deposit

Megablock	West	Middle-North	Middle-South	Middle-East	East
Coal Deposit	① ② ③ ④	⑤ ⑥ ⑦	⑧ ⑨ ⑩ ⑪ ⑫ ⑬	⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳	㉑ ㉒ ㉓ ㉔ ㉕
Aimag	BAYAN ÖLGIY UVS ZAVHAN HOVD GOVIALTAY	HOVSGOL BULGAN ARHANGAY	BAYANHONGOR OVORHANGAY OMNOGOVI DUNDGOVI (west half)	SELENGE TOV DORNOGOVI DUNDGOVI (east half)	HENTIY DORNOD SUHBAATAR
Geological Age	Carboniferous	Carboniferous Jurassic	Permian Jurassic Cretaceous	Jurassic Cretaceous Permian(?)	Cretaceous
Coal Rank	Bituminous	Bituminous Subbituminous Anthracite (partially)	Bituminous Subbituminous -Lignite (⑩)	Subbituminous -Lignite	Subbituminous -Lignite
Infrastructure	poor	poor	poor	rather well	partially well



- LEGEND
- State border
 - Megablock
 - Principal City
 - Coal Deposit
 - Border of Aynag
 - Railway
-
- ① Nuurshotgor Deposit
 - ② Khartarvagatai Deposit
 - ③ Khusheet Deposit
 - ④ Zeegt Deposit
 - ⑤ Mogoingol Deposit
 - ⑥ Saihan-Ovoo Deposit
 - ⑦ Bayantsagaan Deposit
 - ⑧ Uburchulut Deposit
 - ⑨ Bayanteeg Deposit
 - ⑩ Shinjinst Deposit
 - ⑪ Tevshlingovi Deposit
 - ⑫ Tavantologoi Deposit
 - ⑬ Sharyngol Deposit
 - ⑭ Nalaykha Deposit
 - ⑮ Baganuur Deposit
 - ⑯ Shivee-Ovoo Deposit
 - ⑰ Chandagantal Deposit
 - ⑱ Taibulag Deposit
 - ⑲ Aduunchuluun Deposit
 - ⑳ Narynschait Deposit
 - ㉑ Ulaan-Ovoo Deposit
 - ㉒ Khoot Deposit
 - ㉓ Tsaidamuur Deposit
 - ㉔ Ovdok-Huduk Deposit
 - ㉕ Sainshand Deposit
 - ㉖ Hulstruur Deposit
 - ㉗ Tugrugnuur Deposit

Figure 3.2 Main Coal Deposits in Mongolia

Table 3.3 Main Coal Deposit in Mongolia (1/2)

Coal Deposit	Age	Basics	Geological Structure	Dip	Number	Miscible Coal Series Thickness	Characteristic	Mongolia (Rustri)	Classification of Coal ASTM (U.S.A.)	JIS (Japan)	Moisture (wt) %	AAK (d) %	Vol. (dwt) %	S (wt) %	Calorific Value kcal/dwt	
(1) Naranbulag Deposit	C3-C2	basin	NS (west) EW (north)	45° E (west) 52° W (east)	8	2-50m	variable thickness, no coal (south)	D-G	SB(0)-HV(C)	E-C	14-21	0.7-0.8	19-36	0.3-0.5	5,400-6,100	7,500-8,400
(2) Kharamragal Deposit	C3-C2	fold with faulting	NE	30-40° (west wing) 50-70° (east wing)	1	80-85m	low partings (0.1-0.2m, 2-4 beds)	D-G	SB(0)-HV(C)	E	16.0	3-5	40-45	0.5	5,500	7,450
(3) Khalkhol Deposit	C3-C2	syncline	NS	45° (west wing) 50-65° (east wing)	2	15.5-34.9m	no capping	D-G	SB(0)-HV(C)	E-B1	7.0	3-4	30-32	0.5	5,400-5,500	8,500
(4) Zeezi deposit	C3-C2	fold with faulting	NW	0-40°	1	9-16m	many partings, variable thickness	J	HV(A)	E-C	10.0	0.2-0.3	18.4	0.4	4,880	8,200
(5) Neegebulg Deposit	C3	basin	NS	6-12°	1	2-20m rv. 7.8m	variable thickness	J	SB(0)-HV(C)	E-C	6.5	5-6	34.6	0.9	5,650	7,350
(6) Sakhia-Ovoo Deposit	J2	homocline	NS	0-3° (max 5°)	1	2-2.4m	variable thickness, basal lava	K, K, A	M, V, A	C, A, I	4.5	21.7	34.6	0.6	6,100	7,200
(7) Bayantsagaan Deposit	J2	homocline	NE	30°	1	10m	partings	B3	SB (B)	F-E	same as Narynkh coal					
(8) Ulaanchahtai Deposit	K1	gentle syncline	NE	0-5°	1	6-8m		B2	SB(0)-HV(C)	F	30-40	6-25	44.6	0.4	3,500	
(9) Bayankag Deposit	J1-J2	symmetrical syncline	EW	18-24° (north wing) 70-85° (south wing)	1	3-36m	variable thickness, splitting	B, D	SB(0)-SB(A)	F-E	5.2	2.2	22.6	1.0	4,680	7,250
(10) Shujat Deposit	J1, J2	homocline	EW	30-40° S	3-3	42-49m (east) 8-18m (west)	splitting (west)	G1	HV (B)	C	6.1	13.1	33.8	0.6	4,500	8,310
(11) Teshigant Deposit	K1	gentle syncline with faulting	EW	10-15° (north)	5	IV: 20m I - III: max 230m	much variable thickness, splitting	B2	SB (C)	F	30.5	20.9	45.5	0.7	3,370	6,450
(12) Tavanbulag Deposit	F3	gentle syncline	NW	0-30° 0-15° (north)	12	2-72m	splitting partly caving	G, K, J	HV (C), V	E-D	6.9	14.9	32.8	0.8	6,500	7,700-8,400
(13) Shiryng Deposit	J2, J3	homocline with faulting	N60° E	6-9° SE	2	30-40m	faulting	D, D	SB(0)-SB(A)	F-E	15.0	17.3	41.0	0.8	3,900-4,200	7,200
(14) Narynkh Deposit	K1	homocline	NW	8-10° SW	5	8-20m	variable thickness	B3	SB (B)	F	21.0	5.0	45.0	0.7	3,900	6,620
(15) Baganuur Deposit	K1	basin with faulting	NE	8-20°	3	2-98m	splitting (Sect 3)	B2	SB (C)	F	31.0	9.2	12.1	0.4	3,870	7,070
(16) Shivee-Ovoo Deposit	K1	gentle basin	NW	8°	4	2-23m	splitting max depth: 30m	B2	SB (C)	F	43.6	6.0	17.3	0.9	2,690	6,660
(17) Chadsaganit Deposit	K1	homocline with faulting	NW	5-8° S	1	30-50m	parting (0.1-0.4), intrusive rock	B2	SB (C)	F	30.6	12.3	11.7	0.9	3,000-3,400	6,580
(18) Talaibag Deposit	K1	gentle basin	NE	8-15° (rest 0)	3	2-20m	variable thickness	B1	L (A)	F	30.0	9.5	14.8	0.8	2,850	6,000
(19) Admurchahtai Deposit	K1	gentle basin	ENE-WNW	6-8°	2	2-50m	much variable thickness	B1	L (A)	F	45.2	9.4	16.7	1.1	2,400	6,380
(20) Narynsahtai Deposit	F3	homocline	EW	15-35° S (west) 35-55° (east)	1	West: 100m East: 100m	low partings, intrusive rock (Sect. 6)	G1, A	HV (C), A	E, A	probably same as Tavanbulag coal					
(21) Ulan-Ovoo Deposit	J	gentle basin	EW	15-30° N 60-70° N (west)	1	24-65m	variable thickness, many partings	D, D	SB (B)-SB (A)	F-E	13.4	7.3	11.2	0.5	4,270	7,170
(22) Nhoon Deposit	J2, J3	homocline with faulting	ENE	5-12° S	3	7.8-10m	V: low partings Others: many partings	D, D	SB (B)-SB (A)	F-E	11.3	7.5	14.5	0.7	4,500	7,030
(23) Taidimner Deposit	K1	elongate basin with faulting	NNE	6-5°	3 groups	5-50m	variable thickness, splitting	B2	SB (C)	F	30-34	9-11	12-18	0.4-0.7	3,600-3,800	6,850-7,100
(24) Ovek's Ikhad Deposit	K1	plain-syncline	NE, EW	D-5°	1	30-60m	high sulphur	B1, B2	SB (C)	F	36.0	13.9	45.0	2.8	3,070	6,300
(25) Sirahtai Deposit	J (f)	fold and faulting		60-85°	3	1-3m	mostly slipping	G, G (f)	HV (B) (f)	E-C (f)	21-72	61-25.7	16.3-29.7		5,000-6,750 (base unknown)	
(26) Ikhiner Deposit	K1	gentle basin	EW	8-15° (max 20°)	2	VE: 9.0-32.6m V: max 9.6m	variable thickness, splitting (V)	B2	SB (C)	F	36.1	10.2	12.7	0.7	4,350 (old base)	6,470
(27) Tugruguur	K1	anticline syncline	some steep	7	2	5m 15m	low partings	B2	SB (C)	F	7.5	14.9	30.6	0.8	6,240	

Table 3.3 Main Coal Deposit in Mongolia (2/2)

Coal Deposit	Megsblock	Province (Aimags)	Coordinates	Access	Topography	Size of Deposit	Area	History of Exploration	Prospecting	Detailed Exploration	Acres	Depth	Miscible (A+B+C) + (C+E)	Geologist Year of opening Method	Production (1,000t)	
(1) Nuurshigui Deposit	West	Uvs	49° 46'N 90° 30'E	110km WSW of Ulaanum	plain grassland	NS: 15km EW: 30km	59km ²	1911-1942 1950-1991	1911-1942 1950-1991	1961 (partial)	whole area	100m	130.3	166.6	1963 O/C	3,139.9
(2) Khansaygnai Deposit	West	Uvs	49° 35'N 91° 40'E	50km SW of Ulaanum (100km by vehicle)	mountain grassland	NS: 1.5km EW: 2.0km	3km ²	1923	1967	1972 (partial)	NS: 0.8km EW: 0.7km	70-140m	14.7	24.3	1971 O/C	1,190.8
(3) Khalsai Deposit	West	HOVD	46° 46'N 93° 25'E	20km NE of Tseveg, 60km SW of Dery by vehicle	gentle hills	NS: 2.5km EW: 1.0km	2.3km ²	1969	1969	1979	1.6 x 0.5km whole area	50m	2.57	6.87	1966 O/C	1,261.0
(4) Zang deposit	West	GOVIALTAI	45° 20'N 97° 30'E	30km SW of Chaganbulag, 250km SE of Arai by vehicle	plain	NS: 1.0km EW: 0.5km	0.6km ²	1955	1967-70	1976	NS: 1km	80-200m	4.0	15.0	1970 O/C	1,655.6
(5) Mergelgiin Deposit	Middle-North	HOVSGOL	49° 30'N 97° 55'E	165km WSW of Naron	hills forest	NS: 1.0km EW: 0.4-0.6km	0.3km ²	1955	1967-70	1976	NS: 1km	80-200m	4.0	15.0	1970 O/C	1,655.6
(6) Saikan-Ovoo Deposit	Middle-North	BULGAN	48° 48'N 102° 30'E	80km W of Balgan (90km by vehicle)	hills	NS: 5.0km EW: 3.5km	17.5km ²	1988-89	1988-89	1986 (W+Z) 1977 (E+I) 1992 (North)	over 1.5km block of coal seam	250m	23.95	34.66	1965 U/C	19,861,199.0
(7) Byasnyagan Deposit	Middle-North	ARIANSAGY	47° 40'N 101° 18'E	25km NNW of Tserideg	hills grassland	NS: 2.0km NW: 0.5km	0.6km ²	1986	1986	1986	whole area	100m	-	4.0	1994 U/C	on prospecting
(8) Uunshalaan Deposit	Middle-South	BAYANLUNGOR	46° 20'N 101° 07'E	60km WSW of Byasnyagan	hills grassland	: 0.2km : 0.8km	0.4km ²	1978	1978	1981	0.5 x 0.8 km	60-70m	3.7	-	1978 O/C	(1978) 1.2 interim
(9) Byasnyag Deposit	Middle-South	OVIANSAGY	45° 40'N 101° 35'E	1.5km SW of Arai	plain grassland	NS: 1.2km EW: 7km	10km ²	1961 1970	1961 1970	1977 (partial)	EW: 7km	100-110m	25.7	-	1962 O/C	(1962) 199.2 4,047.3
(10) Shingai Deposit	Middle-South	BAYANHONGOR	44° 35'N 100° 15'E	70m NW of Shingai 250km SW of Byasnyagan	plain grassland	NS: 1km EW: 8km	9km ²	1977-78	1977-78	1977-78 (partial)	whole area	300-350m 300-350m	2.4	4.1	1991 O/C	(1991) 990.3 30.9
(11) Tseringon Deposit	Middle-South	DUNDGOVI	46° 07'N 106° 07'E	30km N of Mandulgov	gentle basin grassland	NS: 6km EW: 12km	72km ²	1981-82	1981-82	1981-82	whole area	300-350m 300-350m	38.7	96.0	1963 O/C	12,562.7
(12) Tsvetelgen Deposit	Middle-South	ORNONGOVI	43° 35'N 106° 30'E	90km W of Ulaanbulag 540km S of Ulaanbar	plain grassland	NS: 6.5km EW: 60m	60km ²	1890 1978-81 1984-87	1978-81 1984-87	1981-90	main area	200m 500m	3.500	6.500	1966 O/C	(1966) 199.3 2,083.7
(13) Sharyngai Deposit	Middle-East	SELENGE	45° 12'N 106° 37'E	50km SE of Orlan by train	hills forest	NS: 1.5km NE: 3.0km	4.5km ²	1955-78	1955-78	1955-78	striping ratio: 10m ²	250m	32.0	U/C 75.0 U/C 75.0	1965 O/C	(1965) 199.3 4,198.4
(14) Narynshai Deposit	Middle-East	TOV	47° 40'N 107° 18'E	37km SE of Ulaanbar by train & vehicle	gentle hills grassland	NS: 3.5km EW: 10km	35km ²	1912 1930	1925-26 1930	1931 1946-78	350m	76	-	1922 U/C	(1922) 199.3 2,476.9	
(15) Baguar Deposit	Middle-East	TOV	47° 45'N 108° 20'E	120km ESE of Ulaanbar by vehicle	plain grassland	NNW: 12km WNW: 3.5km	42km ²	1925	1925	1925	350m	515.8	713.1	1978 O/C	(1978) 199.3 4,456.3	
(16) Shere-Ovoo Deposit	Middle-East	DORNOGOVI	46° 10'N 108° 35'E	20km SE of Choyr	rolling plain grassland	NW: 35km NE: 17km	63km ²	1957	1966-68	1966-68	Shereu whole area	350m	364.1	2,700	1992 O/C	(1992) 199.3 748.4
(17) Chandargai Deposit	East	HENTY	47° 35'N 110° 05'E	280km E of Ulaanbar 160km ESE of Baguar 40km W of Oudoban	plain grassland	NS: 1.5km EW: 2.0km	3km ²	1971	1967	1967	block II whole area	100m	48.6	51.9	1976 O/C	(1976) 199.3 1,532.2
(18) Talaing Deposit	East	SUIBANTAR	46° 25'N 112° 58'E	35km NW of Subantar (by vehicle)	plain grassland	NW: 5.0km NE: 2km	70km ²	1939	1967	1967	whole area	500m	421.3	-	1955 O/C	8,423.6
(19) Adushahlan Deposit	East	DORNOD	48° 05'N 114° 28'E	6.5km N of Choyrshin	plain hills grassland	NW: 6km NE: 7km	40km ²	1951-1953	1967	1967	South block whole area	60m 60m	23.0	400	1955 O/C	on prospecting
(20) Narynshai Deposit	Middle-South	ORNONGOVI	47° 50'N 101° 40'E	300km SW of Dhanzaidag 30km N of bouke with china	plain desert	EW: 90km NS: 14km	1000km ²	1991	1991	1991	2,800km ²	180m	40.50	200-250	-	1994
(21) Ulaan-Ovoo Deposit	Middle-East	SELENGE	50° 20'N 105° 07'E	5km W of Tseveg 35km W of Subantar	mountain forest	NS: 2km EW: 3km	6km ²	1974	1979	1979-83	NS: 0.5-5km EW: 1.5km	130-160m	23.6	62.1	-	-
(22) Khooi Deposit	Middle-East	DUNDGOVI	45° 35'-45° 46'N 107° 35'-107° 46'E	90km SW of Choyr 120km ESE of Mandulgov	plain grassland	NS: 2km EW: 2km	25km ²	1964	1964	1964, 1992-94	1 x 3km 3 x 2km	100m 100m	62.3	190.9	1993 O/C	(1993) 3.8
(23) Tsaidamuur Deposit	Middle-East	TOV	47° 25'N 108° 07'E	100km SE of Ulaanbar 10-20km S of railway	plain grassland	NE: 4km NW: 10-15km	500km ²	1980s	1980s	no	whole area	500m	-	1700	-	-
(24) Ovoo-Hudak Deposit	Middle-East	DUNDGOVI	45° 32'N 108° 07'E	140km ESE of Mandulgov 90km W of railway	plain grassland	NE: 16km NW: 3km	48km ²	1964	1964, 1965	1964-72	Middle b. WS b.	100m 100m	159.3	168.2	-	-
(25) Shuvardai Deposit	Middle-East	DORNOGOVI	44° 50'N 110° 08'E	18km SW of Shuvardai desert	plain desert	NS: 5km EW: 10km	50km ²	1964	1958-60	1964-72	2.3km ² 7.7km ²	120m 300m	0.6	105.3 (?)	1937	1937 (?) mined up to 25m from surface
(26) Uulimuur Deposit	East	HIGHTY	48° 20'N 112° 33'E	65km NE of Byan-Ovoo (by vehicle)	rolling plain grassland, lake	NS: 5km EW: 10km	50km ²	1964	1980-81	1980-81	1.2 x 1.5km (1-4km ²)	50m	11.2	180	-	-
(27) Tagynuur	Middle-East	TOV	46° 55'N 104° 07'E	110km S of Narynshai	plain grassland	10 x 10km	80km ²	1952	1984	1984	whole area	300m	-	695	-	-

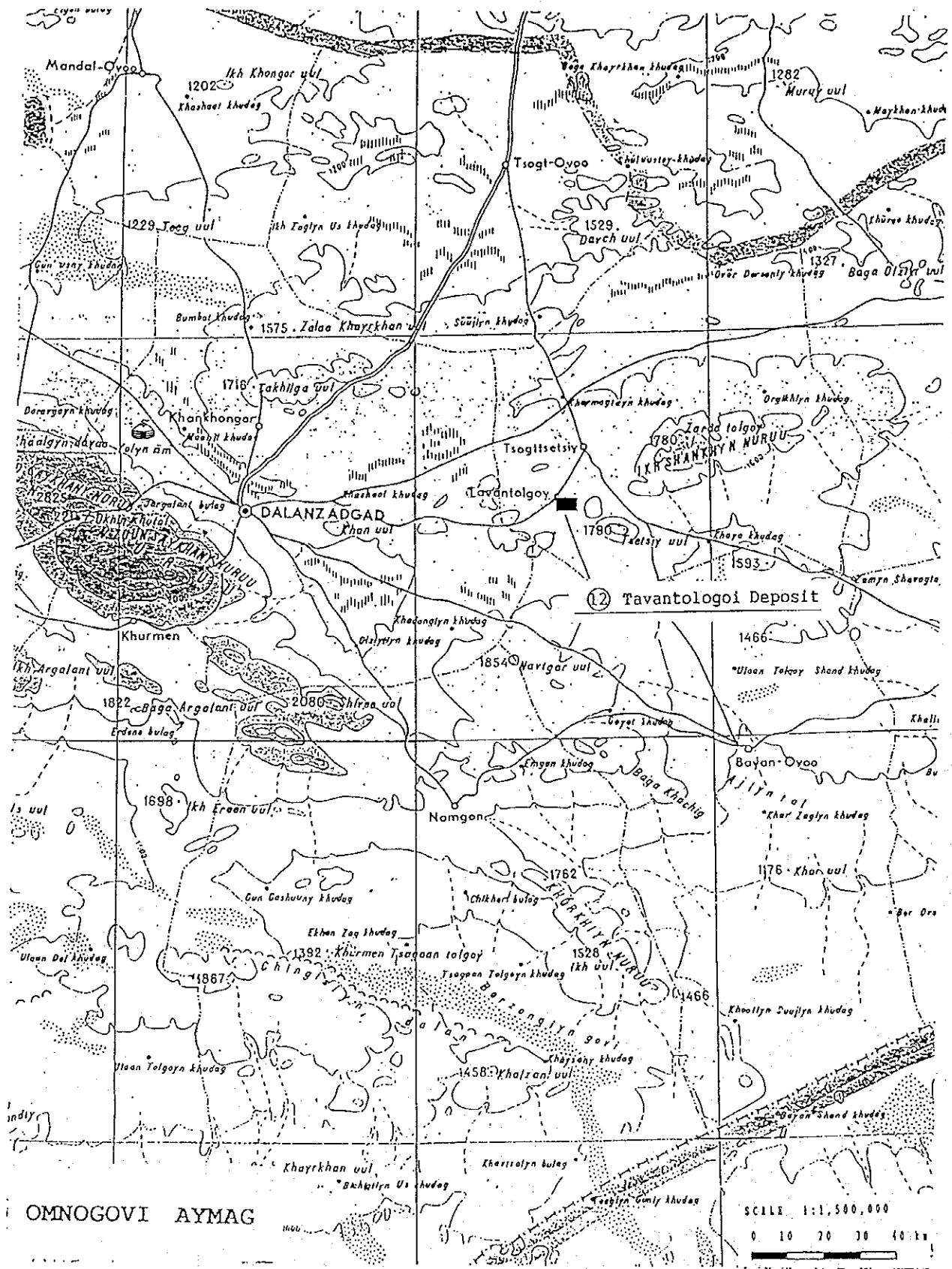


Figure 3.3 Deposit locality map in east of Omnogovi Province

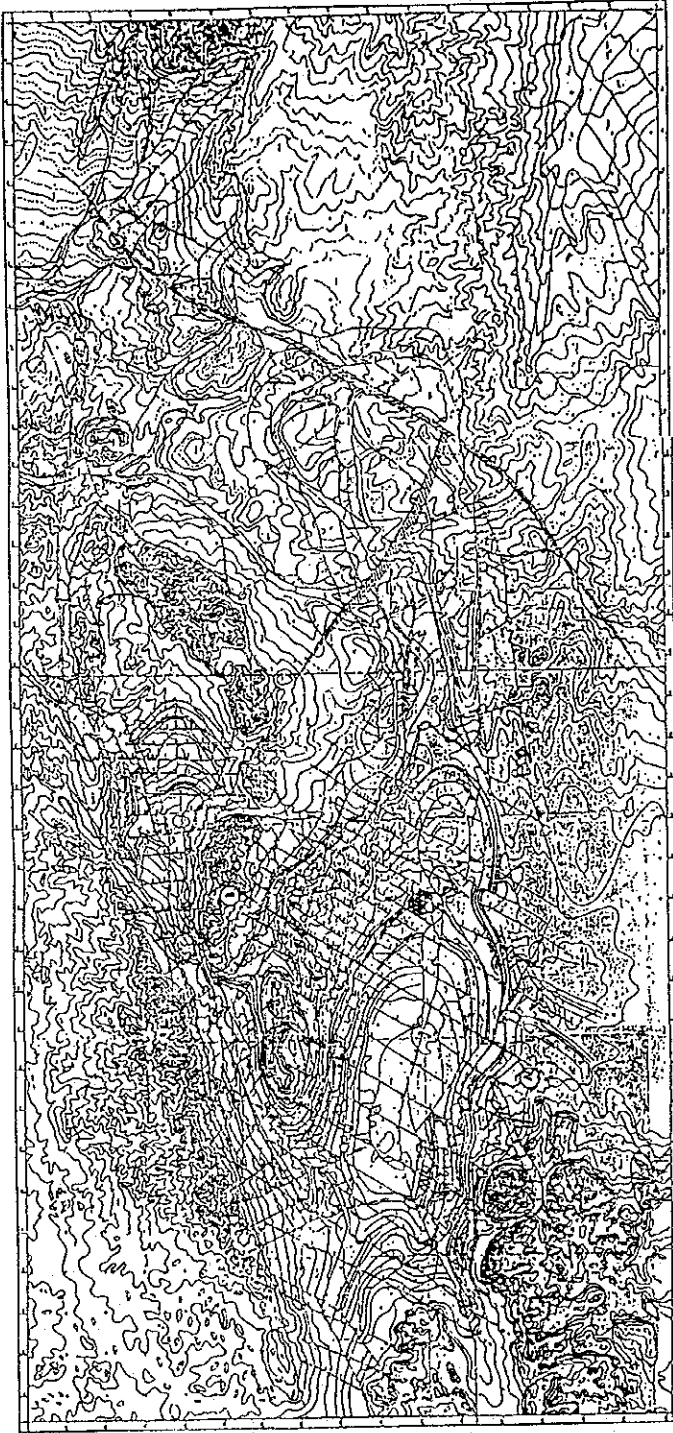
- 1974-75 : Sampling survey by the Bulgarian expedition
- sampled each 5 tons from 4 seams at the central area
 - evaluated the Seam IV as coking coal
- 1975(?) : Decided to develop at the meeting of COMECON
- 1978-90 : Exploration by Mongolia under former Soviet Union's advice
- total drilling work : 2,000 holes, 200 km
 - total cost : 150 million Tugrug
- 1978-81 : Exploration at the narrow area
- exploration area : 90 km²
 - drilling interval : 1.0-1.5 km
- 1981-84 : Detailed exploration for an area of 35 km² at the northeast and west areas
- drilling interval : 700-750 m
- 1984-86 : Detailed exploration for an area of over 10 km² at the northeast area
- drilling interval : 350 m
- 1984-87 : Exploration at the east area
- Detailed exploration at the north area (10 km²)
- 1988-90 : Detailed exploration at the central and east areas
- 1990 : Feasibility study by the former Soviet Union
- study cost : 8 million Tugrug (7 Tg/US\$)
- 1992 : Reconnaissance survey for the Bariun-Omno area

3) Coal geology

The Tavantolgoi Deposit belongs to the South Govi Coal-bearing Basin. The deposit extends for 60 km east-west long and 6-16 km north-south wide, over an area of 600 km². This is the largest coal deposit in Mongolia. Coal seams are embedded in the upper part of the Tavantolgoi Formation of Late Permian age. The Tavantolgoi Formation is 1,500 m in thickness and the upper part of coal-bearing has 600-1,000 m thick.

The basic geological structure is formed of several gentle synclinal structures with faulting (Figure 3.4). The formation mainly trends east-west, and dips 0-15° at the north and 30° at the south. The coal-bearing part contains a total of 16 seams of 3-30 m in average thickness and 165 m in total average thickness. The coal seams are numbered from the Seam 0 to Seam XV in ascending order, and 12 seams except the Seam I, II, VI and VII are minable

Схематическая геологическая карта
Улантунурской угленосной впадины.



Стратиграфическая колонка
Тавантолгойского
месторождения углей.

Легенда	Литографическое изображение	Литологическое описание
1	[Symbol]	Мелкие и средние известняки, глины, песчаники, сланцы. В верхней части залегают серые, зеленовато-серые и черные глины, известняки, песчаники, сланцы.
2	[Symbol]	Верхняя часть Тавантолгойского свиты. Известняки, сланцы, песчаники. Угленосные пласты. В основании залегают известняки, сланцы, песчаники.
3	[Symbol]	Средняя часть Тавантолгойского свиты. Известняки, сланцы, песчаники. Угленосные пласты. В основании залегают известняки, сланцы, песчаники.
4	[Symbol]	Нижняя часть Тавантолгойского свиты. Известняки, сланцы, песчаники. Угленосные пласты. В основании залегают известняки, сланцы, песчаники.
5	[Symbol]	Песчаники, известняки, глины, сланцы. В основании залегают известняки, сланцы, песчаники.
6	[Symbol]	Центральная свита. Известняки, сланцы, песчаники. Угленосные пласты. В основании залегают известняки, сланцы, песчаники.
7	[Symbol]	Доломитовая свита. Известняки, сланцы, песчаники. Угленосные пласты. В основании залегают известняки, сланцы, песчаники.

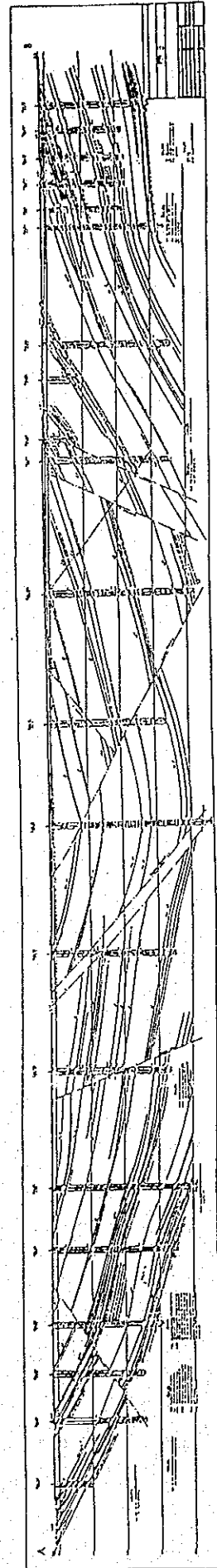


Figure 3.4 Geological map of Tavantolgoi Deposit

coal seams in the deposit. Most of coal seams characteristically have variable seam thickness and partially show splitting and/or pinching out. In particular, the Seam VIII and a show remarkable splitting toward the southeast and toward the northwest respectively. However, the Seam III and IV are comparatively stable in thickness. The seam thickness and seam intervals of minable coal seams are shown:

Seam	Thick.(m)	Interval(m)	Seam	Thick.(m)	Interval(m)
X	2 - 10	50 - 70	XV	2 - 5	20 - 30
IX	2 - 72	60 - 70	XIV	2 - 6	20 - 30
VIII	2 - 50	40 - 60	XIII	2 - 20	60 - 80
V	2 - 10	40 - 50	XII	2 - 20	60 - 100
IV	3 - 20	60	XI	2 - 10	60 - 110
III	2 - 15	20 - 40	X	2 - 10	
0	2 - 30				

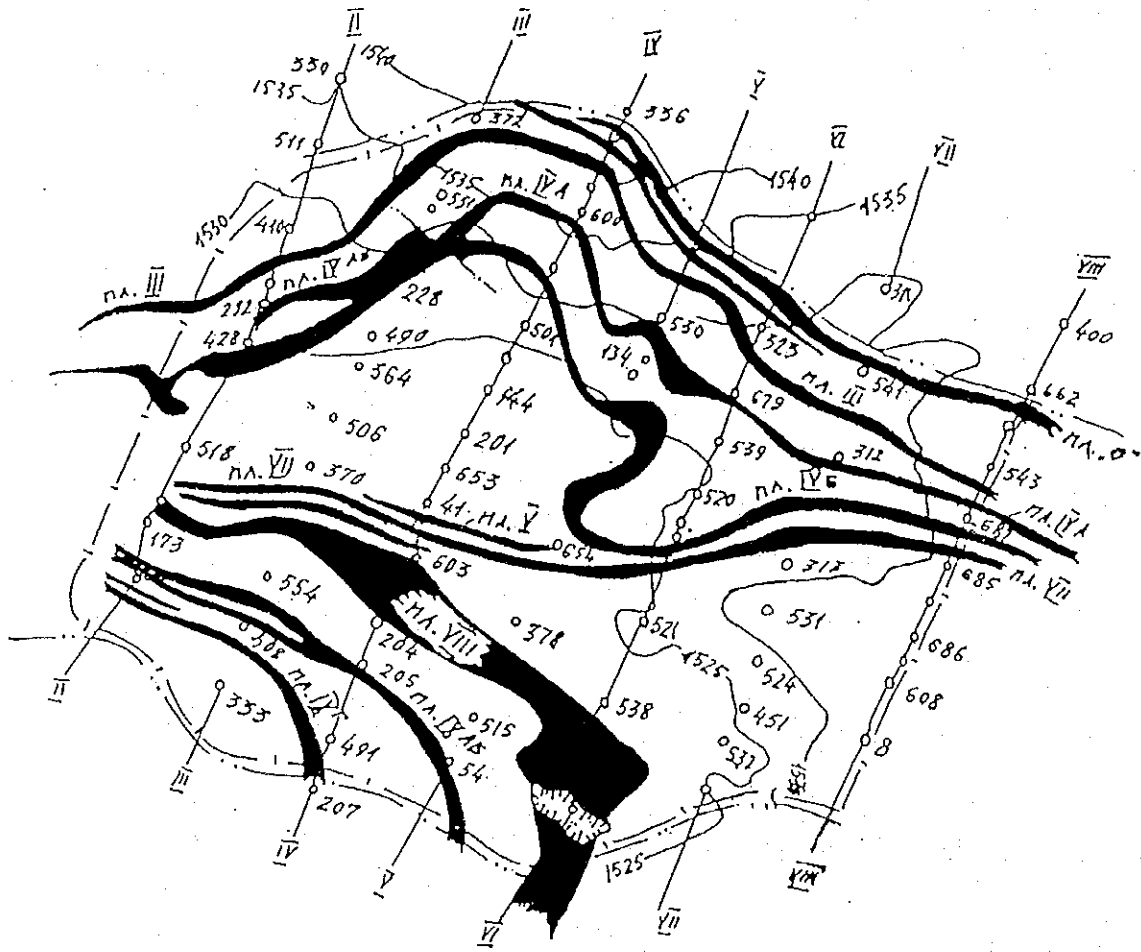
Figure 3.5 shows the seam conditions at the central part of Tavantolgoi deposit.

4) Coal quality

The coals are classified as seen in Table 3.1. These coal seams are subdivided into two groups at the point of coal quality: the coals of the upper group composed of the Seam X to XV belong to steaming coal, and the coals of the lower group of the Seam 0 to IX show favorable coking property. Actually produced coals contain 11.5% moisture(as received), 21.2% ash(dry), 25.0% volatile matter(dry,ash free), 0.7% sulfur(dry). The calorific value is 5,110 kcal/kg(as received) and 8,110 kcal/kg(dry, ash free).

5) Coal reserves

The coal reserves at the exploration area above 1,000 m up to the sea level, within 500 m below the surface is estimated at 6,500 million tons for total geological reserves(A + B + C₁ + C₂ + P), and the reserves including surrounding area expected of coal existing is assumed to be 10 billion tons. For the exploration area above 300 m in depth, the minable reserves(A + B + C₁) is 3,500 million tons, of which 1,000 million tons is estimated for coking coal



PA IV

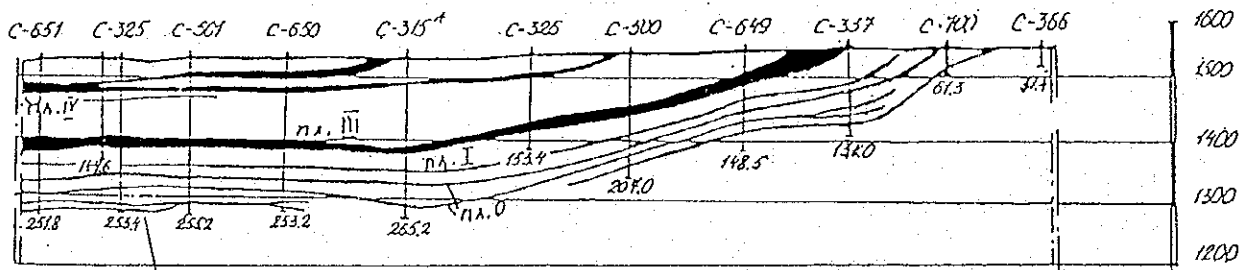


Figure 3.5 Seam conditions of Tavantolgoi Mine

reserves. According to the feasibility study carried out in 1990, the minable reserves within 300 m below the surface was calculated a total of 1,883.3 million tons: 1,016.8 million tons for steaming coal and 866.5 million tons for coking coal. The study estimates at 20 years of mining life under 3.6 of stripping ratio and 20 million tons of annual production.

6) State of mining

The Tavantolgoi Coal Mine began to mine by open cut in 1966. The total production until 1993 was 2.09 million tons with an average of 120 thousand tons/year and the coal was utilized by local consumers restricted in Omnogovi and Dornogovi Provinces. The schematic of mining site is shown in Figure 3.6.

(2) Sharyngol Deposit

1) Locality and topography

The Sharyngol Deposit is within the Middle-East Megablock and in the Selenge province. The center of the deposit is in latitude $49^{\circ} 12'$ in longitude $106^{\circ} 27'$, 50 km southeast of Darkhan which is one of main stations along the Trans-Mongolian Railway (Figure 3.7). The land surface of the deposit forms a forestation hill. The highest elevation is 975 m above the sea level and the lowest is 790 m.

2) History of exploration

1958-61 : Detailed exploration

- drilling : 59 holes, 9,280 m in total

1963-68 : Detailed exploration

1974 - drilling : 157 holes, 10,741 m in total

1976-78 : Detailed exploration

- drilling : 59 holes, 8,237 m in total

3) Coal geology

The Sharyngol Deposit belongs to the Orkhon Selenge Coal-bearing Basin (Region). The deposit extends for 3 km northeast and 1.5 km northwest with an area of about 4.5 km². Coal seams are embedded in the Sharyngol Formation of Middle-Late Jurassic age on the basement of Carboniferous sediments. The Sharyngol Formation has 420-500 m in thickness and contains six coal seams (Figure 3.8). The deposit is divided by two faults into

16 June, 1995

APPLICATION FOR THE
MASTER PLAN STUDY FOR RURAL ELECTRIFICATION
BY THE GOVERNMENT OF JAPAN

1. Project Digest

- (1) Project Title: Master Plan Study for Rural Electrification.
- (2) Locations: Somons, ~~bags~~ and families in the rural areas, out of coverage by the Central Electricity System, in the whole country.
- (3) Implementing Agency
 - Name of the Agency: Ministry of Energy, Geology and Mining.
 - Number of the staff of the Agency (on a category basis)
To be filled in by MOE.
 - Budget allocated to the Agency
To be filled in by MOE. The budget arrangement for executing the Study shall be stated clearly.
 - Organization chart
To be filled in by MOE.
- (4) Justification of the Project
 - Present conditions of the sector

The land of Mongolia is administratively divided into the capital city of Ulaanbaatar, 21 aimags (provincial centers) and around 320⁵ somons (district centers). In Mongolia, many nomadic families are moving around for cattle grazing during the summer time. During the winter time, 102 to 103 nomadic families live as a group, ~~which is called bag.~~

The Mongolian power system consist of the central electricity system (CES) and isolated rural power centers.

The CES is the only one grid power system having interconnection with the Russian system. This system has installed capacity of 788MW, and is operated with 24 coal-fired turbine generators with unit capacity of 6 to 100MW. The 220kV and 110kV transmission grid covers an area, in which a half of the country's population are living. The power consumption of this system occupies 90% of consumption of the whole country. In addition to Ulaanbaatar, sparsely populated 6 provincial centers and around 100 somons, are supplied by

this CES.

There is also a plan to establish the western power system covering the western-most 3 provinces of Hovd, Uvs and Bayan-Ulgii with interconnection with the Russian system.

Others are small scattered power systems without interconnection among each other. Except one example of small steam generators at an aimag center, all systems are operated with diesel generators. In 11 provincial centers and 220 somons, ^{centers} there are around 800 diesel power stations with around 1800 generators of 60kW to 315kW, mostly from Russia. The demand of somon centers is mostly 100 to 200kW.

Due to recent price increase of diesel fuel, present price of diesel fuel is 144,000 tg per ton (around US\$ 320/ton), and unreliability of supply to Mongolian rural areas which has huge area and very sparsely populated land, many rural diesel power stations are facing fuel supply shortage. Actually, power stations are obliged to stop their operation due to fuel shortage. Due to such interruption of electric power supply, small-medium industries, schools, kindergartens, as well as business and residential consumers are suffering much.

- Sectoral development policy of the Government of Mongolia

The Government of Mongolia has a policy to utilize renewable and indigenous sources of energy as far as applicable for power generation and minimize oil consumption. The conceived sources of energy under this category are hydropower, wind power, solar energy and coal. ^{should} Also ^{consider} ^{biogas} ^{source} ^{of} ^{energy} ⁱⁿ ^{the} ^{country} ^{and} ^{integrate} ^{nomadic} ^{families}

- Problems to be solved in the sector

For development of the Mongolian economy, improvement of living standard of rural community and promotion of small/medium industries are of vital importance to promote.

For executing this target, the most important infrastructures of electric power must be provided abundantly, preferably utilizing renewable energy.

- Outline of the Project

The project aims to carry out a master plan study for rural power development of somons, ^{centers} bags and nomadic families following the government policy of utilizing the renewable and indigenous sources of energy.

Of the 320 somons ^{centers} in the country, 100 of them have been integrated into the CES and 60 others are planned to be connected with the grid systems. The Study shall depict electrification plans for the remaining 160 somons, and bags and nomadic families, ⁹⁰ ~~all nomadic families~~ ^{of} ^{the} ^{country}

- Purpose of the Study

The purpose of the Study is to prepare a master plan for rural electrification in coordination with a master plan for the CES and aimags now in preparation under a technical assistance program of ADB.

- Prospective beneficiaries

The outcomes of the Study will be helpful in preparing power development plans for rural areas. The final beneficiaries must be inhabitants and industries in rural communities. The national economy shall also be benefited due to promotion of rural economy.

- The Project's priority in the National Development Plan/
Public Investment Program

The project ranks at the second in the list of priority projects asking for technical assistance to Japan in November, 1994.

(5) Desirable time of the commencement of the Project

The Study is hoped to be completed in coordination with the ADB's master plan study to be completed in _____.

(6) Expected funding source

The Study is expected to be financed under the technical assistance program of Government of Japan.

(7) Other relevant Project

Under the technical assistance program of ADB, a ^Smaster plan study for the future development of the CES and power supply to aimags is progressing and is scheduled to be completed in October of 1995.

2. Terms of Reference of the Proposed Study

(1) Necessity/Justification of the Proposed Study

The above Clause (4) Justification of the Project is referred to.

(2) Necessity/Justification of the Japanese Technical Cooperation

In coordination with the preparation of a master plan for the CES and aimags, the Government of Mongolia decided to carry out a study for preparation of a master plan for rural electrification. Under such circumstance, technical assistance of the Government of Japan was requested.

(3) Objective of the Study

Objectives of the Study are:

- To find out the least cost alternatives of supplying electric power to rural communities including somons, bags and nomadic families utilizing renewable and indigenous source of energy as far as applicable.
- To prepare long term power development plan of all somons including possible interconnection with transmission lines.
- To strengthen capabilities of Mongolian technical personnel to carry out feasibility study and design of hydropower project.

(4) Area to be covered by the Study

The area to be covered by the Study stretches whole the country except areas covered by the CES. *(including nomadic families of whole country)*

(5) Scope of the Study

The scope of the Study for the proposed project will be:

- To prepare long term load forecast of all somons up to 2010.
- To prepare inventories of renewable sources of energy including hydropower, wind power and solar energy.
- To prepare long term power development plans of all somons.
- To prepare power transmission plans including interconnection among power stations and load centers.
- To assess economic and financial feasibility of the project on long-run marginal cost basis.
- To train Mongolian engineers in load forecasting, preparation of long-term plans, economic and financial assessment, and other subjects related to the Study.
- To assess socioeconomic and environmental impacts of the projects.

(6) Study Schedule

The Study is expected to be completed within 15 months after commencing the Study.

(7) Expected Major Outputs of the Study

The following documents shall be submitted in relation to the execution of the study:

- Inception report to indicate plan and methods of executing the Study.
- Interim report for necessary review of the Study by the Mongolian authorities.
- Final report compiling all results of the Study.

(8) Request of the Study to other donor agencies

The Government of Mongolia has no idea to submit application for conducting the Study to any other country.

(9) Other relevant information, if any

3. Facilities and Information to be given to the Study Team, etc.

(1) Assignment of counterpart personnel of the implementing agency for the study (number, academic background, etc.)

To be entered by MOE.

(2) Available data, information, documents, maps, etc. related to the Study (list to be attached)

- Topographic map of 1:100,000, drawn by _____ in _____ is available for the whole country.

- Terms of reference of the master plan study concluded with ADB.

- Copies of available reports and documents to be referred to in carrying out the Study.

(3) Information on the security conditions in the study area

No security problems are expected to arise in the country related to the execution of the Study.

4. Global Issues (Environment, Women in Development, Poverty, etc.)

(1) Environmental components (such as pollution control, water supply, sewage, environmental management, forestry, biodiversity) of the Project, if any

To be filled in by MOE.

(2) Anticipated environmental impacts (both natural and social) by the Project, if any

To be filled in by MOE.

- (3) Women as main beneficiaries or not

It is expected that there will be no such problem. Living conditions of women will be improved by execution of such rural electrification project.

- (4) Project components which require special considerations for women (such as gender difference, women specific role, women's participation), if any

Expected no considerations are required.

- (5) Anticipated impacts on women caused by the Project, if any

No impacts.

- (6) Poverty reduction components of the Project, if any

No components.

- (7) Any constraints against the low income people caused by the Project

No impacts, but rather improvement.

5. Undertakings of the Government of Mongolia

In order to facilitate a smooth and efficient conduct of the Study, the Government of Mongolia will take necessary measures:

- (1) To secure the safety of the Study Team.
- (2) To permit the members of the Study Team to enter, leave and sojourn in Mongolia in connection with their assignment therein, and exempt them from alien registration requirement and consular fees.
- (3) To exempt the Study Team from taxes, duties and any other charges on equipment, machinery and other materials brought into and out of Mongolia for the conduct of the Study.
- (4) To exempt the Study Team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Study Team for their services in connection with the implementation of the Study.
- (5) To provide necessary facilities to the Study Team for remittance as well as utilization of the funds introduced in Mongolia from Japan in connection with the implementation of the Study.
- (6) To secure permission or entry into private properties or restricted areas for the conduct of the Study.

(7) To secure permission for the Study to take all data, documents and necessary materials related to the Study out of Mongolia to Japan.

(8) To provide medical services as needed. Its expenses will be chargeable to members of the Study Team.

6. The Government of Mongolia will bear claims, if any arises against member(s) of the Japanese Study Team resulting from, occurring in the course of or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the member of the Study Team.

7. The Ministry of Energy, Geology and Mining will act as counterpart agency to the Japanese Study Team and also as coordinating body in relation with other governmental and nongovernmental organizations concerned for the smooth implementation of the Study.

The Government of Mongolia assured that the matters referred in this form will be ensured for a smooth conduct of the Development Study by the Japanese Study Team.

Signed:

Titled:

On behalf of the Government of Mongolia

Date:

**AGREEMENT FOR THE CREATION AND USE OF A JOINT LOAN FUND OF THE
MINISTRY OF TRADE AND INDUSTRY AND THE UNITED STATES EMBASSY IN
MONGOLIA**

The Ministry of Trade and Industry (hereinafter called "MTI"), on one hand, and the Mongol Daatgal Bank (hereinafter called the Bank), on the other hand, have mutually agreed to conclude this agreement based on the "United States Government Agricultural Commodity Foreign Donation Agreement Section 416(b)" with the United States Government and official meetings between the Ministry of Trade and Industry, The Embassy of the United States of America and the Mongol Daatgal Bank.

One. Purpose of the agreement.

The purpose of the agreement is to create a joint revolving loan fund of the Ministry of Trade and Industry and the Embassy of the United States of America for supporting and assisting small and medium industries, private undertakings and individual entrepreneurs in the five western provinces (Zavhan, Uvs, Bayan-Ulgii, Hovd and Gobi-Altai). Projects which logically and favorably contribute to the social and economic development of the five western aimags, such as those that add value to local products, are oriented at profitable exports, produce handicrafts or other traditional items for needs of the rural population, promote tourism, generate sustainable employment, or especially enhance the potential of youth and women, will receive special consideration. This Fund will be divided as evenly as possible among the five western aimags, taking into consideration local priorities and comparative advantages.

The parties to this agreement commit themselves to make their best efforts in good faith to use this assistance fund for the humanitarian and development goals consistent with the above purpose. To ensure access to loan funds in the five western aimags, the Bank agrees that it has or will establish a presence in each of the five western aimags, or will have a suitable corresponding relationship with another bank so as to carry out the purpose of this agreement.

Two. Amount of the assistance fund.

MTI will transfer from the Special Account established through the "United States Government Agricultural Commodity Foreign Donation Agreement Section 416(b)" 300 mln. tugrugs (hereinafter called the "Fund") to account # 260-000 of the Bank by May 10, 1994. In general, roughly 50% of the funds will be used in support of local, high priority, larger-sized projects while the remainder will be directed toward small and medium enterprise development.

Three. Distribution of loans.

1. Loans from the Fund will be made for the following purposes and in the following ways:

a) After the creation of the U.S. Assistance Fund, the Bank and respective aimag governments will provide information to the people of the relevant aimags of Mongolia and will take measures to make the Fund accessible to small and medium industries in those areas.

b) Aimag governments will provide MTI with lists of priority projects, to include feasibility studies, in their provinces. MTI and the Embassy will review all of these projects and evaluate priorities. Recommended projects will then be given to the Bank for review and final selection.

c) Projects deserving special consideration will be eligible for a special low rate of interest of between 4%-6% per month, in current economic conditions. Should there be a significant change in economic conditions, the special rate of interest may be revised by joint agreement between MTI, the Embassy of the United States of America, and the Bank. The Bank may retain funds equal to 2 points of loan interest collected to cover Bank operating costs. Interest charges should be applied only to the balance of unpaid principal of any given loan.

d) Potential borrowers must submit a list of collateral certified by a notary as loan security. Projects must be insured for at least the value of the project loan.

e) Loans under this project will be made only from the Fund established under this agreement. The Bank is obligated to maintain adequate records, such as loan evaluations and payment reports, that will make clear how the Fund is being spent.

f) The Bank will make appropriate efforts to prevent the present value of the Fund from being eroded by decline of the monetary rate or by other factors.

g) Depending on the size a loan, the term for repayment will be from 1-3 years. The Bank will make a schedule of repayment, to include a grace period, in general, of 6-10 months, of loans for each economic entity that must be approved by both the Bank and the borrower. The repayment period for the loan principal and interest should be the same.

h) The Bank will have the right to apply normal banking practices to the collection, extension or other appropriate legal action in connection with overdue, delinquent or unpaid loans.

i) If loans are not repaid due to reasons beyond control of the Bank, the Bank will determine whether to replenish the operating portion of the Fund from the monies held in reserve in accordance with an appropriate court decision and will inform the MTI and the Embassy of the United States of America.

2. In order to improve the results of projects to be implemented under this agreement, the Bank is authorized to use 0.003% of the Fund to provide information and training -- through the media and in writing -- to the rural areas regarding the operation of the Fund.

Four. Settlement of disputes.

If any dispute over the use of funds or the interpretation of the obligations under this agreement should arise, the parties agree to hold negotiations in good faith to settle the dispute.

If they are unable to settle the dispute, the parties to this agreement hereby agree that they will refer their dispute to a court in Mongolia, and that the decision of the court will be accepted and implemented by both sides.

Five. Miscellaneous.

1. Upon request from the MTI, the Embassy of the United States of America, or both, the Bank will submit its reports and records on the funds being spent under this agreement. This access to the

records of the Bank which is granting loans from the Fund is to assure the above organizations that the funds are being used for the purposes specified in this agreement. In any event, the Bank will submit quarterly reports on the status of the Fund to both MTI and the Embassy.

2. The Bank will maintain adequate book-keeping and records on spending of the Fund, including on funds used under Section 3(2). MTI and the Embassy of the United States of America reserve the right to visit and evaluate loan projects for the duration of the loan period.

3. In case a bank specialized in development of small and medium industries is created, the MTI, with concurrence from the Embassy of the United States of America, will have the right to transfer the Fund to this specialized bank.

4. This agreement can be modified or amended by mutual agreement in writing between MTI, the Bank, and the Embassy of the United States of America, but such modifications or amendments must be consistent with the goals stipulated in Article 1 of this agreement.

Done in Ulaanbaatar on April 22, 1994.

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For the Ministry of Trade
and Industry

Kh. Ganbaatar
General Director
Industrial Policy and
Investments Department

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For Mongol Daatgal Bank

Sh. Goohuu
General Director

JICA

