Mongolia: Sanitation Situationer in Ulaanbaatar City
BRIEF INTRODUCTION OF UB CITY

- Ulaanbaatar is the capital of Mongolia.
- Population - 1.15 mln citizens /2010/
- Elevation-1351m above sea level
- Occupies the area of 4704 sq.km
- Lowest temperature -40°C
- Highest temperature +35°C
CURRENT SEWERAGE CONDITION IN ULAANBAATAR

• About 53% of 260,000 households (HH) of Ulaanbaatar are individually connected to the water supply network.

• 147 kms. of existing sewer pipeline in city center collect the sewage of approx. 97,000 HH (400,000 people); material of pipe- ceramic, cast iron, ferroconcrete, and asbestos

• 2 main collectors cross the city from the East; discharge the sewage to the Central WWTP in the West of the city centre

• Collection network is old and in poor condition; rehabilitation of the existing sewers and extension of the network are necessary.

• Majority of the population however, especially in the ger areas disposes the sewage in simple pit latrines; there are 75,000 pit latrines in the ger

• 65% of Ulaanbaatar’s population is not served by public sanitation services.
THE CENTRAL WASTE WATER TREATMENT PLANT

- Constructed in 1964 with capacity of 45000m³/day; expanded in 1979-1986 with biological treatment and capacity was increased up to 200000m³/day.
- Treats domestic waste water from about 0.6 million inhabitants and waste water from industries; actual flow rate: 150000m³/day
- Method of sewage treatment - mechanical and activated sludge process
- Annual operation cost- 5.3 billion MNT /4.3mln$/
- Total electricity consumption-21mln kWt (1.4mln$)/year
- Cost for 1m3 ww-MNT86.09 (0.06USD/m3)
FLOWDIAGRAM OF WASTEWATER TREATMENT PLANT
PROBLEMS IN CWWTP UB CITY

• Poor influent wastewater quality (uncontrolled amounts of industrial wastewater with high pollution)
• Treatment capacity WWTP insufficient
• Structural violation of water discharge standards (effluent standards are not met because of poor sludge quality and insufficient conversion of COD/BOD and NH3)
• Concrete facilities are old
• Sludge treatment technology lacking
OTHER ISSUES AND CHALLENGES IN SANITATION

- Topography, lay-out of land (irregular streets), distance to the central utility networks make installation of piped services in ger areas difficult.
- Norms and standards for infra development are geared for the city needs and not the ger areas.
- Constructing and operating infrastructure facilities in the Mongolian climate is expensive and requires special measures to operate in winter.
- High investment cost.
POTENTIAL AREAS FOR TECHNOLOGY EXCHANGE

- Appropriate sanitation system for ger areas
- Over-all sanitation system suitable for local conditions and affordable to the end-users
- Sludge treatment technology
THANK YOU FOR YOUR ATTENTION