Technology Fact Sheet for Mitigation

Technology 3: **Improved heating stoves** [i]

Subsector	Commercial, Residential Energy Consumption
Sector GHG emission (tCO_2-eq)	1,425,000 tCO_2-eq in 2006
Technology Name	**Improved cook stoves**
Background/Notes, Short description of the technology option sourced from ClimateTechWiki, Seminars, etc	Among the various technologies introduced in the realm of efficient household heating and cooking methods, stoves are the most popular and widespread in both urban and rural communities. Especially in developing countries, stoves occupy a central place in the health, environmental, economic and social domains of life. A good cooking stove is defined as one that meets technical, scientific and safety standards, and has high combustion quality, technical efficiency, minimal smoke emission, ergonomics and structural stability. Since about 1.5 billion people in the world use traditional stoves for cooking and heating, efforts to improve the efficiency of cooking and heating stoves have been increasingly popular in the developing world. Improved stoves come in different forms and sizes. http://climatetechwiki.org/technology/imcookstoves
Implementation assumptions, How the technology will be implemented and diffused across the subsector?	The government of Mongolia implements air pollution reduction measures and distributes energy efficient and low-smoke stoves for households in ger district areas. The efficient coal stoves could reduce coal consumption by 30-50%. We assume that the household with an inefficient traditional stove uses 5 tons of coal per year. The modern low smoke stove could reduce coal consumption by 30%. There are 100000 household in which energy efficient coal stoves should be installed.
Reduction in GHG emissions	GHG emissions are expected to be reduced by 210.000 tCO_2/year
Impact Statements - How this option impacts the country development priorities	
Social development priorities	For about eight months of the year heating is essential for the survival of residents. 60 percent of the city's residents live in peri-urban *ger* districts; areas populated in the main by poor people from Mongolia's rural areas who are arriving in a steady flow. UB's population has expanded by 70 percent over the last 20 years and unfortunately the city's infrastructure has not been able to keep up with the growth. In these areas, which are mainly located upwind of the city, the only sources of heating are poor quality stoves or individual

	household boilers fueled by coal, wood.
Economic development priorities	
Environmental development priorities	Ulaanbaatar is the coldest capital city in the world and during the coldest months of the year - December, January and February - the air quality is dangerously low. By improving the efficiency of fossil fuel burning heating and cooking stoves, the air pollution of the urban city will be reduced and also the amount of toxic smoke produced can be reduced and health risks to citizens minimized.
Other considerations and priorities such as market potential	-
Costs	
Capital costs	It is assumed that the capital cost of the traditional inefficient stove is about 60USD. The cost of the energy efficient stove is 260 USD depending on the capacity. With assumed average lifetime of 10 years the annualized capital cost would be 20USD. The total annualized capital cost for 100000 stoves will be 2 million USD.
Operational and Maintenance costs	Coal saving will be 150000 t/year. Cost of coal savings will be 3.0 million USD/year. Operational and Maintenance costs will be -1 million USD.
Cost of GHG reduction	The cost of GHG reduction is expected to be - 4.7 USD/tCO_2

[i] **This fact sheet has been extracted from TNA Report – Technology Needs Assessment For Climate Change Mitigation– Mongolia. You can access the complete report from the TNA project website http://tech-action.org/**