



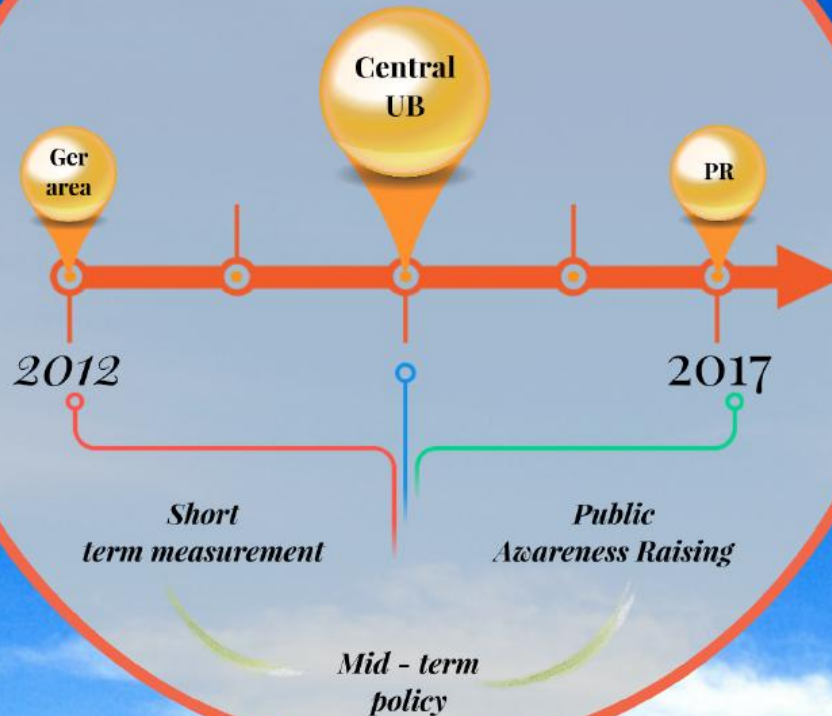
CLEAN AND EFFICIENT HEATING EXPERIENCE IN MONGOLIA

April 19.2017

COUNTRY OF BLUE SKY



ULAANBAATAR CLEAN AIR PROJECT



GER AREA PARTICULATE MATTER MITIGATION







40k HH



Prezi



SEET Lab

Stove testing



Ingestion	6	4,618	0.0%	11.8%	62.7%	1,378	96.4	-
CO/CO ₂ =2	213	Minutes of burn	34.48	VAL ID	A section that overlaps others will report correctly.			
CO/CO ₂ >2	214	8,303	0.0%	7.3%	62.8%	3,444	148.6	-
CO/CO ₂ =2	490	Minutes of burn	45.98	VAL ID				
CO/CO ₂ >2	491	10,759	0.0%	3.1%	67.8%	3,568	64.6	-
CO/CO ₂ >2	703	Minutes of burn	35.32	VAL ID				
CO/CO ₂ >2	704	4,045	0.0%	4.7%	66.9%	4,088	112.7	-
End	1,360	Minutes of burn	109.28	VAL ID				

SYSTEM EFFICIENCIES	Stove is Outside	Stove is Inside	FIRE	Fuel g AR	Fuel kg/hr AR	CO g/hr	PM _{2.5} mg/hr	CO/CO ₂
Cooking only	0.0	0.0	CO/CO ₂ =2	941.6	1.64	167.66	79,202.7	11.8%
Low Pressure Boiler	0.0	0.0	CO/CO ₂ =2	2287.3	2.95	193.87	37,664.5	7.3%
Radiant Heating & Cooking	0.0	68.8	CO/CO ₂ >2	2246.6	3.82	109.79	4,606.1	3.1%
Radiant Heating & Low Pressure Boiler	0.0	68.8	End	2613.9	1.44	61.90	388.2	4.7%
Radiant Heat & Low Pressure Boiler & Cooking	0.0	68.8	Overall	5086.3	2.15	117.83	20,737.8	6.0%
FIRE	Burn Time	Carbon Combust. Eff	MJ Yielded	KW Fire	CO Emitted g	CO ₂ g/MJ	PM _{2.5} g	PM _{2.5} mg/MJ
CO/CO ₂ =2	34.5	58.3	9.56	4.6	96.36	10.08	45.52	4,763.8
CO/CO ₂ =2	46.0	93.2	22.91	8.3	148.56	6.49	28.86	1,260.0
CO/CO ₂ >2	35.3	97.0	22.80	10.8	64.62	2.83	2.71	118.9
End	109.3	96.5	26.52	4.6	112.74	4.25	0.71	26.7
Overall	225.6	94.3	82.06	6.1	442.96	5.40	77.96	950.0
SPACE HEATING	Heating time	Σ Heating Eff %	Σ MJ in Home	KW Heating	Net KW/Hours	CO ₂ g/Net MJ	CSI System Eff	PM _{2.5} mg/net MJ
CO/CO ₂ =2	34.5	62.7	6.0	2.9	1.7	16.1		7,564.7
CO/CO ₂ =2	46.0	62.8	14.4	6.2	4.0	10.1		1,007.4
CO/CO ₂ >2	35.3	67.8	15.5	7.1	4.3	4.2		175.4
End	109.3	66.9	17.7	2.7	4.9	6.4		39.9
Overall	225.6	65.6	63.8	4.6	14.9	8.2	68.8	1450.3

SEET Lab activities . . .



in numbers . . .

SUSTAINABILITY

*High
operation
cost*

*Low
financial
capacity of
local producers*



SDC





*Designing
store model*



Prezi



*Developing
technology*



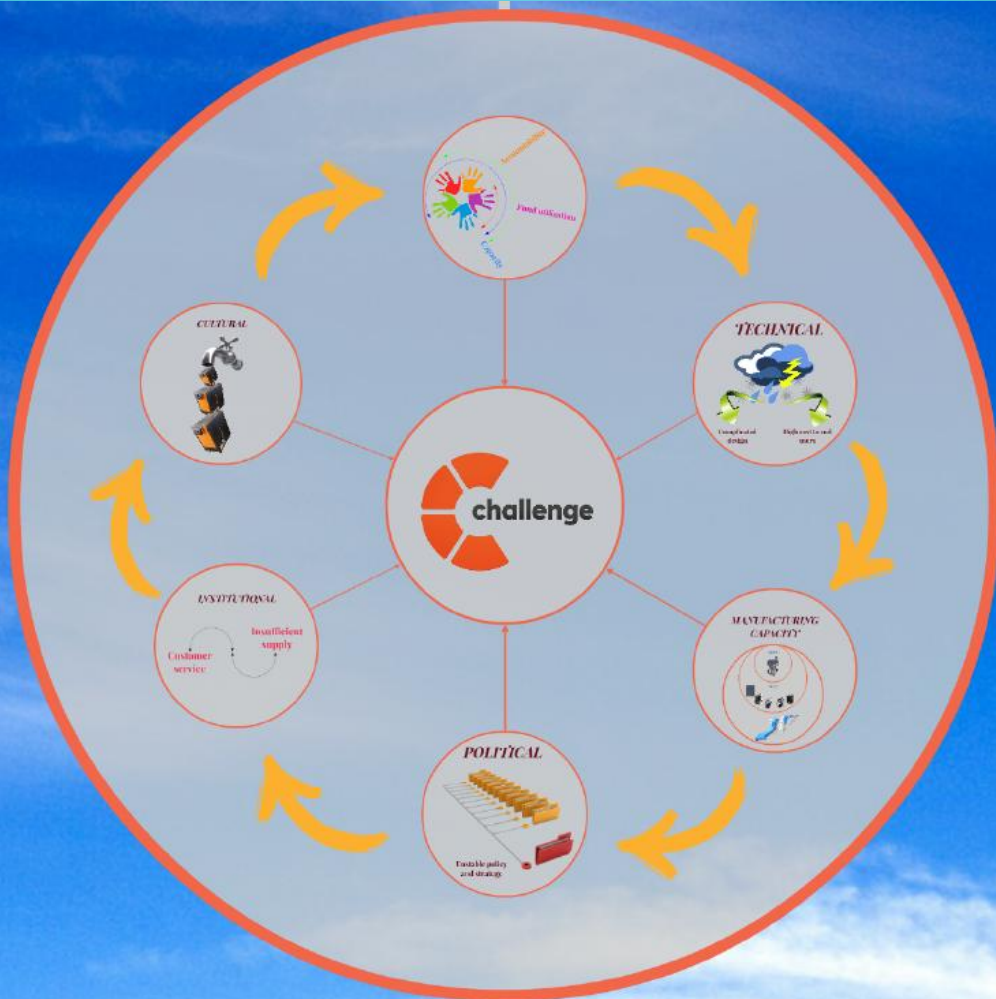
*Designing
store model*



*Helping producers to
improve tested models*

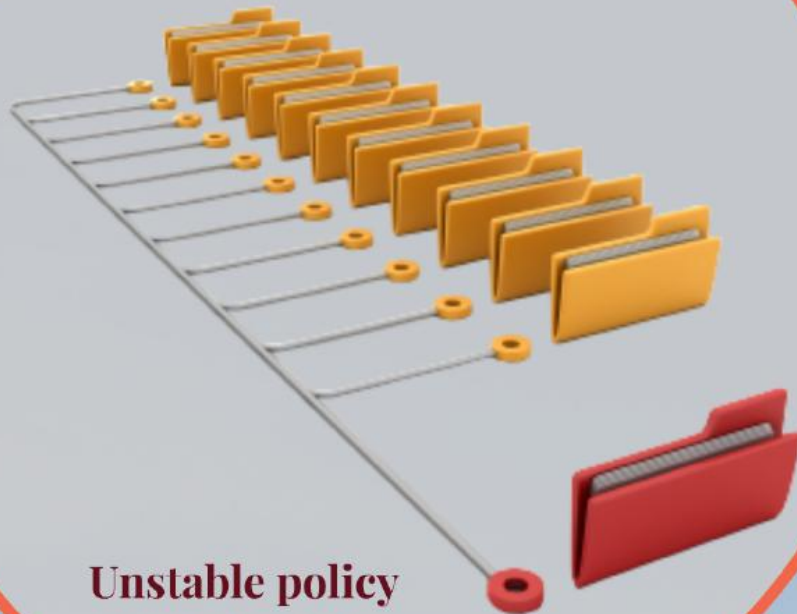


Capacity building program



Prezi

POLITICAL



**Unstable policy
and strategy**



TECHNICAL



**Complicated
design**

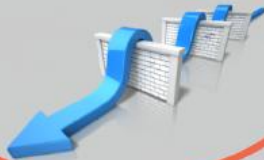
**High cost to end
users**

MANUFACTURING CAPACITY

2012



2017



2012



2012



2017



2012



2017



Limited functional capacity

- *Technology*
- *Equipment*
- *Finance*

Shortage of ceramic and cast iron manufacturing capacity

**High
manufacturing
cost**

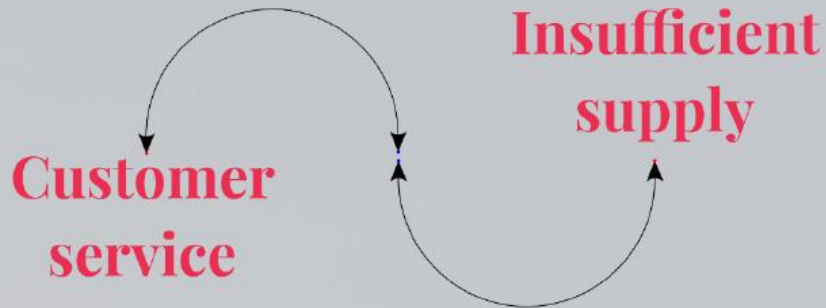


**Impedes
competitiveness**

CULTURAL



INSTITUTIONAL



FOLLOW-UP PROJECT



INCENTIVE SYSTEM



SUBSIDY PROGRAM



STRENGTH CAF



PUBLIC PARTICIPATION

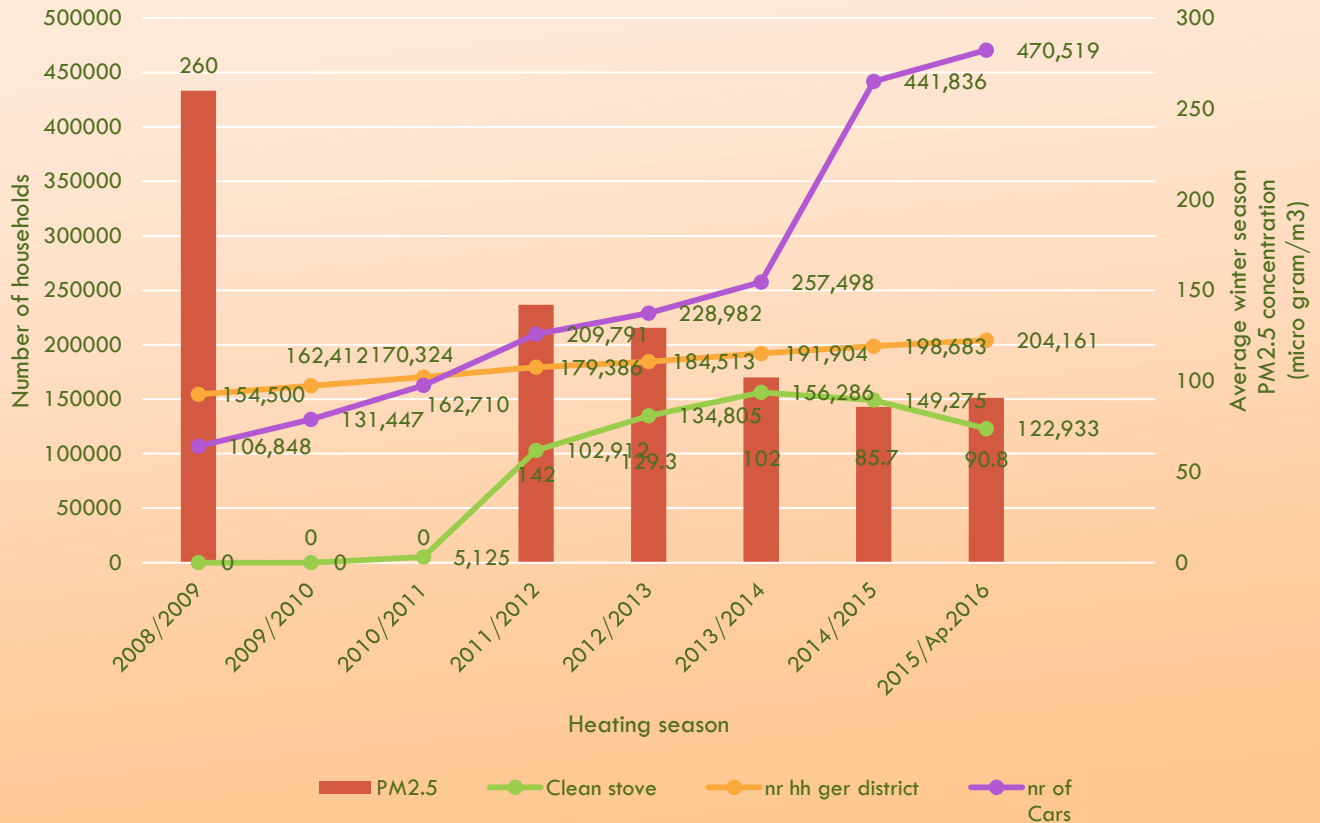


EMPOWER LOCAL PRODUCERS

IT MAKES DIFFERENCE . . .



Stove program impact and air quality





To be continued . . .