Alternative Energy Promotion Centre (AEPC) is the focal agency of Government of Nepal (GoN) under the Ministry of Science, Technology and Environment (MoSTE).
AEPC has been disseminating different models of Improved Cooking Stoves (ICS) right from its inception, under different programs supported by various external development partners.

Metallic improved Cook Stoves (MICS) are fuel efficient and less smoke generating. Some of the key specifications fuel efficiency and less smoke generation for Improved Cook Stoves can only be found by detailed testing.
As such, it may not be possible to verify all of the specifications when Improved Cook Stove is procured locally.
A standard IC stove has a metal body with Combustion Chamber made of thick mild steel sheet. All metal ICS distributed should reach the minimum performance standards outlined below and this is considered the minimum standard that all distributed Metallic ICS should meet.

Metal ICS Specifications	
Weight of IC stove	less than 2 kg
Material	Metal body with Combustion chamber made of thick mild steel sheet
Fuel	Wood
Finishing	Water Resistant and Fire Resistant Painted on Body
Function	Cooking and Room Heating
Life	Minimum 3 years

Different models of ICS can be **suitable for the GoN subsidy** if they comply with the **minimum technical standards for performance of solid biomass** shown below[1]:

Thermal Efficiency and fuel use

Type of Stove	Chimney Stove (Natural Draft)	Chimneyless Stove (Natural Draft)
High Power Thermal, efficiency (%)	≥ 20	≥ 25
Specific Fuel Consumption (MJ/min/L) *	≤ 0.045	≤ 0.039

*The high power values are mandatory values and low power values are preferred values only

Total Emission

Type of Stove		Chimney Stove (Natural Draft)	Chimneyless Stove (Natural Draft)
PM 2.5PM Emissions	High Power (mg/MJd)	≤ 979	≤ 386
	Low Power (g/min/L)*	≤ 8	≤ 4
CO Emissions	High Power (g/MJd)	≤ 16	≤ 11
	Low Power (g/min/L)*	≤ 0.20	≤ 0.13

*The high power values are mandatory values and low power values are preferred values only

Indoor Emission

Type of Stove	Chimney Stove (Natural Draft)	Chimneyless Stove (Natural Draft)
CO (g/min)	≤ 0.42**	≤ 0.62
PM 2.5 (mg/min)	≤ 2**	≤ 17

** Fugitive emission value only, excluding emission from the chimney outlet.

[1] Nepal Interim Benchmark for solid biomass Cook stoves (NIBC, 2014)

Safety performance

Type of Stove	Metallic body cooking and heating stove	Metallic body cooking stove
Safety assessment calculation	>= 45	>= 75

For additional information, please contact:

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Some of **Metal Improved Stoves** that can be found in **Nepalese Market**:

1. Bio Char Stove (Rocket Principle)

Bio Char Stove Specifications	
Made in	Nepal
Type	Metal Stove with Metal Combustion. Chamber and Grate
Use	Cooking and Room Heating
Life	More than 3 years

Benefits:

- Biochar-producing stoves are potentially much cleaner, with lower emissions of carbon monoxide, hydrocarbons, and fine particles.
- Biochar-producing stoves create biochar that sequesters carbon in soils, may in some cases reduce emissions of nitrous oxide (a powerful greenhouse gas) from soils, improves fertility, and increases productivity in degraded soils.
- Biochar-producing stoves can accommodate many forms of agricultural residues—some without further treatment. Collecting this residue is another income generating opportunity not presently available for most other stoves since they cannot utilize that type of fuel.

2. Briquette Wood Stove:

Bio Char Stove Specifications	
Made in	Nepal
Type	Metal Stove
Use	Cooking and Room Heating
Life	More than 2 Years

Benefits:

- Local Design with Big Air Passage with Primary and Secondary Air Flow System.
- One of the safest stoves on the market.
- Less heat, less smoke and less pollution.
- It drastically reduces the risk of health problems with blue and red flame.

- Saves more than 60% of wood consumption.
- Light Weight and portable (Less than 2 Kg)

3. Approvecho Stove (Rocket Principle)

Approvecho Stove Specifications	
Made in	Nepal
Type	Metal Stove with Fire Brick. Combustion Chamber
Use	Cooking and Room Heating
Life	More than 5 Years

Benefits:

- One of the main purposes of the stoves is to reduce fuel wood use (although some replace kerosene and electricity) and hence greenhouse gas emissions. Cooking practices and the sustainability of wood supply vary between countries and regions, and ARC has used several different methods to assess savings, including both laboratory and field studies. All these methods agree that, compared with a cooking fire, the stove without a pot skirt saves about 40% of fuelwood. If the skirt is used, this figure increases to about 50%. The stove also reduces particulate emissions by 50 to 70%, and carbon monoxide emissions by 50 to 60%.
- Where fuelwood is collected, time and effort are saved because less fuel is needed. The stove also heats up quickly, so cooking takes less time. Where fuel is purchased, users save money.

4. Prakti Stove

Approvecho Stove Specifications	
Made in	India
Type	Metal Stove with Special Metal Plate
Use	Cooking and Room Heating
Life	More than 5 Years

Benefits:

- Saves 2 Kg of the Wood Each Day.
- One of the safest stoves on the market.
- Less heat, less smoke and less pollution.
- It drastically reduces the risk of health problems

5. Envirofit Stoves:

Envirofit Stove Specifications	
Made in	China
Type	Metal Stove with Ceramic. Combustion Chamber
Use	Cooking and Room Heating
Life	More than 5 Years

Benefits:

- Health Benefits: reduced exposure to the harmful effects of breathing in smoke by the chief cooks, usually women.
- The rest of the family also suffers, as they usually sleep in the room close to where the cooking is undertaken. This exposes them to high levels of noxious gases and harmful particulates while they sleep.

- Economic Benefits: reduced cost of wood to the household, because the stove burns more efficiently and uses around 60% less wood. Less time spent collecting firewood means more time spent on other more economically productive activities, including time spent on alternative income generation.
- Environmental Benefits: the reduction of quantities of fuel wood reduces deforestation. Forests are essential for the absorption of CO2.
- It also displaces the use of LPG in some households which would otherwise release CO2 and contribute to climate change.

6. VITA Stoves:

Envirofit Stove Specifications	
Made in	China
Type	Metal Stove
Use	Cooking and Room Heating
Life	More than 3 Years

Benefits:

- Health Benefits: reduced exposure to the harmful effects of breathing in smoke by the chief cooks, usually women.
- The rest of the family also suffers, as they usually sleep in the room close to where the cooking is undertaken. This exposes them to high levels of noxious gases and harmful particulates while they sleep.
- Economic Benefits: reduced cost of wood to the household, because the stove burns more efficiently and uses around 60% less wood. Less time spent collecting firewood means more time spent on other more economically productive activities, including time spent on alternative income generation.
- Environmental Benefits: the reduction of quantities of fuel wood reduces deforestation. Forests are essential for the absorption of CO2.
- It also displaces the use of LPG in some households which would otherwise release CO2 and contribute to climate change.

7. Sampada Gasifier Stove:

Envirofit Stove Specifications	
Made in	India
Type	Stainless Steel Stove
Use	Cooking and Room Heating
Life	More than 2 Years

Benefits:

- Stainless steel outer body, mild steel fuel chamber
- Fuel: Wood chips, pellets, biomass briquettes, small twigs, wood chunks, etc.
- Charcoal produced as a by-product
- Source of Additional income: After cooking, charcoal is left behind in fuel holder. Burning 1 kg of wood, leaves 200 g of charcoal

8. TLUD Champion Stove:

Envirofit Stove Specifications	
Made in	India
Type	Stainless Steel Stove
Use	Cooking and Room Heating
Life	More than 2 Years

Benefits

- The key focus is to design an integrated cooking energy solution for the wood stove market that addresses the "front-end" and the "back-end".
- While the TLUD gasifier technology is not new, Servals' TLUD Stove's claim is that it represents a higher order of fuel efficiency, user friendliness, safety and newer user application.
- Recognized as a "carbon neutral" initiative; In fact would be "carbon negative" when the charcoal is dumped back into the soil.
- Has the potential to create a series of economic activities around fuel collection and distribution