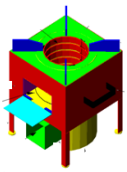
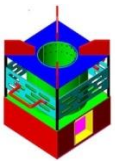
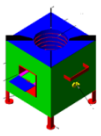
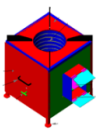
TECHNOLOGY/PRODUCT PROFILE

Title	Improved natural draft front fuel charged cookstoves namely GVK0.88, GVK1.1, GVK1.3, GVK1.9 for domestic and GVK2.0,GVK2.5, GVK3.5 and GVK4.8 for community sector and an improved GVK1.1FD forced draft top fuel charged biomass cookstove.
Area of application	Cookstoves for cooking of food which will be environment friendly use with less smoke and also consume less fuel wood .For cooking application in domestic as well as community sector.
Commercialization status	1.M/s Unicus Engineering Pvt.Ltd. Regd Office :23, Madhusudan Nagar,Unit IV, Bhubaneswar, Dist:Khurda,Pin:751001 2. M/s Perfect Research Engineering, Palasuni,PrachiVihar, Plot No.3364,Khurda, Bhubaneswar-25 3. M/s Gram Tarang Employability Training Services Pvt. Ltd.,Corporate Office,17,Forest Park, Bhuhbaneswar 4. M/s Access Grameen Mahila Udyog,Koraput 5.M/s Sai Grameen Udyog Pvt. Ltd.,Faridabad,New Delhi(Natural and Forced Draft Cookstove)
Techno-economics	Cost of cookstoves : Rs 900/- to Rs. 4500/- Advantages over traditional chulha: Fuel saving(%) :30 to 50% PM Reduction(%): 50-70% CO Reduction(%) : 50-60%
Inputs for commercialization	o Mild steel sheet/Flat o Welding machine, bending, drilling and sheet cutting machine, 6V to 12V battery and small computer 12V fan
Technology package	For demonstration Rs 5000/- only. Rs.50000/-+GST for all types of cookstoves
Contact address	Director,CSIR-IMMT,Bhubaneswar-751013



MODELS	GVK 0.65 Natural Draft domestic cookstove	GVK 0.88 Natural Draft domestic cookstove	GVK1.1 Natural Draft domestic cookstove	GVK1.9 domestic Natural Draft cookstove	GVK 1.1 FD domestic forced draft cookstove	GVK 2.0 Natural Draft community cookstove	GVK 2.5 Natural Draft community cookstove	GVK3.5 Nat.Draft community cookstove		GVK4. Natur Draf commu chulh
Thermal	28	30	29	28	35	27	28	26		25
Emissions CO(≤5g/MJ) and PM(≤350 mg/MJ)are within permissible limit										
Burning	0.65	0.88	1.1	1.9	1.1	2.0	2.5	3.50		4.80
Water Boiling Rate(lit/hr)	12	19	22	32	27	37	40	53		70
Power (kW)	1.0	1.5	1.6	2.8	2.0	3.2	3.4	4.6		6.5
For People of	5	7	10	20-30	15	50	70	100		200
Aprox.Cost (Rs)	900	1000	1200	1800	3000	2500	2800	4000		4800
Remark	for very small family	for very small family	Ideal for small family	Ideal for big family	Ideal for medium family	for big family as well as hostel	for big family as well as hostel	Ideal for anganbadi /hostel		

Title of Product/Design/Equipment: Design and development of domestic and community cookstoves starting from small family of 5 to 200 community size.

Background of the technology:

Developing countries are now suffering serious and increasingly rapid deforestation. In addition, to environmental degradation, loss of forest cover removes the wood energy resources on which traditional rural economies are based. In response to the increasingly serious shortages, programs to conserve fuelwood supply and to expand fuelwood production have multiplied. Out of every five rural and one out of every five urban households in India primarily depend on direct burning of solid biomass fuel like fuel wood, crop residue and cattle dung in traditional mud stove/ three stone fire for cooking. Such traditional cooking practice is characterized by incomplete combustion of biomass fuels resulting in emission of toxic smoke. Women (and accompanying children) who get exposed to this smoke every day during cooking food in a mud stove, particularly in poorly ventilated kitchens, face increased risk of pneumonia, respiratory diseases, etc. Kitchen smoke is responsible for half a million premature deaths in India annually. The toxic smoke also contains climate change agents like carbon monoxide and black carbon. Such traditional mud stoves also have low thermal efficiency that results in high fuel consumption thereby contributing to deforestation in some areas.

Application/Uses:

Cookstoves for cooking of food materials which will be environment friendly use with less smoke and also consume less fuel wood.

Salient Technical Features including Competing Features: CSIR- Institute of Minerals and Materials Technology (IMMT), Bhubaneswar has developed ninenew GVK series cookstoves starting from a small family to big family upto community size of 200 people. These cookstoves were designed and developed under the inhouse research program by the institute to save the fuel energy as well as to reduce the environment emission. These stoves are portable multi fuel natural draft with front fuel feeding. Small fuel can be fed in between the pot gap during cooking time. A variety of solid fuels can be burnt. Both primary and secondary are entered in the bottom as well as in the fuel feeding port below and above the grate, for this reason very less emissions. This a metallic stove where inside combustion chamber was made with MS flats as ring one upon other with air space for entering of secondary air. Grate are also made with 19 X 6mm MS flat with air space for entering of primary air. Fuel feeding port will serve as both primary and secondary air requirements. A baffle plate is provided which can be removed or inserted as and when required for use of long fuel in the partition of the fuel feeding port.

Level/Scale of Development: GVK-0.65, GVK-0.8, GVK-1.1, GVK-1.9, which caters to domestic sector of a small family to medium family, GVK-2, GVK-2.5, GVK-3.5, GVK-4.8, which caters to big family upto 200 people.

Domestic scale: GVK0.65 to GVK 3.5 Natural Draft and GVK1.1FD Forced draft technologies were transferred.

Environmental Considerations: Environment pollution free as well as saving of fuel

Technology Package: Design and development of GVK models cookstoves for domestic and community sector

Contact Details:

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