

# PYRO - AGNI SAKHI TWO PAN HOUSEHOLD STOVE

AN INNOVATIVE TECHNOLOGY THAT  
MAINSTREAMS BIOMASS AS A COOKING FUEL



Offers cooking convenience on par  
with LPG and fuel security too  
in the remotest location in **Rural India!**

**Preferred fuel:** *Agro residues – sunflower / chilli / mustard / toor dal stalks / corn cobs / cashew shell, husks / twigs /*

## **Qualitative features :**

- ↗ Recurring cost of fuel for cooking : almost 0 when using locally collected biomass
- ↗ Can start and function with no smoke or soot
- ↗ Allows fuel control, air control and can also cook reasonably fast
- ↗ Multi-fuel used (Any biomass fuel size up to 50 x 50 mm can used)
- ↗ Save space and safe to use; Easy to handle
- ↗ Well insulated stove body. Stove body temperatures less than 45 C

## Innovation from the same team that designed the Oorja stove

Subject	Oorja (top fed)	Agni Sakhi
Continuous?	No, fixed fuel amount, 60 mins	Continuous
Fuel Consumption, kg/h	0.6	1 kg/h single pan, 1.5 kg/h 2 pan (a unique new design)
Power level , kWth	~3	4 kWth (single pan) 6 kWth (2 pan)
Fuel	Supply of prepared dry agro-residue pellets	Sized dry fuel - wide variety, density does not matter
Natural convection or fan based	Rechargeable battery based power supply to a specifically designed fan	Rechargeable battery based power supply to a specifically designed fan
In-situ combustion?	Gasification + combustion	Gasification + combustion
Efficiency (10 lit water + Al vessel)*	48 to 52 %	38 to 44 %
Emissions	Independent of the user. Operator only controls the power	Simple operational procedure limits the emissions.
CO emission, g/MJ*	1	0.08 to 0.1
$\Sigma\text{CO}/\Sigma\text{CO}_2$	0.015 to 0.02	0.008 to 0.01 comparable to LPG stove
Soot	None	None
Particulate matter*	0.75 mg/MJ (due to low zones)	0.8 to 1 mg/MJ

\*measured in Jain University and at Indian Institute of Science

- Feast Patent :** ❖ **Patent Ind: 1249/CHE/2014 “Sized multi-fuel horizontal Continuous Combustion Device(SM-HCCD)”**  
 ❖ **Agni-Sakhi™ SM-HCCD of 1-1.3kg/hr systems**  
 ❖ **Agni-Mitra™ SM-HCCD of 1.3-1000kg/hr systems**

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