



**SHRI RUDRA GROUP**  
**BURN SMOOTH PETROCHEM**

1<sup>st</sup> floor, MEGH Patel Complex, Amaravati Road,

WADI, NAGPUR-440023.

*Energy Saving Proposal*

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# **INTRODUCTION OF**

**BURN-O-THERM MULTIFUNCTIONAL SOLID FUEL  
ADDITIVE**

**FOR SAVING**

**PRECIOUS SOLID FUEL LIKE**  
**Coal, Anthracite, Lignite, Pet Coke, Biomass**

**ENVIRONMENT & ENERGY CONSERVATION**

**FOR THE PEOPLE**

**FOR THE NATION**

**FOR YOURSELF.**

*Energy Conservation, Today's Need, Our Motto.*



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**DATE :**

*Respected Client,*

*We feel pleasure in introducing you our product Burn-O-Therm a multifunctional fuel additive for the solid Fuels like Coal, Lignite, Anthracite, Pet Coke, Biomass etc.*

*Technical details, Our client base, Cost Benefit Economics about our product are given in the following pages.*

*We give guarantee of above 3% savings on the use of our product on any platform, any combustion equipment, failing which you need not pay our material cost used in the trial ( only VAT/CST which is very minor & VAT credit of the same is available, will be your stack for the trial )*

*Request your patronage & Trial Order for going ahead jointly in the direction of Energy Conservation & Environment protection.*

*Waiting to hear form you earnestly.*

*With Warm Regards.*

**DR. Sanjay Trivedi**  
**C.E.O.**



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*Energy Conservation*

*Your Need*

*Our Motto.*



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**ABOUT US & OUR PRODUCTS**

We are an ISO-9001COMPANY engaged in manufacturing of Fuel additives since 2003. Based at Nagpur.

First we have launched our Liquid fuel additive BURN-ALL in 2004 which reduces consumption of Furnace oil, LDO, LSHS, HSD by 5-8% & has been approved by esteemed organizations like

1. **TAMILNADU PETROPRODUCTS LTD.**, Here we have given them **4.77 % savings in 33 TPH boiler** where in single boiler they will be savings 84.83 lacs P.A.
2. **HINDALCO INDUSTRIES LTD.**, Here we have given them not only Burn All additive but also our consultancy on retainer ship basis resulting in overall **savings of 25%**
3. **LLOYDS STEEL INDUSTRIES LTD.**, Here they have got **7.49 % savings** leading to use of fuel additives valuing almost 3.33 Crores over a period of 4-5 years till they commissioned MINI BLAST FURNACE & switched over to HOT EXHAUST GASES.
4. **ORDNANCE FACTORY BHANDARA.**, This is **MINISTRY OF DEFENCE** organization who have conducted Value Engineering Trial led by a team of 9 members from all the sectors & established 3-4% net savings during the trial In last 3 years they are using solely Burn-all & during this period their annual consumption of FO has dropped from 8500 KL to 6500 KL
5. **PARLE GROUP VENDORS** : They are food processing units but **almost 15 units** used our product and **got the savings between 5-8% .**



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**AT all the places following positive changes are observed.**

- Reduction In 'CO' Emissions by 50 - 75% from existing level.
- Reduction in Excess Air,
- Improvement in CO<sub>2</sub> level.
- Improvement in Gross Combustion Efficiency by 8-10%
- Improvement in Flame Color from Orange to Brilliant Yellow.
- Reduction in **Specific Fuel Consumption ( S.F.C. )**
- Reduction in **Scaling Losses in Rolling Mills.**

**Salient features of Burn-All fuel additive are :**

- Burn All has Neutral PH VALUE.
- Burn All do not corrode any metal (Certified by Chemtech).
- Burn All has built in Detergent & Dispersant which keeps the system Storage Tank till Burner Clean.
- Active Solvent in Burn All Recovers Carbon Particles from Sludge, which helps using even a Waste Material.
- Burn All has built in Oxygen 25-30%, (Certified by Anacon Lab is 29.75%) which converts un burnt particles during combustion phases from C→CO→CO<sub>2</sub>. Thus complete combustion takes place.



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**ADDITIVE FOR SOLID FOSSIL FUELS LIKE, COAL,  
LIGNITE, PET COKE, ANTHRASITE , Biomass etc.**

**Our second product** is for Coal Trade named as **BURN-FAST** later changed to **BURN-O-THERM** in 2011 after introduction of **NANOTECHNOLOGY**.

Continuous improvements & Research has made our product strong enough to give Great Savings in different coal user segments :

- Steel Re-rolling mills registered 10-15% Savings. :-
- Process Boilers registered 08-12% savings. :-
- Captive Power Plants Savings are from 4 to 11% depending on the type of Boiler they are using.
  - Basic Boiler 10-12%
  - Travel Grate Boiler 8-10%
  - F.B.C. /AFBC Boiler 3-8%
  - PF BOILERS – More than 3% expected.

**How Burn All Works is given in the following pages with Visuals.**

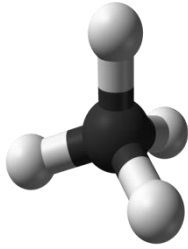
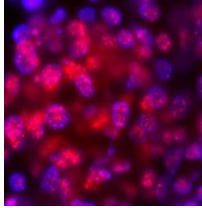




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**Technology - HOW BURN-O-THERM WORKS**

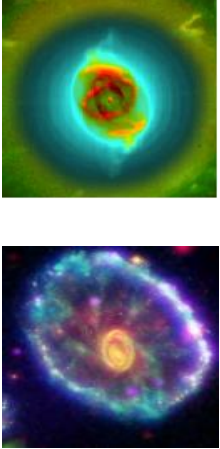
S.No.	PARTICULARS	IMAGES.
1	<p>1. <b><u>By Oxidation of Un-burnt or Partially burnt Carbon</u></b> : - Burning of Carbon means Oxidation of Carbon. When Carbon burns, complete combustion means “<math>C+O_2=CO_2 + 8000</math> Kcal”. But eventually 100% carbon doesn't burn completely and some part of the carbon reaches only up to CO level means “<math>C+O=CO+2000</math> Kcal” means there is a loss of 75% energy i.e. 6000 kcal for the generation of CO. Also some un-burnt carbon is left over from Ignition ( LOI) which joins ash that is 100% loss of energy equivalent to Un burnt in Ash (LOI) . BURN-O-THERM embedded with the coal particles releases “O” which completes the reaction at primary combustion stage. Thus, “<b>BOOST THE COMBUSTION</b>”.</p>	 
2	<p><b><u>BY Saving Coolant effect of Excess Air</u></b> :- In normal case, we operate at 40-60% excess air means, oxygen level of almost 8 to 12%. Suppose, if we convert this excess air into volume say 10,000 Cu Ft per Minute (CFT) means useful part (i.e. O<sub>2</sub>) we are getting, only 2000 CFT &amp; N<sub>2</sub> (WHICH IS UN-REQUIRED GAS ) 8000 CFT. Logically when we liberate the OXYGEN through chemical reaction we can reduce at least 50 % excess air than existing, which is going into system at ambient temp. At any time differential temp between furnace temp and ambient temp is 800-1000 degree centigrade.. <i>So the coolant effect is avoided to the extent of Air we can reduce.</i></p>	 



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3	<p><b><u>BY Improved Methanisation</u></b> :- Coal is having min. 3.5% intrinsic moisture means, for 100 MT COAL charged 3.5 MT H<sub>2</sub>O (WATER) is pumped inside the furnace. Chemical reaction at elevated temp breaks the water molecule in presence of BURN-O-THERM and Hydrogen liberated helps in METHANISATION <math>C+2H_2 = CH_4</math>. Which has 12000 Kcal GCV. <i>Means instead of wasting latent heat for converting water into steam. The water is split into energy. This is our 3<sup>rd</sup> Generation Technology.</i></p>	
4	<p><b><u>The Chemical Reaction :-</u></b></p> <ul style="list-style-type: none"><li>➤ In presence of our additive (BOT), moisture in the coal is split into ‘H<sub>2</sub>’ &amp; ‘O’</li><li>➤ When primary combustion of the coal is over, the split H<sub>2</sub>, reacts with ‘CO’ generated in the primary combustion of coal at plazma stage.</li></ul> <p><b><math>2CO + 2H_2 = CH_4 + CO_2</math></b></p> <p>You will find that the OUTPUT is highly Combustible Gases which improves energy output. &amp; even if methanisation is improved by 10% you end up reducing the coal consumption by 10%.</p> <p><i>This phenomena of methanization is widely used in coal gassification plants in Secondary Steel Technology.</i></p>	





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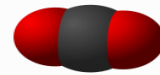
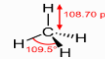
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## Our Solution

**The Additive accelerates the chain reaction leading to final blend of**

- **CO = 6000 Kcal.**
- **CH<sub>4</sub> = 12000 Kcal.**
- **H<sub>2</sub> = 33000 Kcal.**
- **Thus gives you higher energy output depending on Coal Quality**



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## How Combustion Take Place With Additive & Without Additive



**Without Additive Combustion**



**With Additive Combustion**

7



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**AT A GLANCE CORPORATE CLIENT PROFILE**  
**OF BURN SMOOTH PETROCHEM**



**Excel Industries Ltd.**  
The courage to dream. Together.



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**ADITYA BIRLA**



**HINDALCO**



Tamilnadu  
Petroproducts Ltd.



**MUSCO**

Mahindra UGINE Steel Company Limited



**YASH AGRO ENERGY LIMITED**



**LAXCON**  
GOPAL GROUP OF INDUSTRIES  
THE "TEAM" LEADERSHIP

**LSR**  
GROUP



**R. L. STEELS & ENERGY LTD.**



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## **COST BENEFIT ANALYSIS**

Due to different size of coal feed, moisture level & residence time the dozing ratios are different in diff applications. Also the cost of coal varies due to various subsidies offered by government, So cost benefit is worked out with following presumptions :

S. No.	PARTICULARS	Basic Boiler	Traval Grate	F.B.C. Boiler	CFBC PF Boilers
1	Coal Rate ( Per MT)	5000	4000	4000	3500
2	Dozing Rate (Coal:BOT)	1000:1	1500:1	2500:1	5000:1
3	Gaurenteed savings	8%	6%	4%	3%

### **COST BENEFIT WORKING on every 1000 MT COAL Consumption:**

S. No.	PARTICULARS	Basic Boiler	Traval Grate	F.B.C. Boiler	CFBC PF Boilers
1	Coal saved (in mt)	80	60	40	30
2	Value of Savings	4,00,000	2,40,000	1,60,000	105000
3	BOT Treatment Req'd	100	666	400	200
4	@ Rs. 250 BOT Cost	2,50,000	1,66,500	1,00,000	50,000
5	Net benefit on Gaurenteed Savings.	1,50,000	74,000	60,000	55,000
6	Max We achieved	12%	10%	7.5%	First PF Trial is underway.

Note : Though at sl. No 5 above net benefit is given on gaurenteed savings but at diff boilers we have proved different % of savings which are above Gaurenteed Savings. Hence you may expect more benefits than the Gaurenteed.



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## Company Profile – For Vendor Registration

1	<b>NAME</b>	<b>BURN SMOOTH PETROCHEM</b>
2	<b>OFFICE ADDRESS</b>	1 <sup>ST</sup> Floor, 'MEGH' Patel Complex, Amaravati Road, Wadi, Nagpur. Maharashtra -India. Pin 440023
3	<b>Office Telephone</b>	07104220334
4	<b>Office Telefax</b>	07104220835X
5	<b>Email id</b>	<a href="mailto:Burn_smooth@yahoo.co.in">Burn_smooth@yahoo.co.in</a>
6	<b>Works Address</b>	Adj. to Hingna M.I.D.C. WADI, NAGPUR – 440023. M.S. INDIA.
7	<b>NSIC Registration No.</b>	NSIC/NGP/GP/B-201(986)/MH Dated : 2/1/2012
8	<b>VAT TIN NO</b>	27060316620-V Dated 1/6/2006
9	<b>CST NO</b>	27060316620-C Dated 1/6/2006
10	<b>IT PAN NO</b>	AASPT4513H
11	<b>BANKER</b>	UNION BANK
12	<b>CA ACCOUNT NO</b>	583301010050562
13	<b>IFSC CODE</b>	UBIN0558338
14	<b>SSI Registration No.</b>	DICN/REGN/5151 DT 30/5/2008
15	<b>ISO 9001 :2008 Cert No</b>	101984-A01
16	<b>IEC Code</b>	0308015959 Dated 4/6/2008