

# CORE AXIS **RDF** FIRING **RETROFITTING / MODERNIZATION** SOLUTIONS



Visit Our Website

**[www.coreaxisglobal.com](http://www.coreaxisglobal.com)**



# WHAT IS RDF (REFUSE-DERIVED FUEL)?

Refuse-Derived Fuel (RDF) is a fuel produced from various types of waste, which include non-recyclable plastics, paper, cardboard, textiles, and other combustible materials. It is used to generate energy through combustion in industrial boilers, cement kilns, and power plants. RDF is an alternative to traditional fossil fuels and contributes to waste management and energy recovery.

## Why RDF is Important

### Environmental Benefits:

Waste Reduction: Helps divert waste from landfills.

Carbon Footprint: Lower carbon emissions compared to conventional fossil fuels.

Resource Efficiency: Utilizes waste materials that would otherwise be disposed of

### Economic Advantages:

Cost Savings: Cheaper than traditional fossil fuels.

Waste Management: Provides a solution for managing municipal and industrial waste.

### Regulatory and Policy Support:

Many governments support RDF use through incentives and regulations to promote renewable energy and sustainable waste management.



# WHY CORE AXIS FOR RDF ?

With years of expertise in the field, our company has mastered the art and science of firing Refuse-Derived Fuel (RDF) in existing boilers. Our comprehensive approach has led to significant improvements in efficiency, sustainability, and economic performance for our clients.

## Our Journey and Expertise

**Established Expertise:** Under the guidance of Mr. P.D. Grover, who is a well-known name in the Indian subcontinent and also considered the father of technology for RDF/RDF incineration, we have developed a deep understanding of the intricacies involved in converting waste into energy.

**Successful Projects:** We have completed numerous successful retrofitting projects across various industries, helping our clients transition to RDF with minimal disruption and maximum benefits.

## Advanced Technologies and Systems

**Innovative Solutions:** We utilize state-of-the-art technologies which have led to many Innovations Like:

- Best in class retrofitting kits with short paybacks and high durability
- Special 3-pass design for best-in-class combustion with minimum cleaning cycle
- Increasing the steam temperature to 475 degrees
- Increasing the life of superheaters by considering special manufacturing techniques
- Increasing the uptime of the boiler (MINIMUM 330 DAYS PER YEAR)



# CORE AXIS RETROFITTING OFFERINGS

Amid the prevailing downturn in the paper industry, retrofitting stands out as a strategic remedy offering swift returns requiring only modest capital investment. Core Axis is at the forefront, delivering top-tier, cost-effective retrofitting solutions.

Core Axis offers two retrofitting solutions tailored to meet the specific steam consumption requirements of each customer :

- **Solution for Existing Paper Plant Machinery with unchanged Steam Consumption**

Core Axis can retrofit client's existing boiler and can make it compatible for firing RDF by Adding /Refurbishing all the necessary equipment's required for Efficient Combustion and implementing all the pollution control norms

- **Solution for New Paper Plant Machinery with Increased Steam Consumption**

Core Axis can provide old boiler with retrofitting it to make compatible for RDF firing and matching the steam consumption required by the client

# NECESSITIES FOR FIRING RDF

There are certain protocols that has been mandated by government for firing RDF in the boiler:

## FURNACE DESGIN

- The furnace has to be design such that the flue gas has to maintain 950°C for a residence time for minimum 2 seconds in the furnace zone which results in reducing the Dioxins and Furans emissions are reduced. The flue gas is further treated with activated carbon which ensures the PCDD/ PCDF are limited to less than 0.1 ng/m<sup>3</sup> of flue gas.

## AIR POLLUTION CONTROL EQUIPMENTS

- Lime Dosing – Hydrated Lime ( $\text{Ca(OH)}_2$ ) (> 90% Purity with Particle Size of 95% <10 microns) used as a reagent for treating acid gases, i.e.,  $\text{SO}_2$ , HCl, and HF at a temperature range of 140 – 145 °C.
- Activated Carbon Dosing – Powdered Activated Carbon (PAC) (having particle size of 20 – 300 microns with BET (Surface area) of >800 m<sup>2</sup>/g) with 490 kg/m<sup>3</sup> density, iodine number min. 600 with moisture maximum 10% when packed, with critical ignition temperature 260 °C, to be used for capturing Dioxins & Furans, and Heavy Metals by adsorption process.
- SPM Control & Chemical Reaction – Bag Filter serves two purposes: controlling the SPM and the reaction between acidic gases, lime slurry, and heavy metals/dioxins which are absorbed by active carbon.

## WASTE TO ENRGY PLANT

- Turbine needs to be installed for promoting the waste-to-energy plant, which has been mandated by the government.

# CASE STUDIES / SUCCESS STORIES AND ONGOING PROJECTS

## Case Study 1 : Retrofitting 18TPH IBL Fixed Grate Biomass Fired Boiler to RDF Fired Reciprocating Grate Boiler

- **Client:** MAHALAXMI CRAFTS AND TISSUES PRIVATE LIMITED
- **Project Scope:** Industry’s First Retrofitting of Fixed Grate Biomass Fired Boiler to RDF Fired Reciprocating Grate Boiler
- **Results:** Achieved 95% RDF firing and a payback time of less than 3 months

## Case Study 2: Three Pass RDF firing water tube boiler

- **Client:** NIKITA PAPER LIMITED
- **Project Scope:** Industry’s First Three Pass RDF Firing Water Tube Boiler
- **Results:** Achieved 100% RDF firing with 330 days uptime and a payback time of less than 6 months

## ONGOING PROJECTS

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# Thank You

For Your Attention

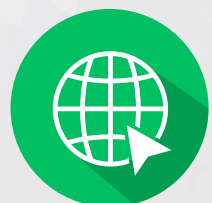
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