

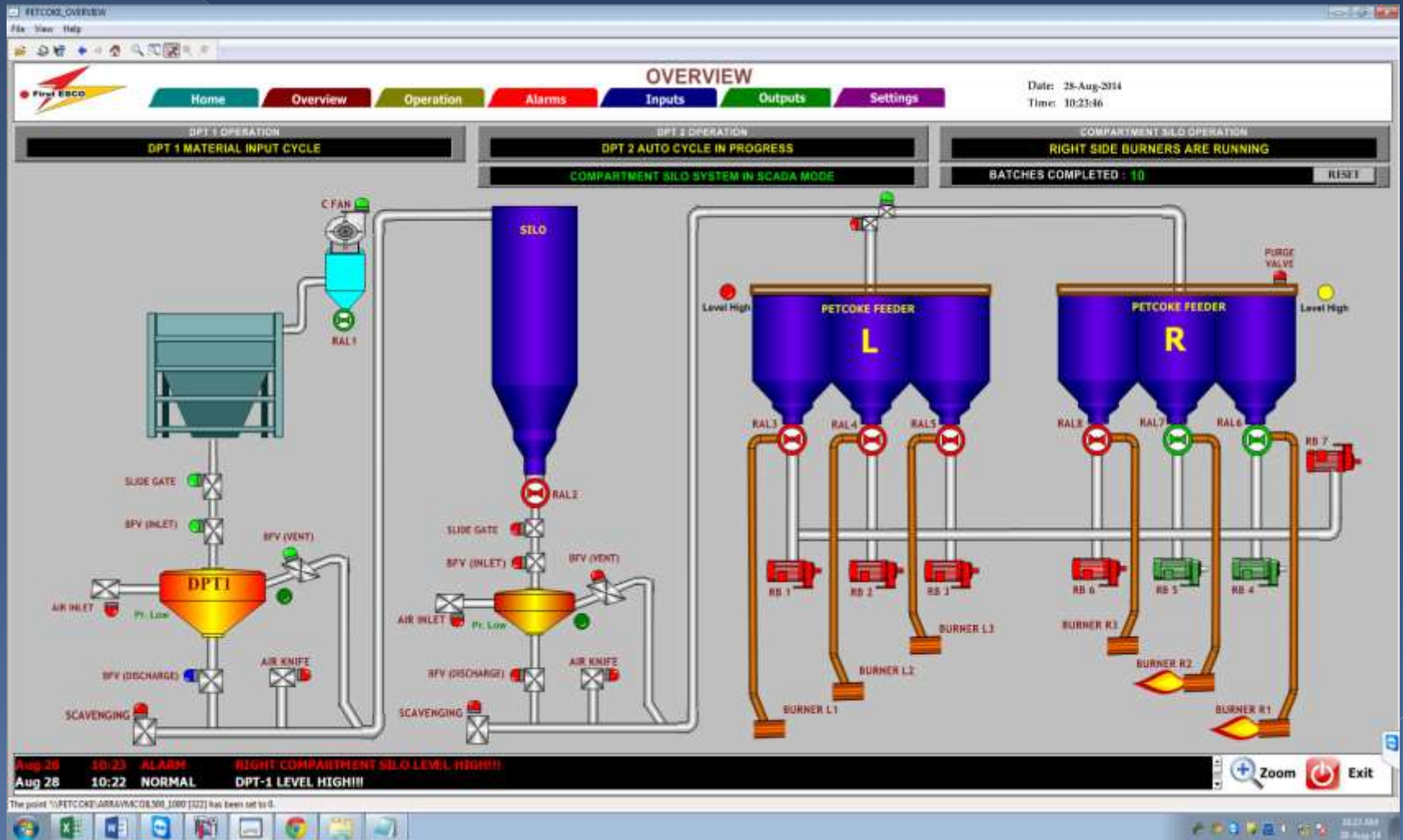
PETCOKE Firing System



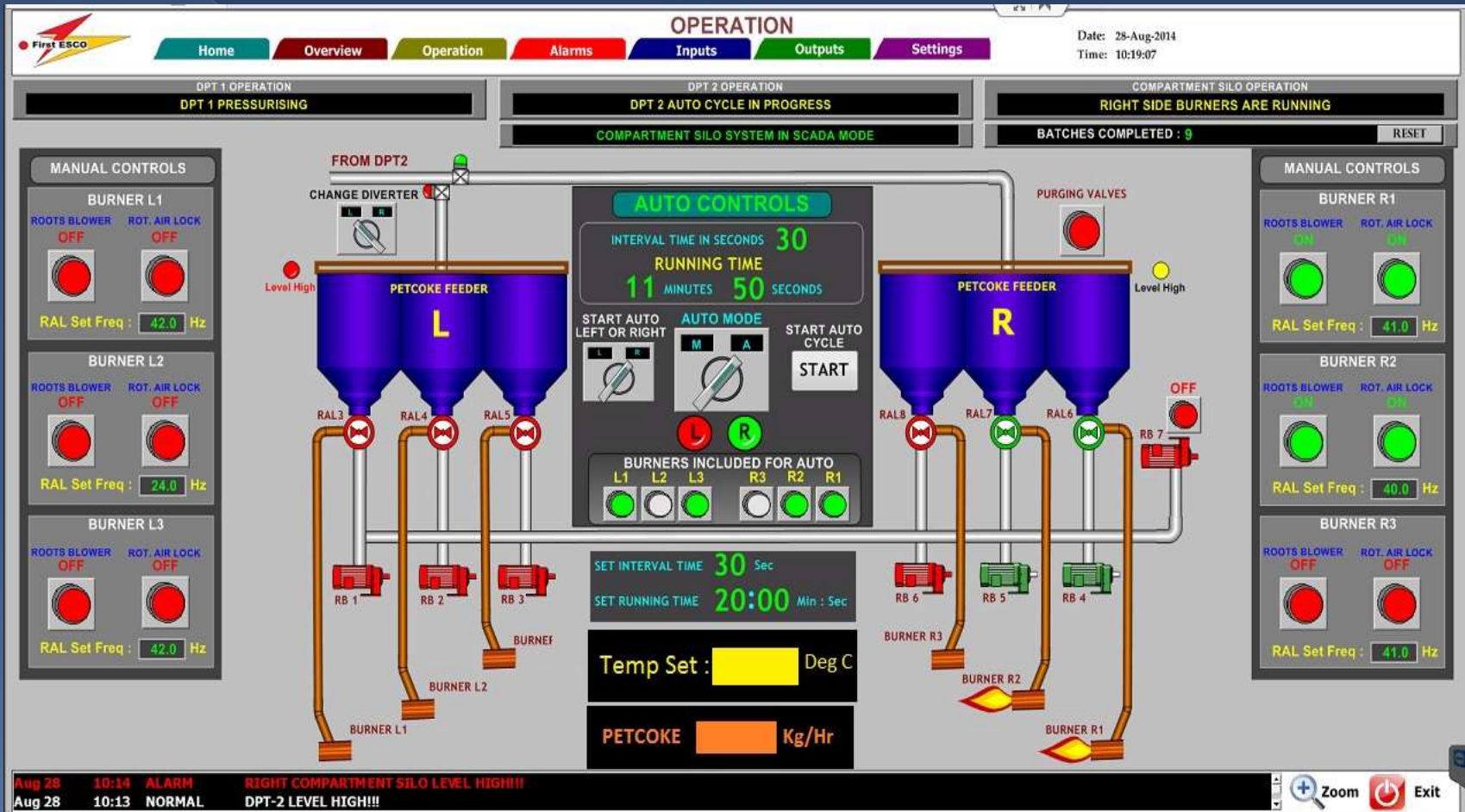
DESIGN, ENGINEERING AND DEVELOPMENT by

FIRST ESCO

Petcoke Firing System – SCADA Pages



Petcoke Firing System – SCADA Pages



WHAT IS PETCOKE

- **Petcoke is an alternative Fuel**
- **It is a residue from Petroleum Refining**
- **It has High Fixed carbon (> 90%)**
- **High calorific value : 8400 kcal/kg**
- **Low cost Fuel**
- **Easy to handle**
- **Possible to replace HFO / LPG/ PROPANE/ NG**

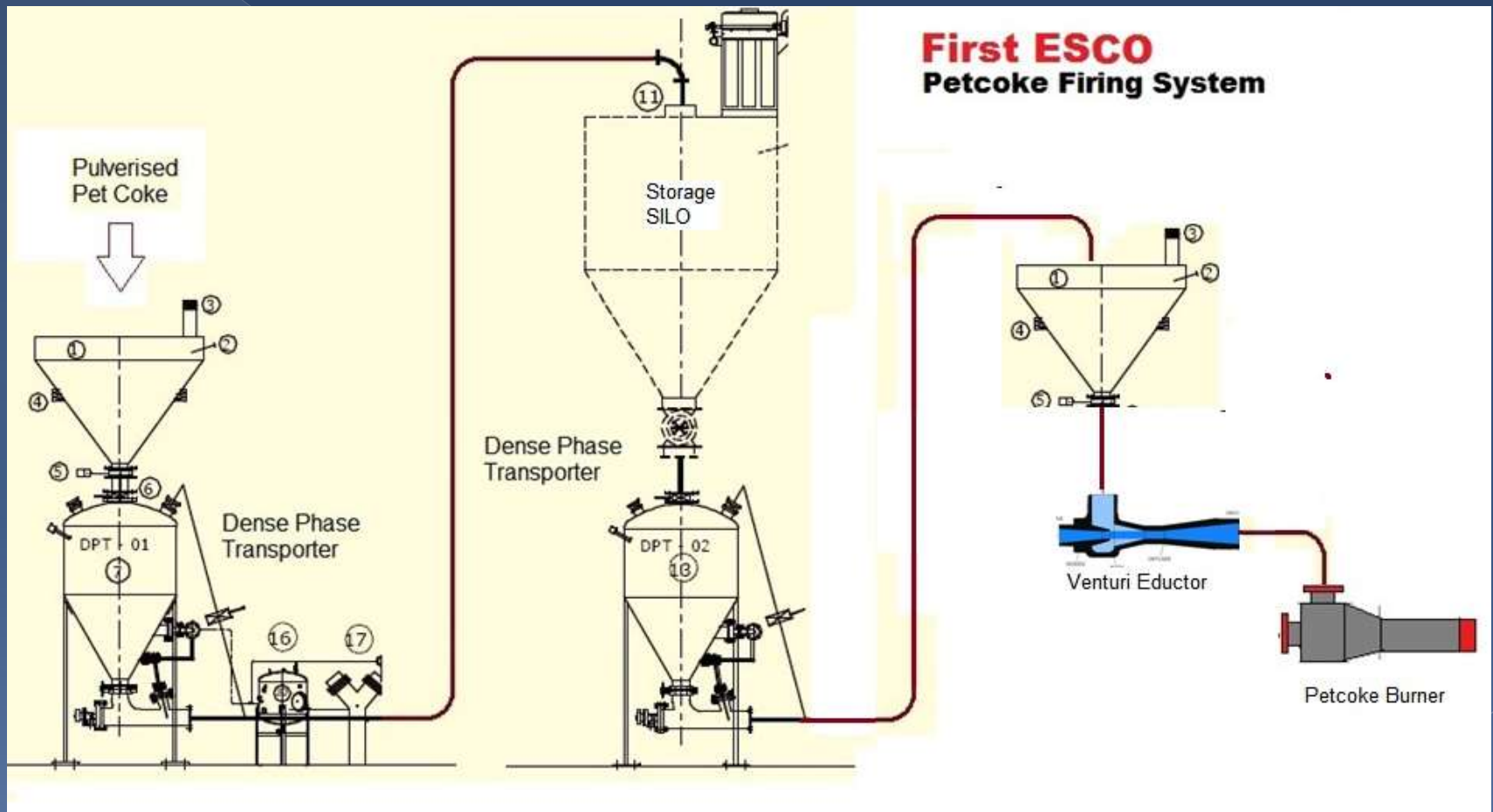
WHY PETCOKE

- Low cost compared with HFO / LPG/ NG
- Reduce Operating cost
- Improve profitability
- Easy to Do fuel switching
- Very quick Payback period (3 to 4 Months)
- Can be implemented in 16 weeks period
- Systems will meet environmental regulations

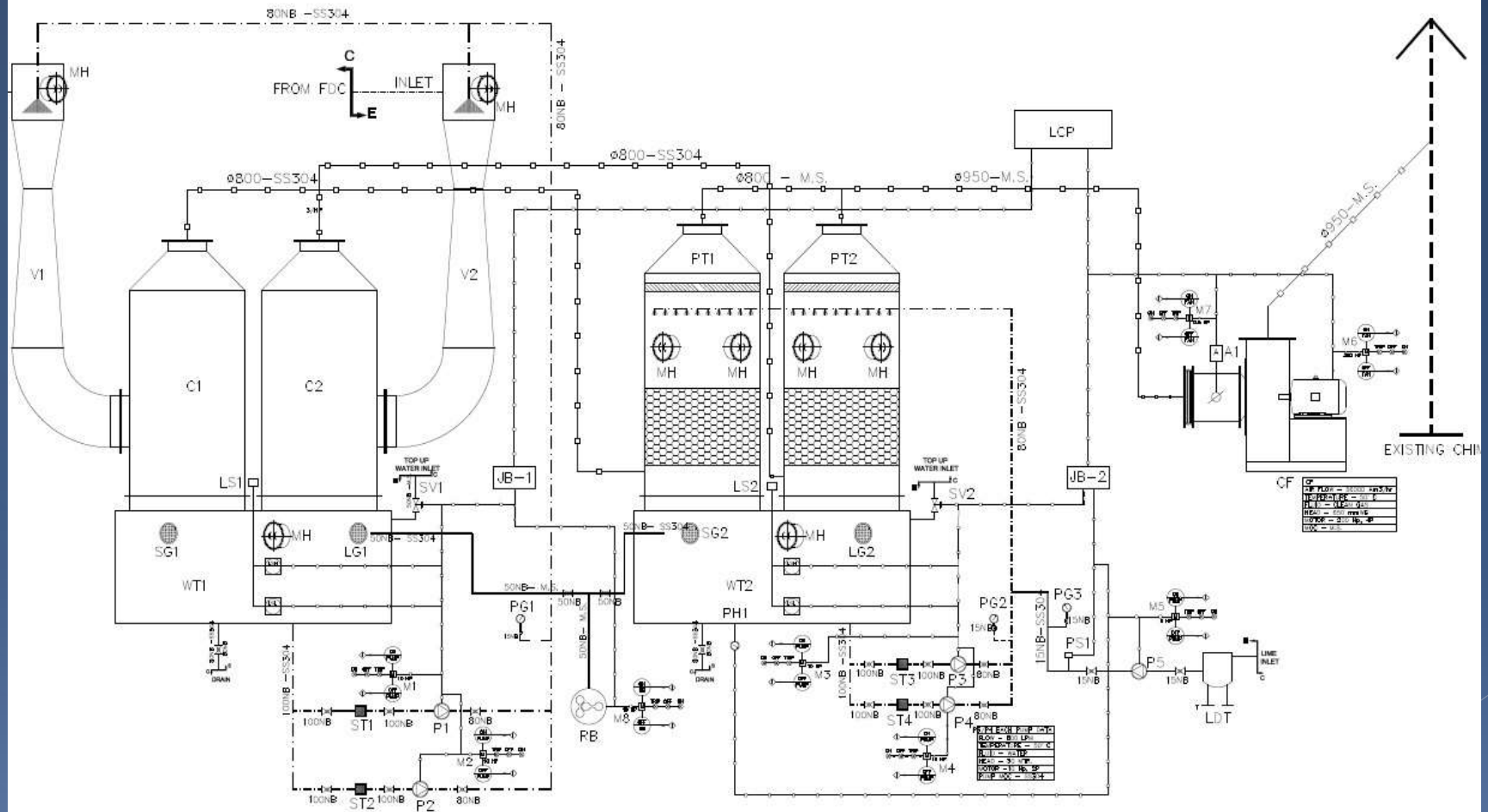
PETCOKE RETROFIT PROJECT SCOPE

- **Petcoke powder unloading system**
- **Petcoke storage silo**
- **Petcoke conveying from Unloading system to Silo**
- **Petcoke conveying from Storage silo to the Feed hopper**
- **Petcoke feeding form Hopper to the Burner**
- **Petcoke fired Burner (Dual fuel)**
- **Wetlime Flue Gas scrubbing system (SO₂ Removal)**
- **Waste Heat recovery Power Generation**

PETCOKE FIRING SYSTEM



WET FLUE GAS SCRUBBING SYSTEM





Petcoke Retrofit Opportunity – Glass Furnace (CASE STUDY)

PRESENT OPERATING CONDITIONS

| | | |
|---------------------------|----------|------------|
| Glass Production Capacity | 350 | Tons/Day |
| Fuel oil requirement | 100 | kg/Ton |
| Total Fuel Requirement | 35 | Ton/Day |
| Fuel required per hour | 1.458 | Tons/Hr |
| Fuel Oil GCV | 9534 | Kcal/Kg |
| Heat requirement per Hour | 13903750 | kcal/hr |
| Heat Energy | 55.17 | MMBTU/Hr |
| Rate of Fuel Oil | 650 | US\$/Ton |
| Cost of fuel/ Hr | 948 | US\$/Hr |
| Cost per MMBTU | 17.18 | US\$/MMBTU |

Petcoke Retrofit Opportunity

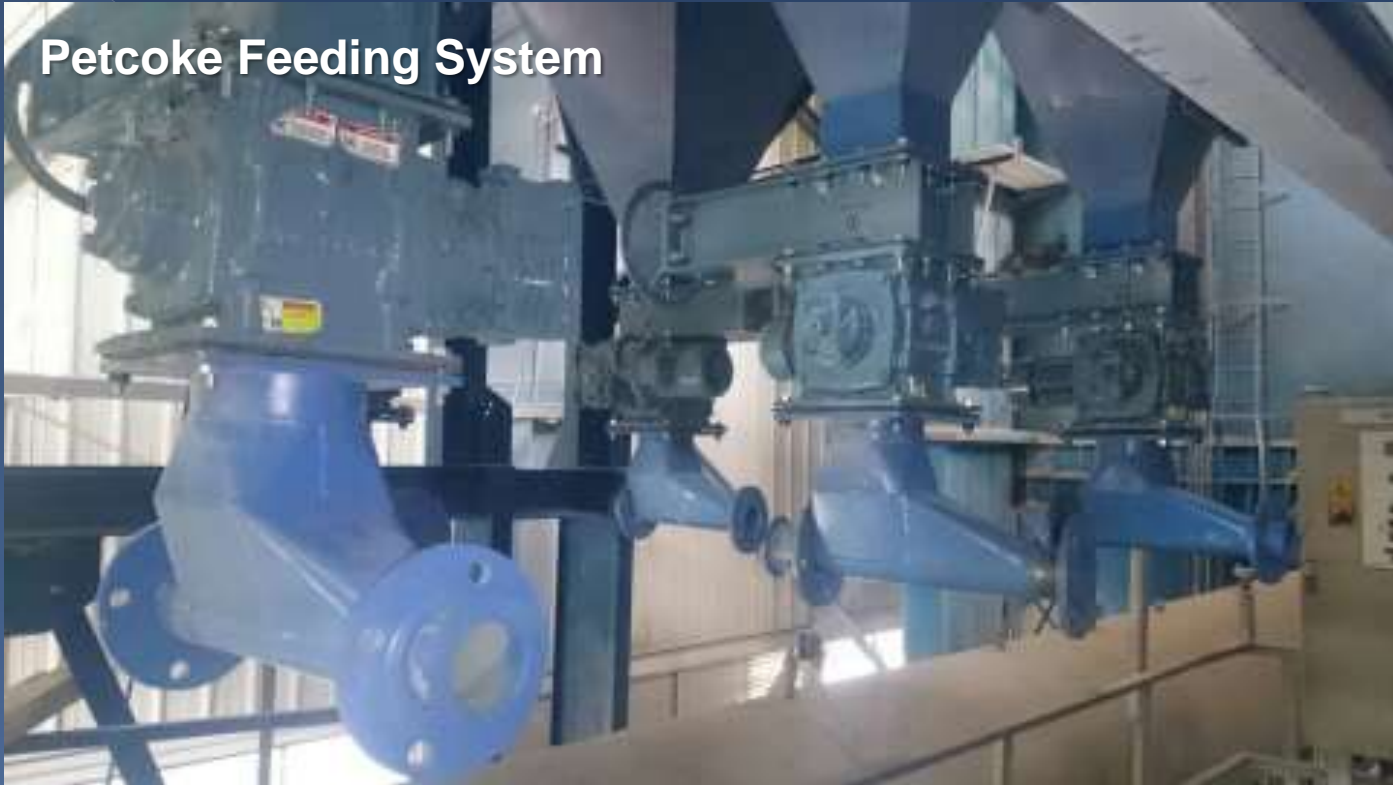
350 Tons/Day Glass Furnace (CASE STUDY)

| Annual savings due to Pet Coke Firing | | |
|---------------------------------------|-----------|-----------|
| Glass Production Capacity | 350 | Tons/Day |
| Heat requirement per Hour | 13903750 | kcal/hr |
| Pet Coke GCV | 8200 | kcal/Kg |
| Pet Coke requirement | 1695.57 | kg/ Hr |
| Rate of Pet Coke per Ton | 280 | US\$/Ton |
| Cost of Pet Coke/ Day | 11394.29 | US\$/Day |
| Fule Oil requirement | 1458 | Kg/Hr |
| Fuel Oil Rate | 650 | US\$/Ton |
| Fuel Oil Cost/Day | 22744.8 | US\$/day |
| Petcoke savings/ Day | 11350.51 | US\$/day |
| Petcoke savings per year | 4,142,935 | US\$/Year |

Roots Blowers



Petcoke Feeding System





Petcoke Unloading system



Dense Phase Transporter



Petcoke Feeding Pipelines

Petcoke Unloading System





Petcoke Feeders



Duel Fuel Burners



What We offer

- PETCOKE HANDLING SYSTEMS
- PETCOKE FIRING SYSTEMS
- FLUE GAS SCRUBBING SYSTEMS
- PULVERISED PETCOKE
- PETCOKE GRINDING SYSTEMS

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