

*Bestwork*

***Coal Gasification Generation System***

## **Bestwork – Coal Gasification Generation System**

**What is Coal Energy ?**

**Coal**



**CGP Coal Specification Require**

**Heat Value ( dry basis ) > 5,000 kcal/kg**  
**Coal Size 25 mm ~ 50 mm**  
**( smaller than 25 mm < 10% )**  
**( bigger than 50 mm < 10% )**  
**Refuse Content < 2%**  
**Volatilization Content ( dry basis ) > 20%**  
**Ash Content ( dry basis ) < 18%**  
**Ash Softening Temp. > 1,250 deg.C**  
**Thermal Stability > 60%**  
**Shatter Strength ( > 25 mm ) > 60%**  
**FSI ( free-swelling index ) < 2**  
**Total Sulfur ( dry basis ) < 1%**

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**Coal Gasification System  
Outlook**

**Coal Gasification System**

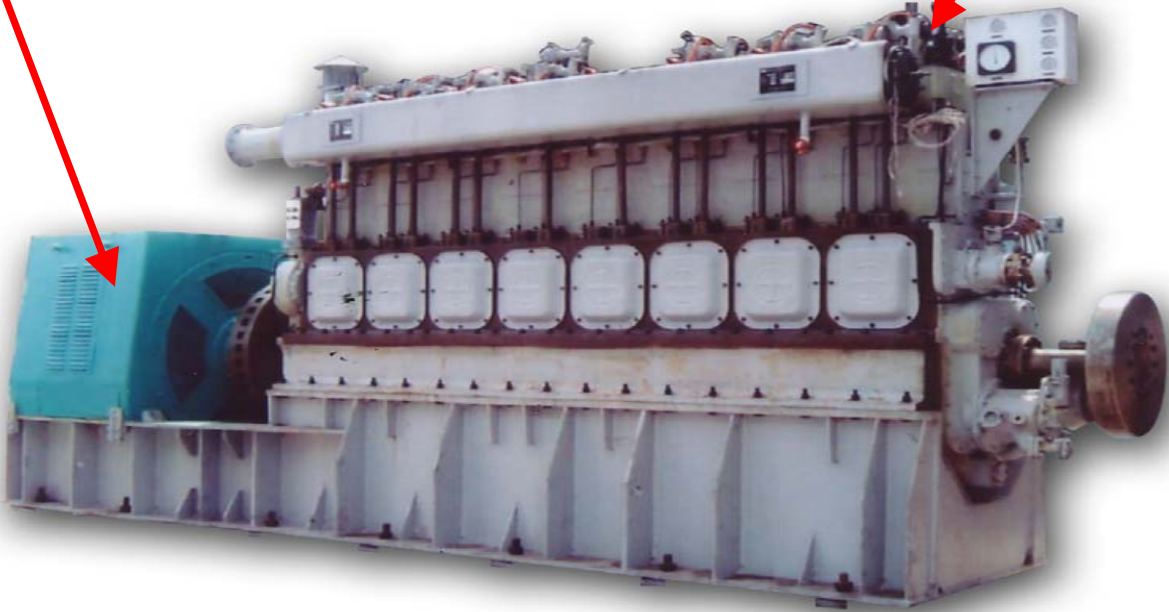


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**Coal Gas Engine Genset  
Outlook**

**Electric Power Generator**

**Coal Gas Engine**



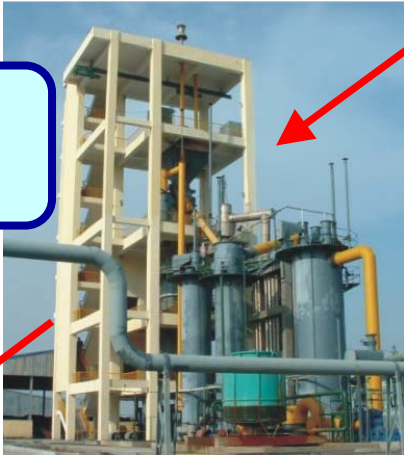
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**How to convert Coal as Electric Power ?**

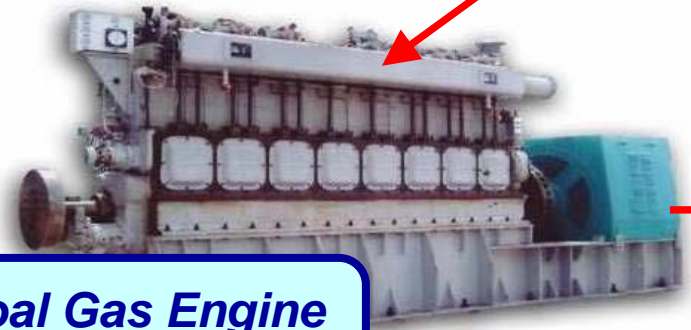


**Coal**

**Coal Gasification System**

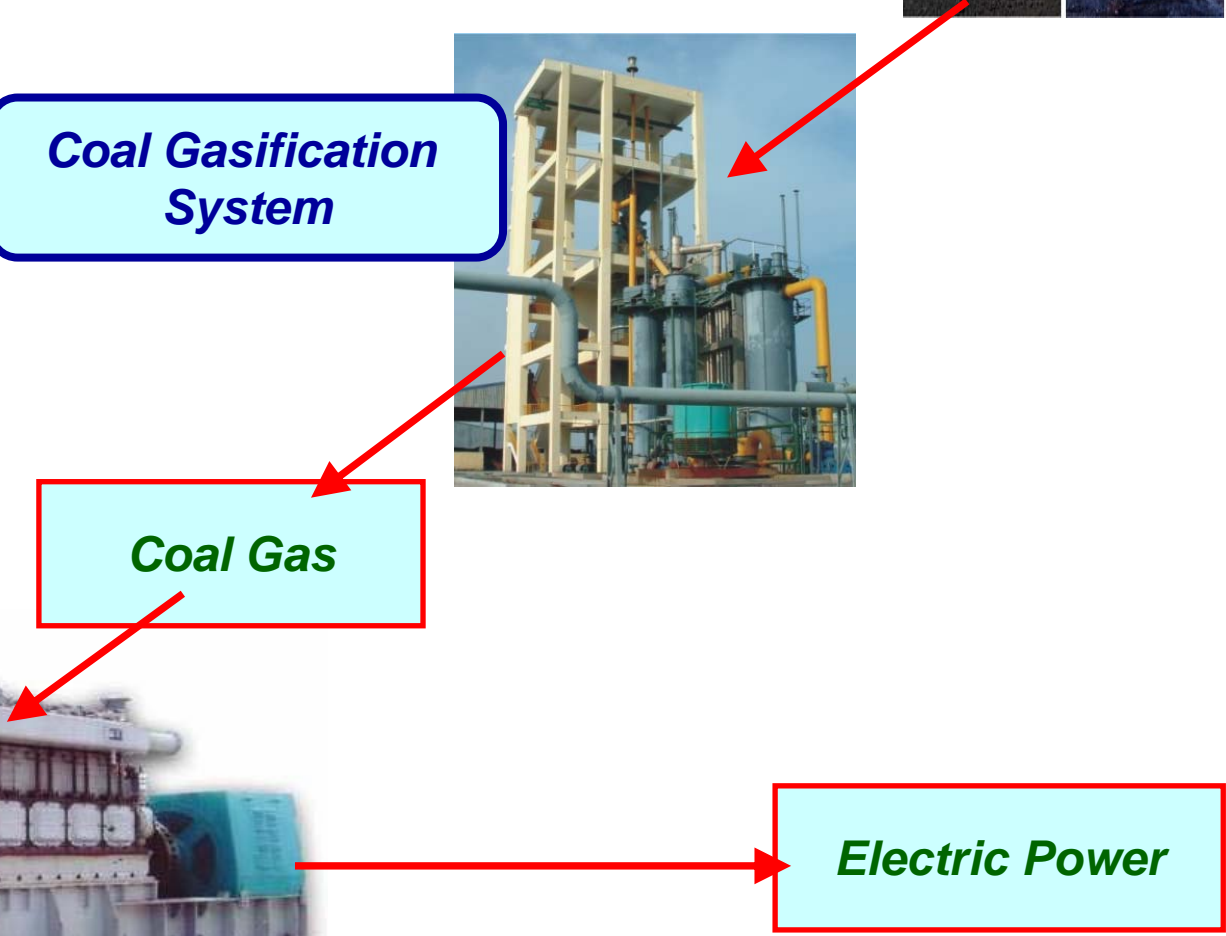


**Coal Gas**



**Coal Gas Engine Genset**

**Electric Power**



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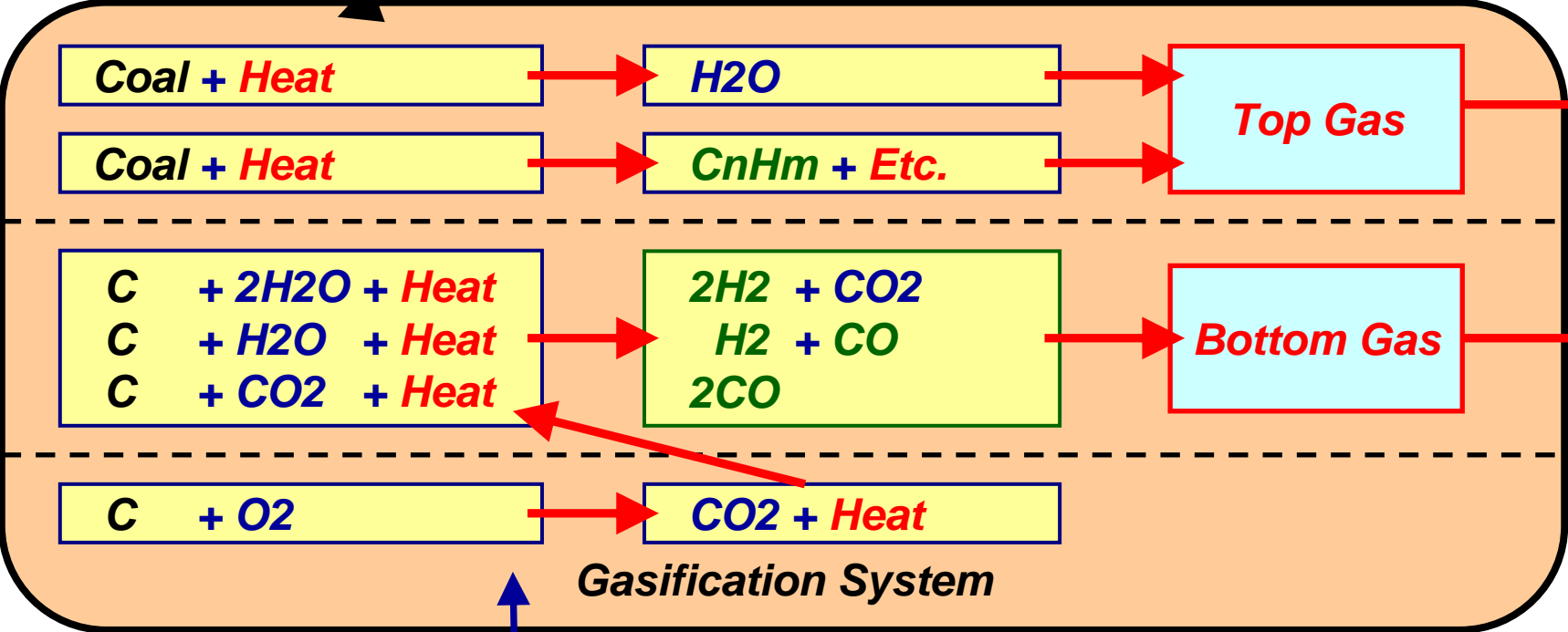
Coal how to convert as Coal Gas ?

Coal



Coal Gas Heat Value ~ 1,350 kcal / Nm<sup>3</sup> ?

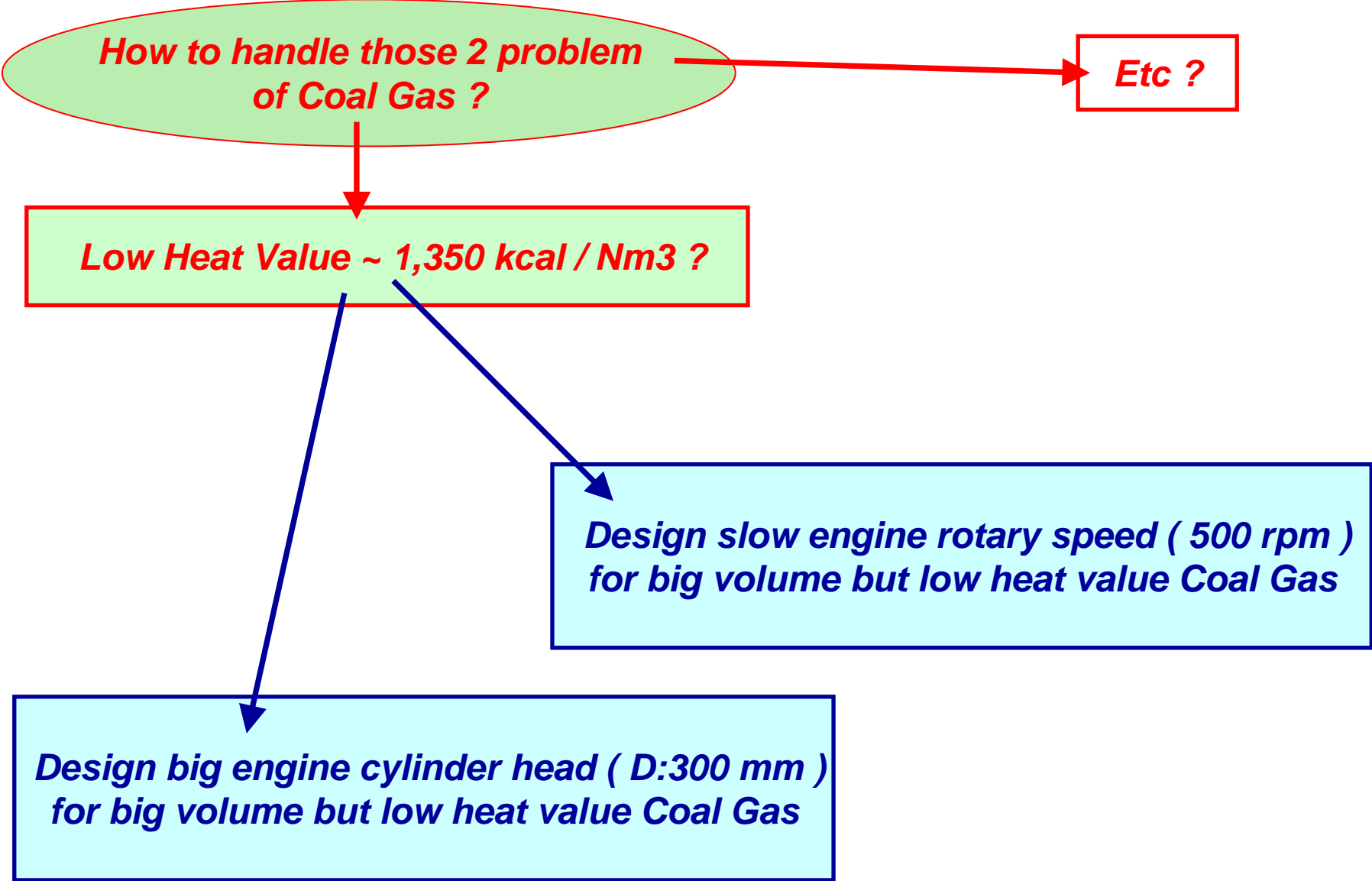
$N_2$  +  $CO_2$  +  $CO$  +  $H_2$  +  $CH_4$  +  $C_nH_m$  +  $O_2$  +  $H_2O$  + Etc ?  
 45.0% 4.5% 27.5% 12.0% 2.0% 0.5% 0.5% 8.0%



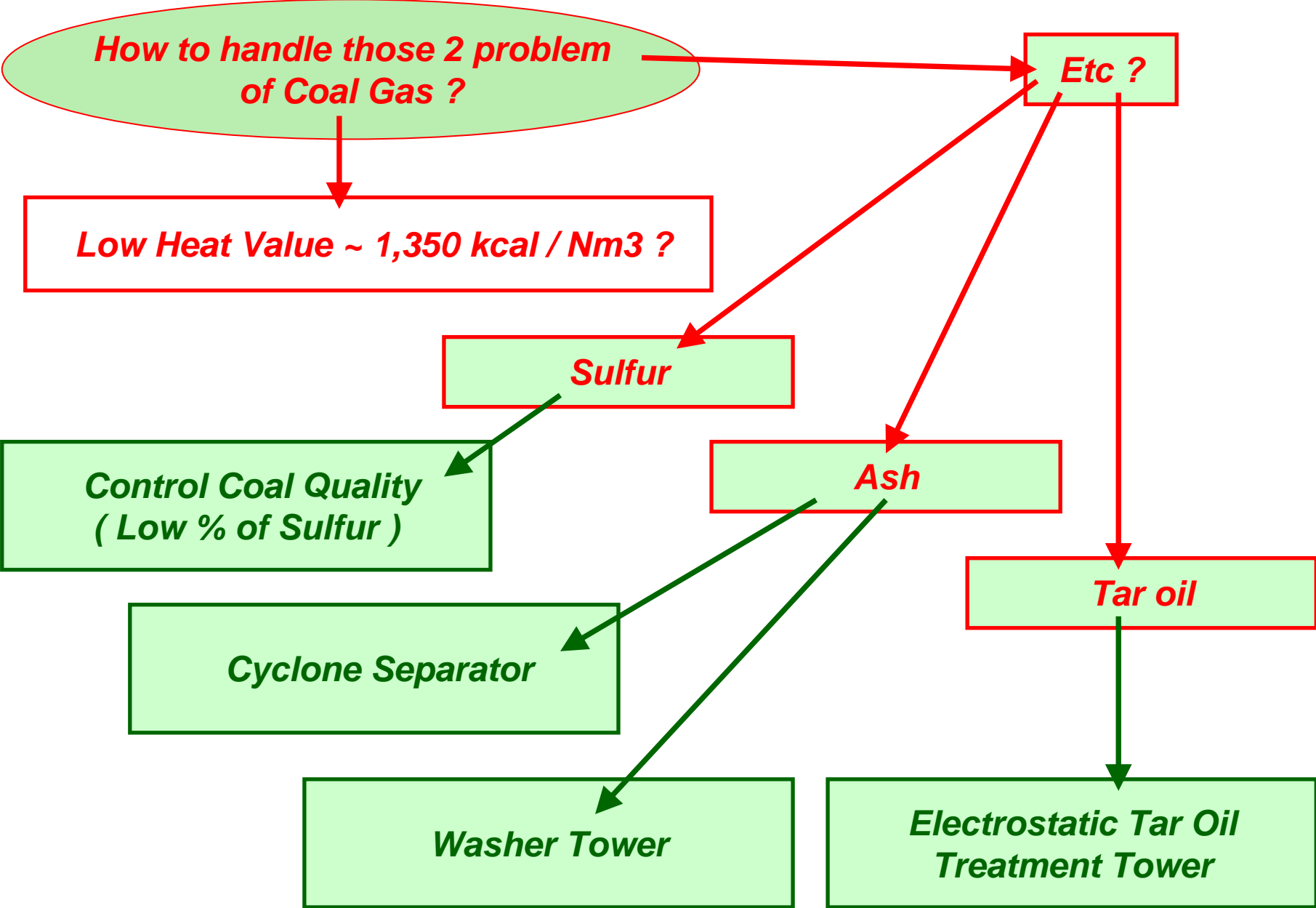
Steam ( H<sub>2</sub>O )

Air ( N<sub>2</sub> + O<sub>2</sub> )

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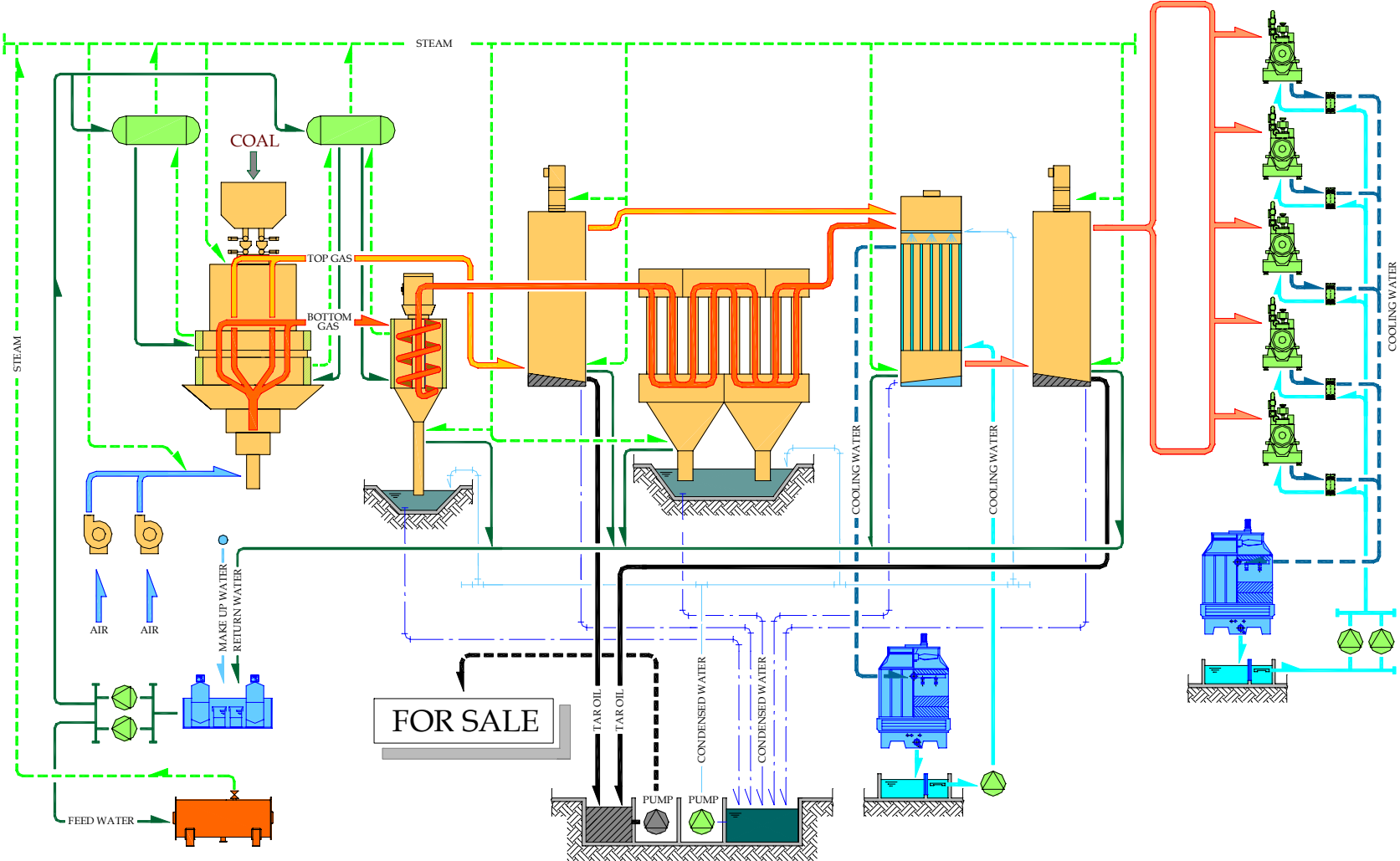


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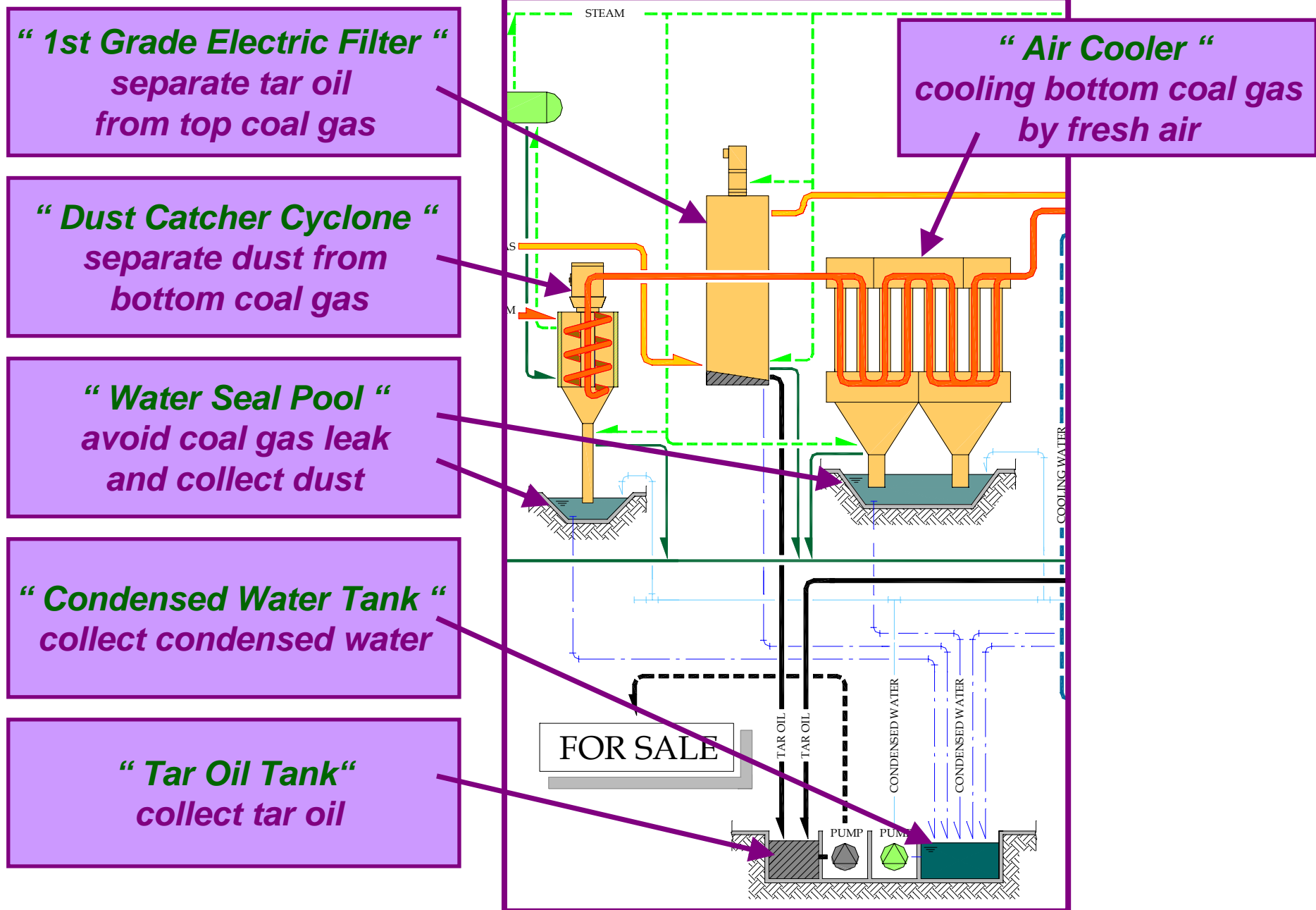
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## Coal Gasification System Flow Diagram

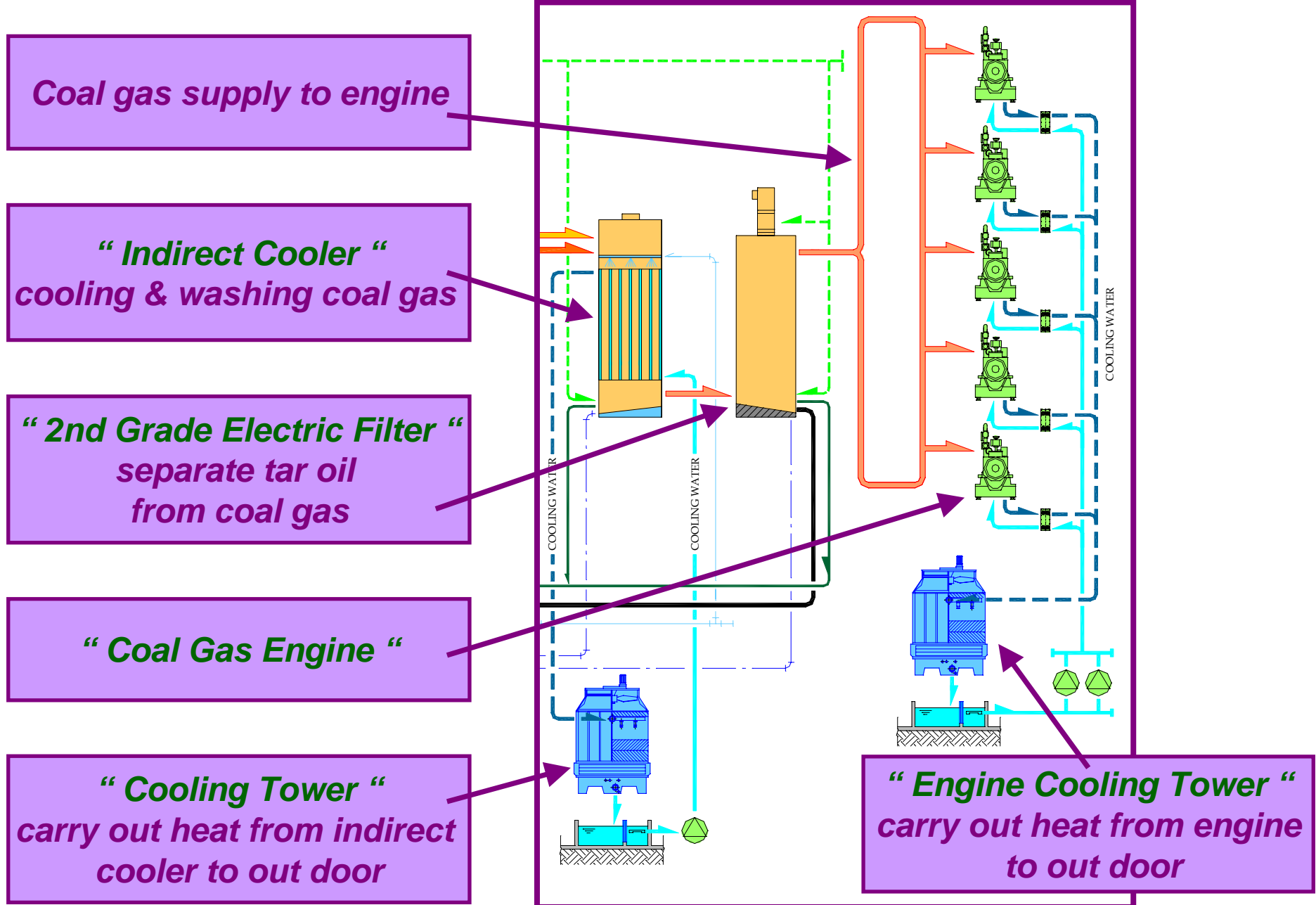




## Bestwork – Coal Gasification Generation System



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Land Space Require

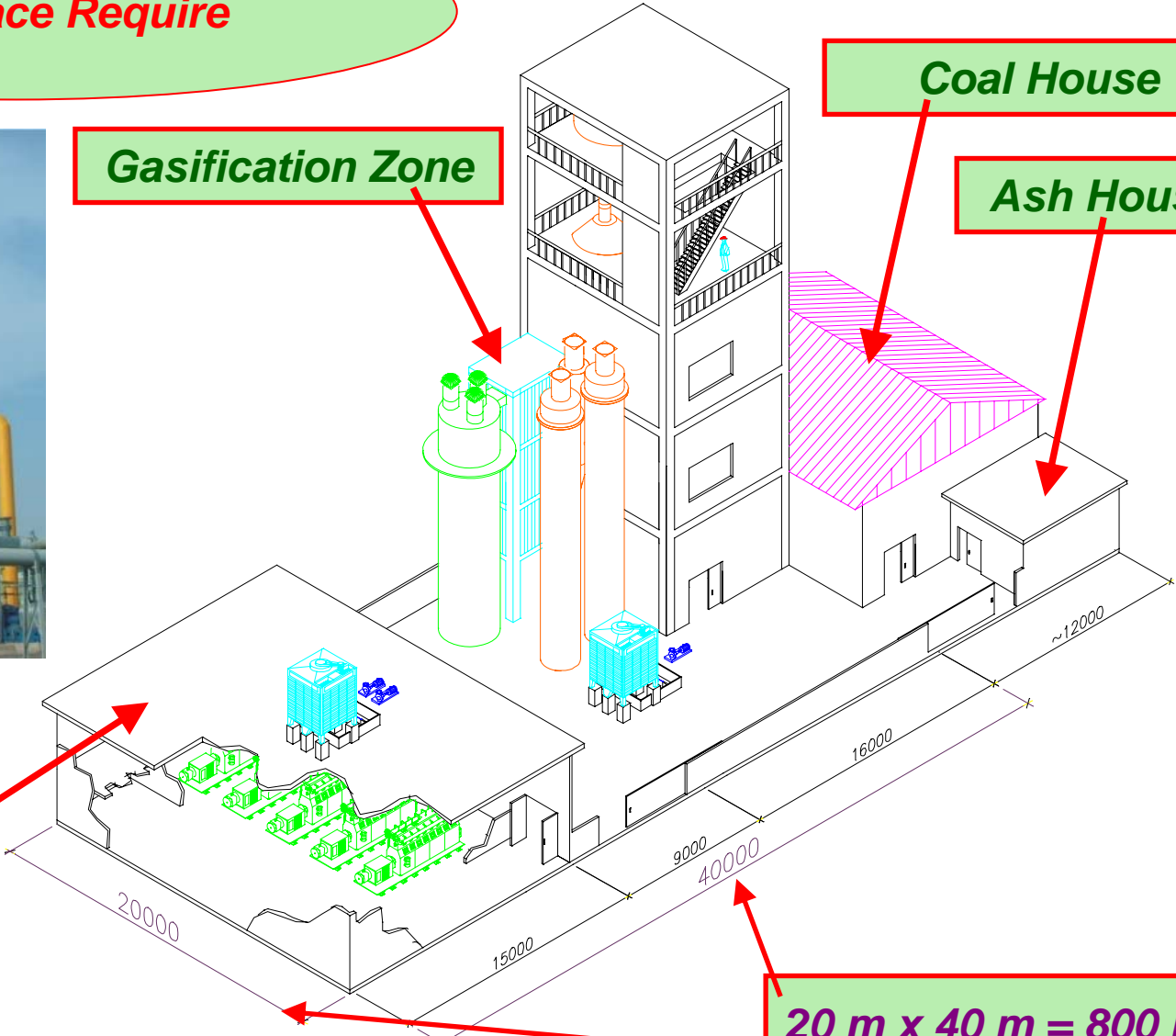
CGP-2000 system



Gasification Zone

Coal House

Ash House



Engine Room

20 m x 40 m = 800 m2

## **Bestwork – Coal Gasification Generation System**

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CGP system own any different design  
with others supplier ?**

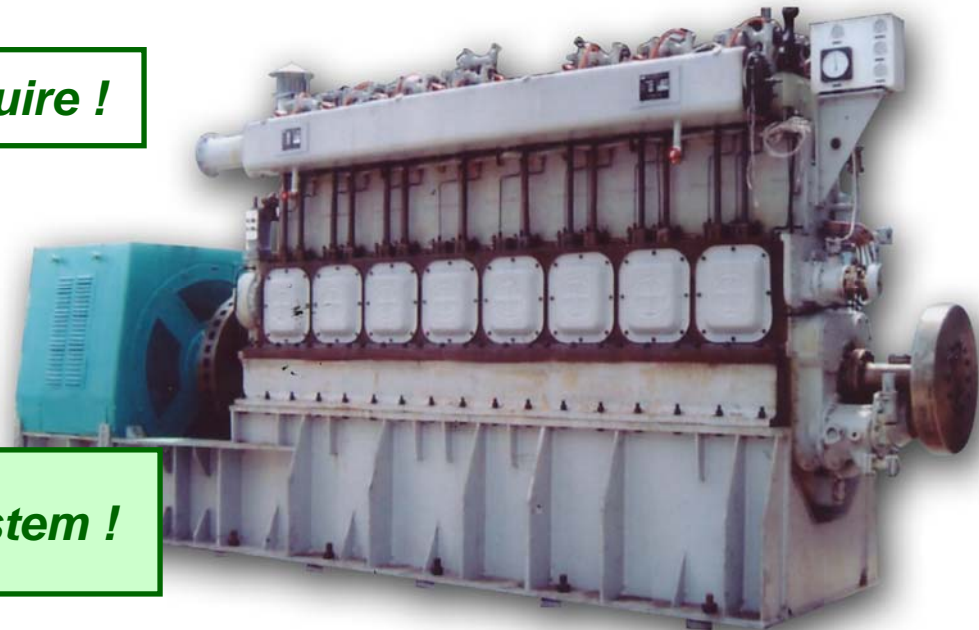
**Big Cylinder, Low Rotary Speed ( 500 rpm ) Coal Gas Engine Design !**

**Reliable continuous operation Coal Gas engine !**

**Light maintenance require !**

**Long operation life !**

**Real Commercial Operation System !**



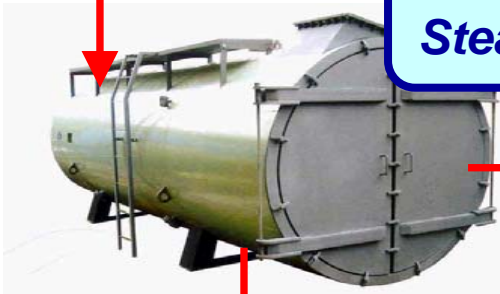
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**Waste Heat Recover from Coal Gas Engine ( CGP-2000 )**

**Coal Gas Engine  
400 ekw x 5 set**



**Exhaust Air  
550 deg.C  
18,000 kg / hr**

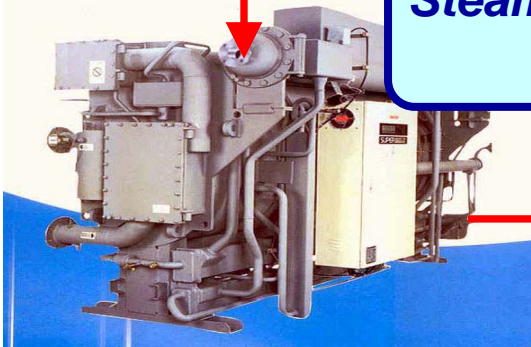


**Waste Heat  
Steam Boiler**

**Steam  
8 bar, 175 deg.C  
3,000 kg /hr**

**Others Heat  
Require**

**Steam Absorption  
Chiller**



**Chilled Water  
750 RT**

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**Thank You !**