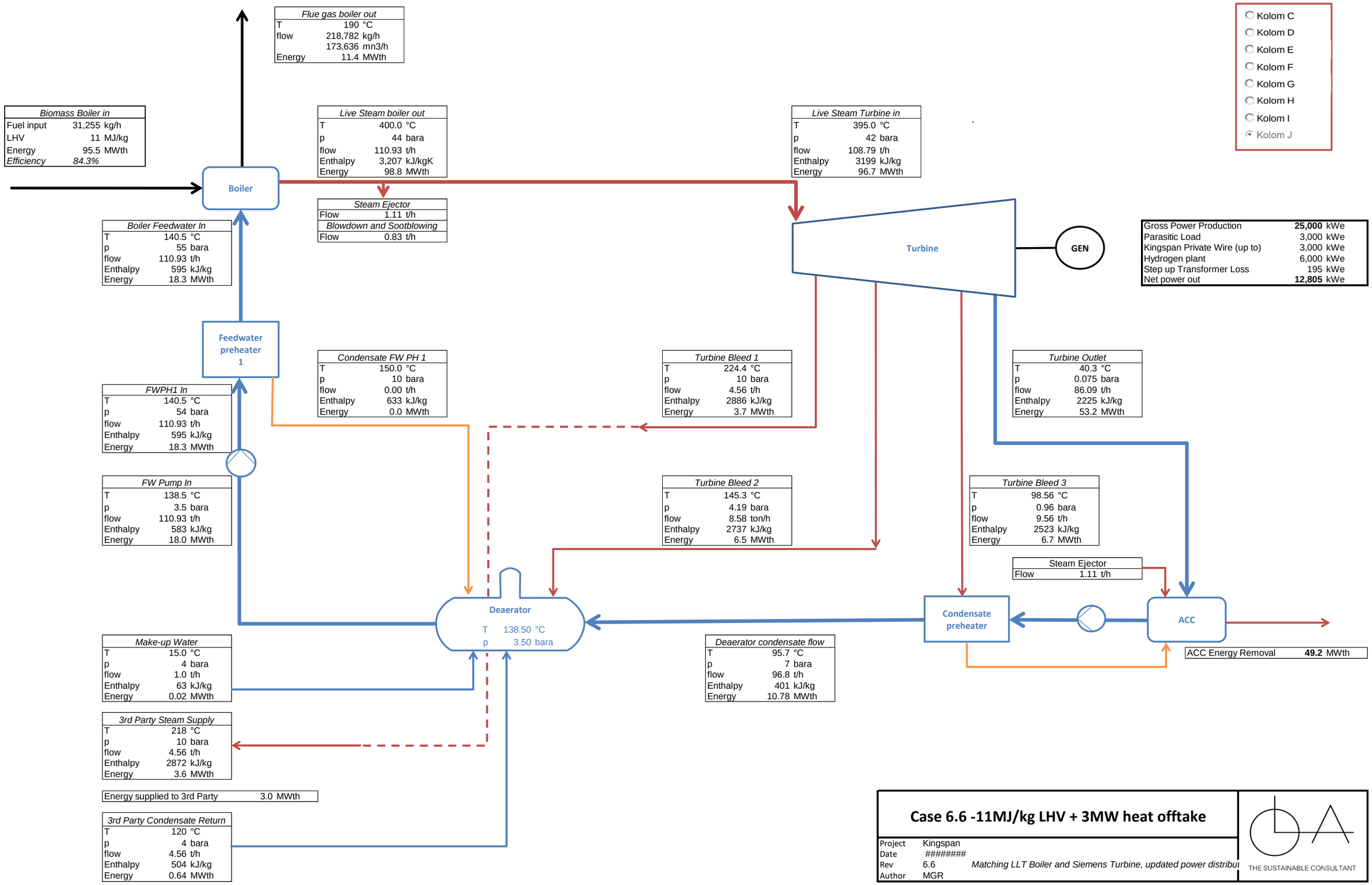
Balance of Plant - PCML Kingspan

Choose Column for Balance of

- Kolom C
- Kolom D
- Kolom E
- Kolom F
- Kolom G
- Kolom H
- Kolom I
- Kolom J



Flue gas boiler out		
T	190	°C
flow	218,782	kg/h
	173,636	mn3/h
Energy	11.4	MWth

Biomass Boiler in		
Fuel input	31,255	kg/h
LHV	11	MJ/kg
Energy	95.5	MWth
Efficiency	*84.3%*	

Live Steam boiler out		
T	400.0	°C
p	44	bara
flow	110.93	t/h
Enthalpy	3,207	kJ/kgK
Energy	98.8	MWth

Steam Ejector		
Flow	1.11	t/h
Blowdown and Sootblowing		
Flow	0.83	t/h

Live Steam Turbine in		
T	395.0	°C
p	42	bara
flow	108.79	t/h
Enthalpy	3199	kJ/kg
Energy	96.7	MWth

Boiler Feedwater In		
T	140.5	°C
p	55	bara
flow	110.93	t/h
Enthalpy	595	kJ/kg
Energy	18.3	MWth

Gross Power Production	**25,000**	kWe
Parasitic Load	3,000	kWe
Kingspan Private Wire (up to)	3,000	kWe
Hydrogen plant	6,000	kWe
Step up Transformer Loss	195	kWe
Net power out	**12,805**	kWe

Condensate FW PH 1		
T	150.0	°C
p	10	bara
flow	0.00	t/h
Enthalpy	633	kJ/kg
Energy	0.0	MWth

Turbine Bleed 1		
T	224.4	°C
p	10	bara
flow	4.56	t/h
Enthalpy	2886	kJ/kg
Energy	3.7	MWth

Turbine Outlet		
T	40.3	°C
p	0.075	bara
flow	86.09	t/h
Enthalpy	2225	kJ/kg
Energy	53.2	MWth

FWPH1 In		
T	140.5	°C
p	54	bara
flow	110.93	t/h
Enthalpy	595	kJ/kg
Energy	18.3	MWth

FW Pump In		
T	138.5	°C
p	3.5	bara
flow	110.93	t/h
Enthalpy	583	kJ/kg
Energy	18.0	MWth

Turbine Bleed 2		
T	145.3	°C
p	4.19	bara
flow	8.58	ton/h
Enthalpy	2737	kJ/kg
Energy	6.5	MWth

Turbine Bleed 3		
T	98.56	°C
p	0.96	bara
flow	9.56	t/h
Enthalpy	2523	kJ/kg
Energy	6.7	MWth

Steam Ejector		
Flow	1.11	t/h

Make-up Water		
T	15.0	°C
p	4	bara
flow	1.0	t/h
Enthalpy	63	kJ/kg
Energy	0.02	MWth

Deaerator condensate flow		
T	95.7	°C
p	7	bara
flow	96.8	t/h
Enthalpy	401	kJ/kg
Energy	10.78	MWth

ACC Energy Removal	**49.2**	MWth

3rd Party Steam Supply		
T	218	°C
p	10	bara
flow	4.56	t/h
Enthalpy	2872	kJ/kg
Energy	3.6	MWth

Energy supplied to 3rd Party	3.0	MWth

3rd Party Condensate Return		
T	120	°C
p	4	bara
flow	4.56	t/h
Enthalpy	504	kJ/kg
Energy	0.64	MWth

Case 6.6 -11MJ/kg LHV + 3MW heat offtake

Project	Kingspan	
Date	########	
Rev	6.6	*Matching LLT Boiler and Siemens Turbine, updated power distribu*
Author	MGR	

THE SUSTAINABLE CONSULTANT