Goal: Want to generate 1000 MW (1×10^6 kJ/s) of Electricity.

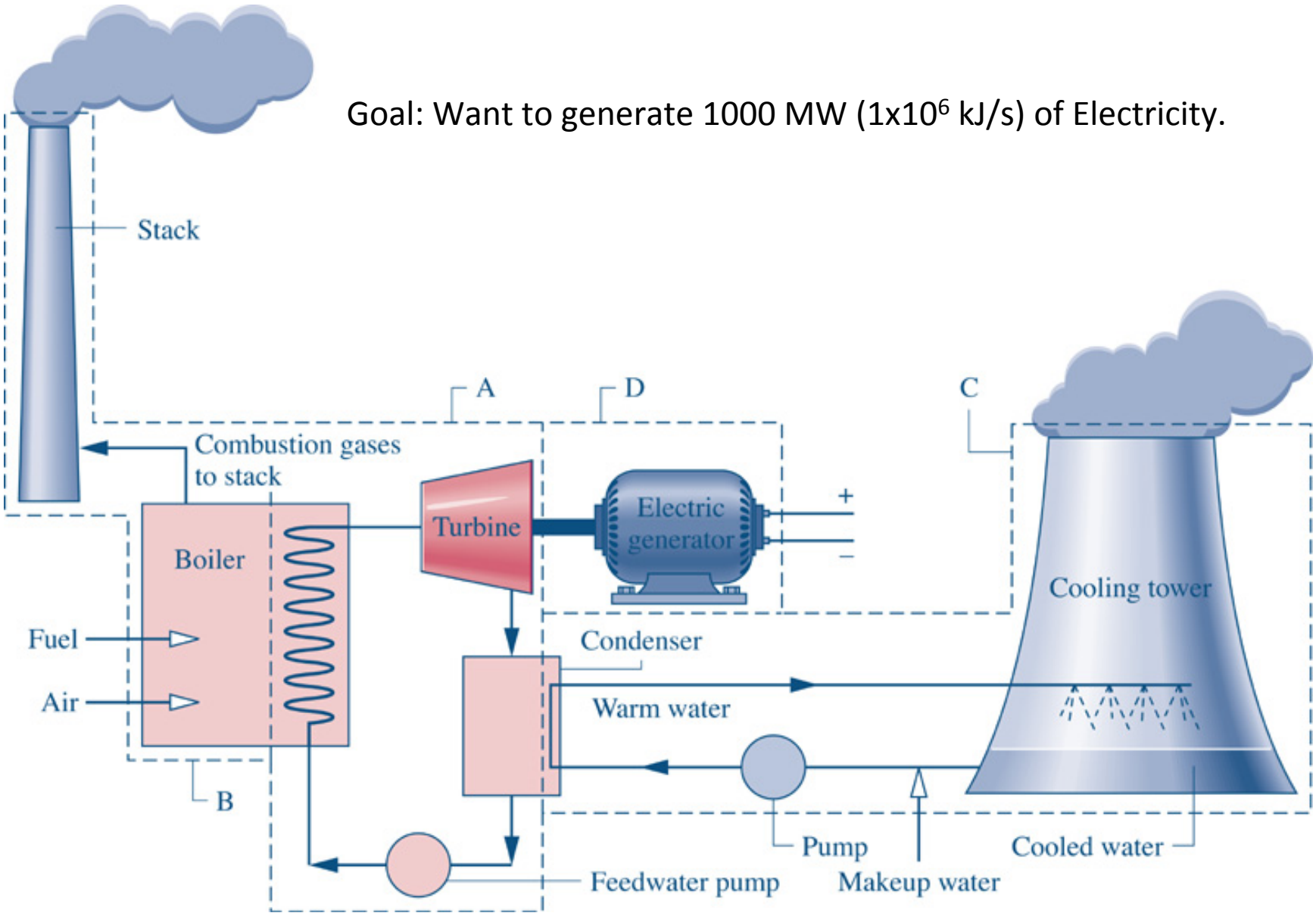
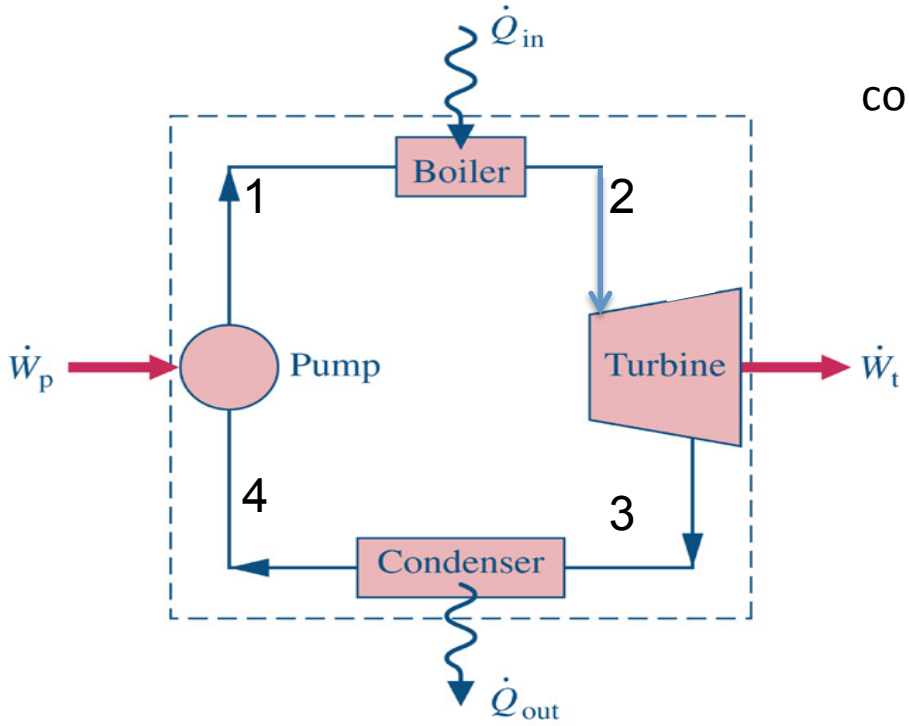


Fig08_01

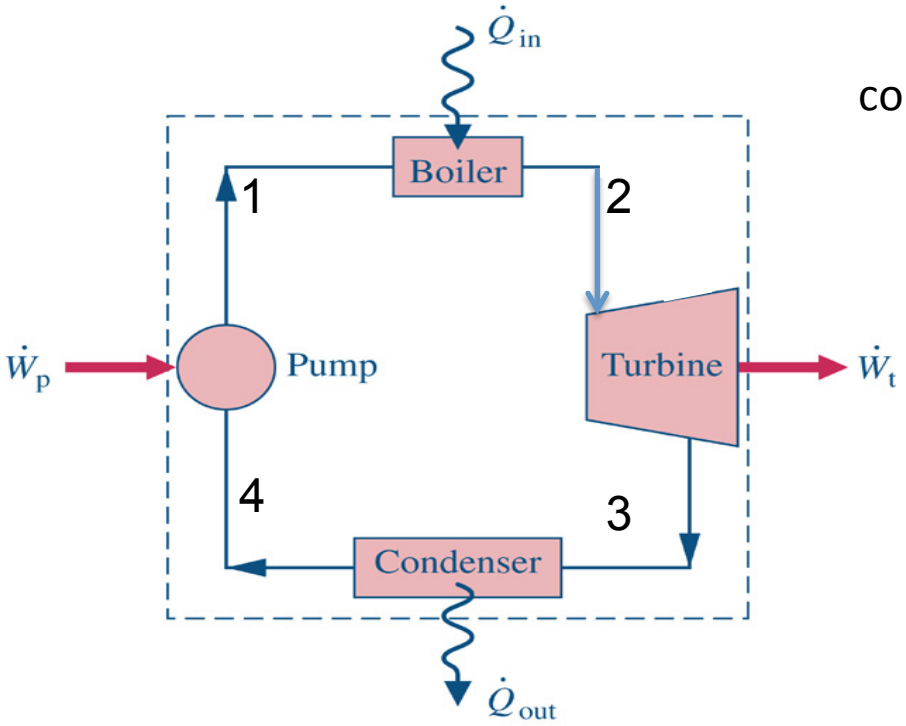


Consider a system similar to what the components that we've just analyzed in class.

Assume ideal conditions initially

Look up state 2 properties

	P (bar)	T (deg. C)	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/(kgK)	x
1							
2	40	478					
3	.6						.92
4							



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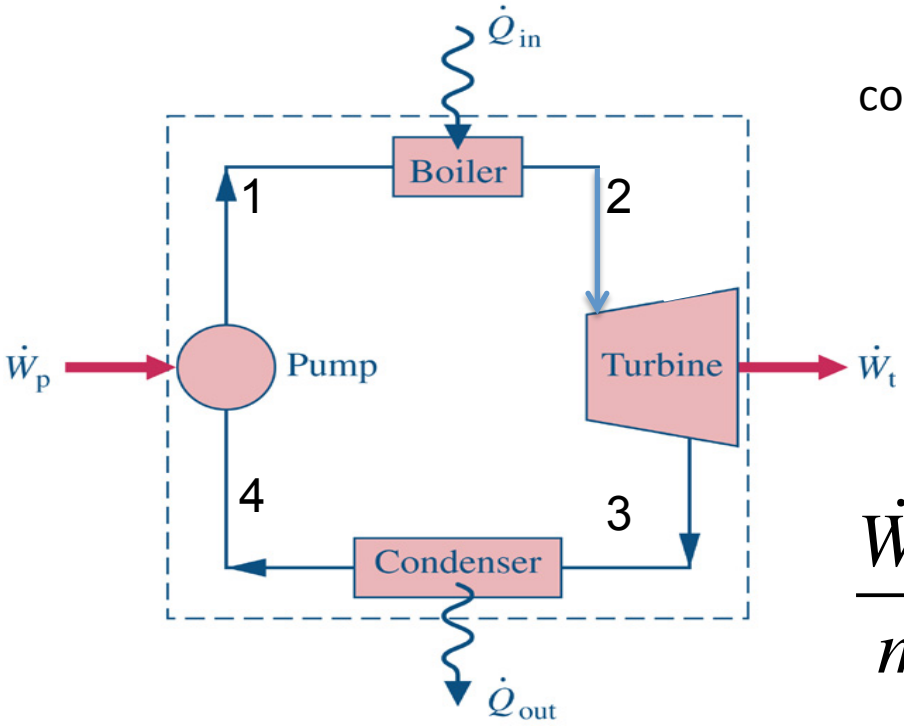
	P (bar)	T (deg. C)	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/(kgK)	x
1							
2	40	478	.083603	3060.16	3394.63	7.0219	SH
3	.6	85.94	2.51352	2319.22	2469.97	7.0211	.92
4	.6	85.94	.0010331	359.79	359.86	1.1453	0



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$$\frac{\dot{W}_P}{\dot{m}} = v(P_1 - P_4) \text{ Work Added}$$

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1							
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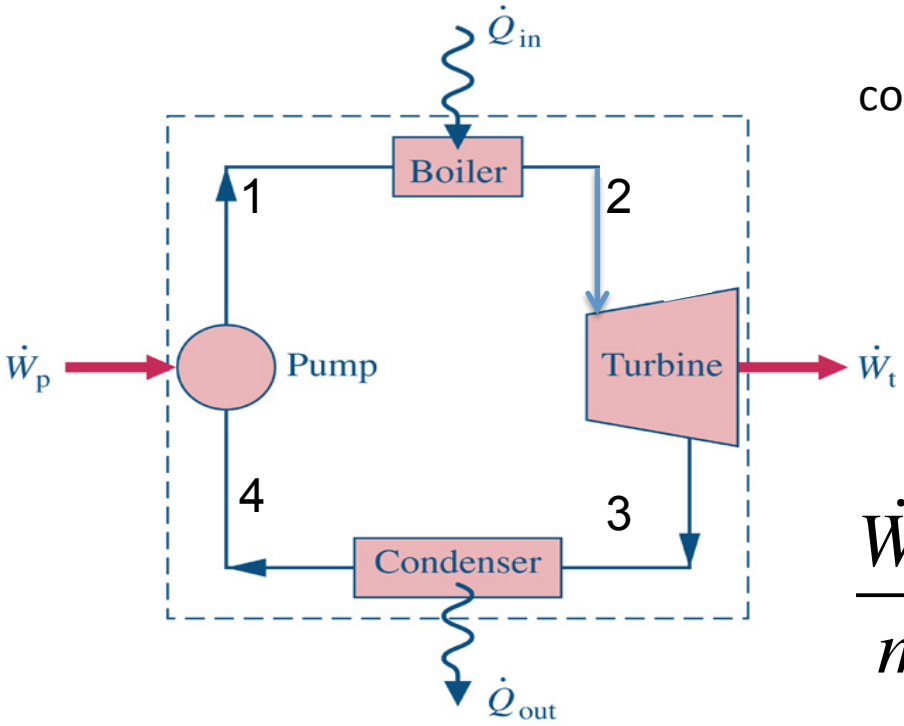

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$$\frac{\dot{W}_P}{\dot{m}} = v(P_1 - P_4) \text{ Work Added}$$

	P (bar)	T (deg. C)	v m^3/kg	u kJ/kg	h kJ/kg	s kJ/(kgK)	x
1	40	86.91	.0010338	355.84	363.93	1.1565	Liq
2	40	478	.083603	3060.16	3394.63	7.0219	SH
3	.6	85.94	2.51352	2319.22	2469.97	7.0211	.92
4	.6	85.94	.0010331	359.79	359.86	1.1453	0