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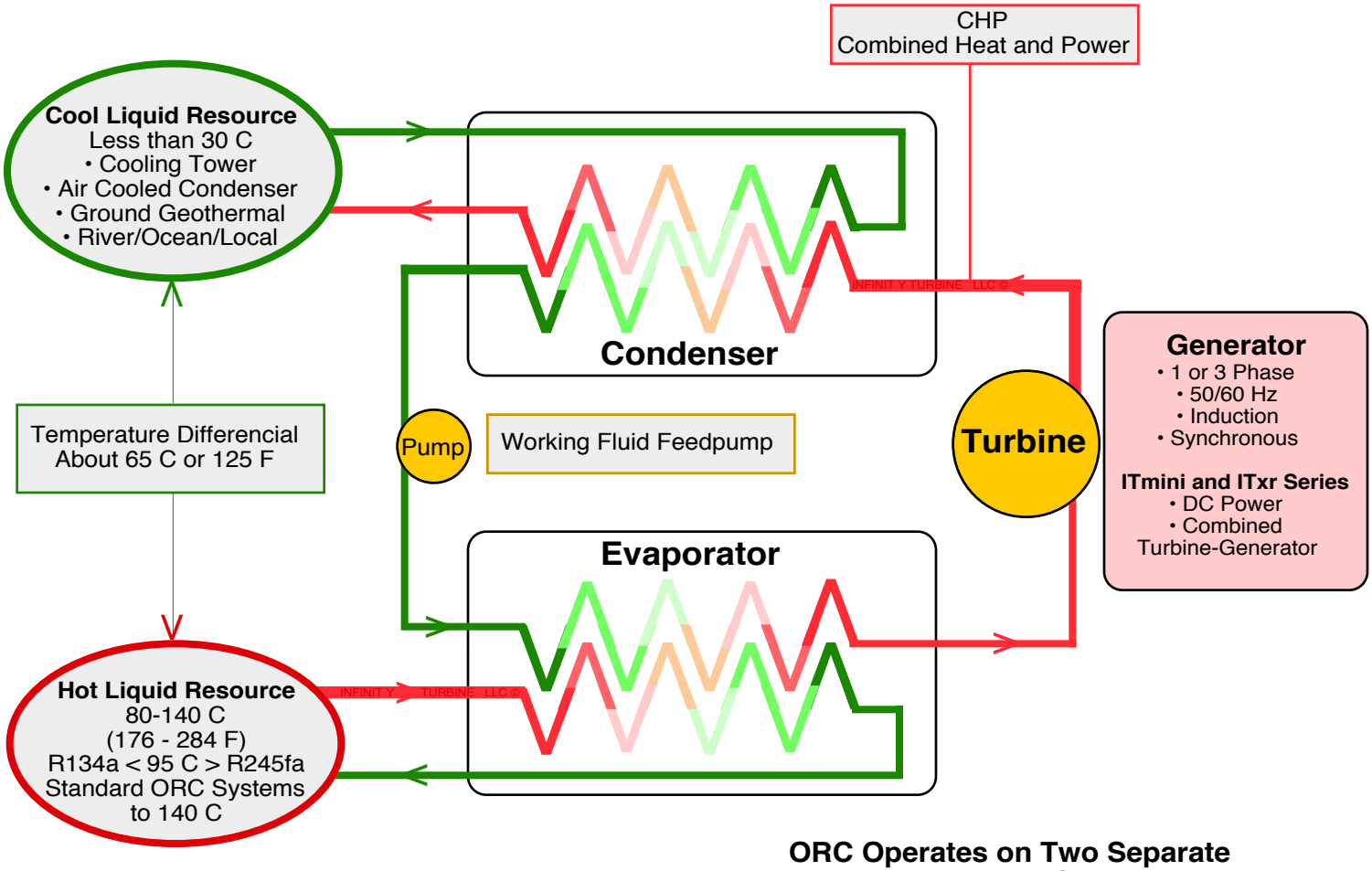
Infinity Turbine ORC System Flow Diagram



ORC Cycle

The hot flow of liquid transfers heat through the evaporator heat exchanger to the refrigerant, that boils then is expanded through the turbine. The cool flow takes the heat out of the refrigerant to condense back to liquid through the condenser heat exchanger. The feedpump then pressurizes that refrigerant back into the evaporator and the cycle repeats.

ORC Operates on Two Separate Flows of Hot and Cool Liquid

Basic (approxmiate) Heat Rate: 40,000 btu/kWe Gross Power Output (rate depends on temperature)

Evaporator (hot flow --> heat --> refrigerant to vapor):

Types of hot liquid: water, oil, steam

Flow:
- 40,000 btu per kWe
- 12 kWthermal per kWe
- 2-3 gpm per kWe
- Max 11 liters/minute per kWe

Heat Necessary:
- 80 C - 140 C
- 176 F - 284 F

Condenser (cool flow --> cool --> refrigerant to liquid):

Types of cool liquid: water, oil, refrigerant

Flow:
- Three times the input heat flow
- 6-9 gpm per kWe
- Maxiumum 34 liters/minute per kWe

Heat Necessary:
- Less than 30 C (86 F)
- Delta T: Needs to be 65 C (125 F) less than input heatflow temperature