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Various Options of Solar Heat and Heat Storage

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Solar Heat Generation and Storage Options

	System	Upper Cycle Storage Temperature Range ;C	Process Heat Temperature Range ;C	Concentration Ratio	Heat Storage Option	Heat Usages
<u>Thermal energy as main product</u>						
	Thermal covers		20 30	1	Sensible Heat	Hot water
	Roof Collectors		30 60	1	Sensible Heat, PCM	Hot water
<u>Thermal energy as by-product</u>						
	Flat PV		30 60	1	Sensible Heat, PCM	Hot water
	CPV		30 110	5 1000	Sensible Heat, PCM	Hot water, Steam (?) Heat Pump(?), Refrigeration
	Trough - Rankine	200 450	60 150	20 60	Sensible Heat, PCM	Hot water, Steam, Heat Pump(?), Refrigeration
	SCR - Rankine	300 600	60 150	50 300	Sensible Heat, PCM	Hot water, Steam, Heat Pump, Refrigeration
	SCR - Brayton	600 900	100 250	300 2000	Sensible Heat, PCM	Hot water, Steam, Heat Pump, Refrigeration
	Dish - Brayton	600 900	100 250	500 4000	Sensible Heat, PCM	Hot water, Steam, Heat Pump, Refrigeration
<u>Other (unlikely) possibilities</u>						
	Trough - Steam Generation		100 250	20 60	Sensible Heat, PCM	Hot water, Steam, Heat Pump, Refrigeration
	SCR - Steam Generation		100 300	50 300	Sensible Heat, PCM	Hot water, Steam, Heat Pump, Refrigeration
<u>Assumptions (to be challenged?)</u>						
1	Electricity production is preferred over heat production					
2	Heat and Power co-generation is recommended whenever possible					