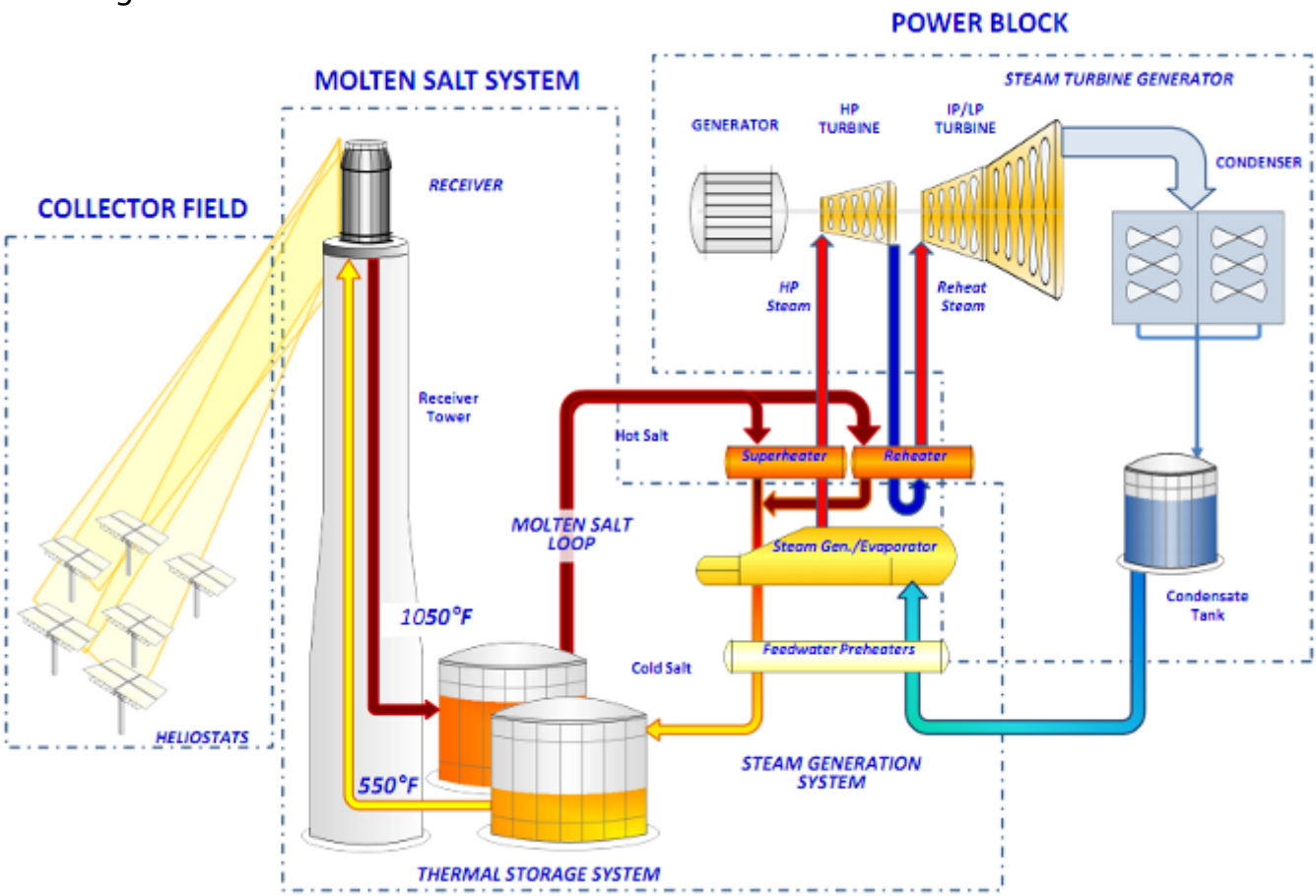
Molten Salt Solar Reactor Approved by California

Curious Cat Science and Engineering Blog

California has approved a molten salt solar reactor [1] project. The plan is for a 150-megawatt solar power tower project. From the press release: the “Solar Energy Project has the ability to collect and store enough thermal energy each morning to operate at full power all afternoon and for up to 8 hours after sunset. The game-changing technology featuring inherent energy storage affords utilities with a generator that performs with the reliability and dispatchability of a conventional power generator without harmful emissions that are associated with burning coal, natural gas and oil.”



[2]
molten salt solar system diagram

The heliostats focus concentrated sunlight on a receiver which sits on top of the tower. Within the receiver, the concentrated sunlight heats molten salt to over 1000 degrees Fahrenheit. The heated molten salt then flows into a thermal storage tank where it is stored, maintaining 98% thermal efficiency, and eventually pumped to a steam generator. The steam drives a standard turbine to generate electricity. This process, also known as the “Rankine cycle” is similar to a standard coal-fired power plant, except it is fueled by clean and free solar energy.

This is another green energy project that has a great deal of potential. There is a great need for such new energy sources and hopefully quite a few of these projects will let us enjoy a greener and more sustainable way to meet our future energy needs.

For those interested in the business aspects of this energy project: United Technologies provided SolarReserve with an exclusive worldwide license to develop projects using the proprietary molten salt power tower technology, which has been in development for nearly three decades.

Related: Solar Thermal in Desert, to Beat Coal by 2020 [3] – Wind Power Capacity Up 170% Worldwide from 2005-2009 [4] – Cost Efficient Solar Dish by Students [5] – Solar Tower Power Generation [6]

SOURCE [7]

Source URL (retrieved on *04/26/2015 - 2:09pm*):
http://www.ecnmag.com/news/2010/12/molten-salt-solar-reactor-approved-california?qt-video_of_the_day=0

Links:
[1] http://solarreserve.com/pressReleases/SolarReserveRiceSolarCECApprovalPressRelease121510.pdf
[2] http://www.solar-reserve.com/technology/ProcessFlowDiagram.pdf
[3] http://engineering.curiouscatblog.net/2008/05/26/solar-thermal-in-desert-to-beat-coal-by-2020/
[4] http://engineering.curiouscatblog.net/2010/07/15/wind-power-capacity-up-170-worldwide-from-2005-2009/
[5] http://engineering.curiouscatblog.net/2008/06/23/cost-efficient-solar-dish-by-students/
[6] http://engineering.curiouscatblog.net/2006/08/03/solar-tower-power-generation/
[7] http://engineering.curiouscatblog.net/2010/12/18/molten-salt-solar-reactor-approved-by-california/