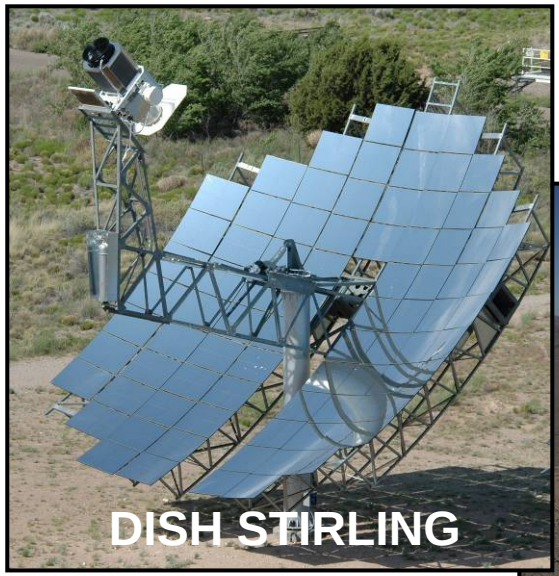
SITING UTILITY-SCALE SOLAR



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Brown to Green, Dec 11, 2008

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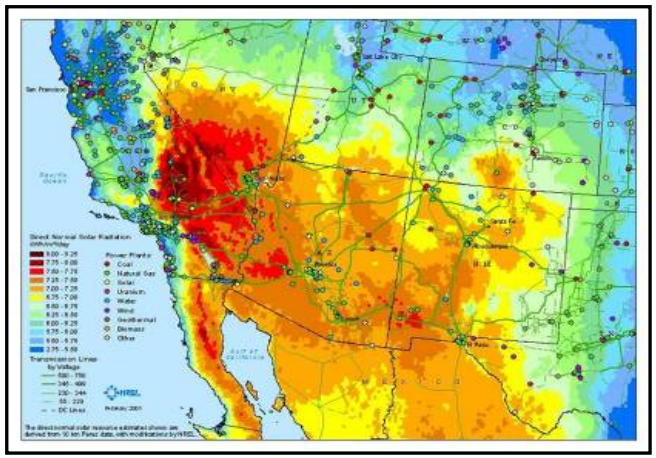
What can CSP do?

- convert the sun's energy to heat and use that heat to power and engine/generator.
- are utility-scale solar power (> 100 MW).
- comprise three generic technologies: parabolic trough, power tower, and dish Stirling.
- have more than 140 plant-years of commercial operation (10 plants, 400MW) in the Southwest.
- can provide dispatchable power for peaking and intermediate loads (with storage or hybridization).
- mostly utilize commodity items for manufacture (glass, steel, aluminum, piping, controls, etc.).

Project Development

- What is the solar energy resource?
- Are there state incentive programs (RPS, tax breaks)?
- Are the local utilities engaged and supportive?
- Do the utilities have RFQs on the street?
- Is the land available and at what cost (public or priv)?
- Is the land relatively level?
- Is a transmission interconnect available? How far?
- Is sufficient transmission capacity available?
- Is water available for the cooling? (troughs and towers)

DNI Solar Resource -- Southwest



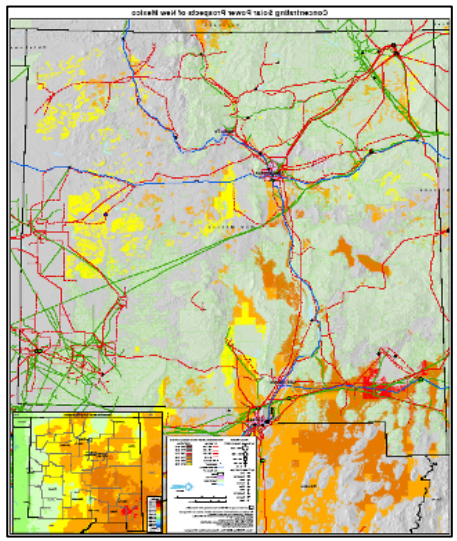
State	Land Area (mi^2)	Solar Capacity (MW)	Solar Generation Capacity GWh
AZ	19,279	2,467,663	5,836,517
CA	6,853	877,204	2,074,763
CO	2,124	271,903	643,105
NV	5,589	715,438	1,692,154
NM	15,156	1,939,970	4,588,417
TX	1,162	148,729	351,774
UT	3,564	456,147	1,078,879
Total	53,727	6,877,055	16,265,611

Filters applied:

- Direct-normal solar resource.
- Sites > 6.75 kwh/m^2/day.
- Exclude environmentally sensitive lands, major urban areas, etc.
- Remove land with slope > 1%.
- Only contiguous areas > 10 km^2

U.S. Capacity is 1,000GW

Annual generation of 4,000,000 GWh



New Mexico:

potential for 1939 GW of CSP

4,588,417 GWhr of CSP generation

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Systems Issues

- Cleared land and roads required
- Relatively level land is desirable (~1 to 3% slope)
- Restricted access (BLM policy of dual use)
- Area required about 5 acres/ Megawatt (differs slightly with technology and greatly with storage)
- Working fluids and materials
  - Synthetic Oils (diphenyl biphenyl oxides)
  - Power block lubrication oils
  - Dish systems glycol in cooling system
  - Molten Salt (sodium potassium nitrates) storage (fertilizer)
  - PV materials (eol materials issues)
- Water usage is similar to a pulverized coal plant (troughs and towers)

Industry Concerns

- State incentive programs often complex
- Uncooperative utilities
- Transmission and interconnect availability in SW
- Coordination of land use and transmission studies for federal land (RETI, RETA, WGA)
- BLM lands for suitable for projects
  - More than 200 applications for solar in SW
  - 9 applications in NM
  - Pre-screening to reduce speculation
  - Streamline the BLM process (PEIS)
  - Defined lease/rent rate policies and processes

Projects in SW U. S.

- 1 MW trough/ORC in Arizona (APS, Acciona) operating
- 64 MW trough electric project in Nevada (Nevada Power, Acciona) commissioned June 2007
- 500 (option to 850 MW) Dish Stirling plant in Southern California (SCE, SES, Aug 2005)
- 300 (option to 900 MW) of Dish Stirling plants in Southern CA (SDG&E, SES, Sep 2005)
- 553MW Trough plant (PG&E, Solel, July 2007)
- 177 MW Linear Fresnel Reflector (AUSRA, PG&E, Nov 2007)
- 280 MW Parabolic Trough with storage (Abengoa, APS, Feb. 2008)
- 250 MW Arizona PS Consortium RFP issued Dec 2007
- 250 MW Parabolic Trough (FPL Energy, AFC filed)
- 900 MW Power Tower (BrightSource, PG&E, April 2008)
- 245 MW Power Tower (EP Elect., eSolar, June 2008)
- Other RFPs issued but not announced (120 MW PNM, trough)