### Concentrating Solar Power - Point Focus Reflector Technologies

#### Types of Systems

**Power Tower**

- **Dish Engine**

#### Operational Receiver Technology Power Plants

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Location</th>
<th>First Year of Operation</th>
<th>MW</th>
<th>Solar Field Area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar One</td>
<td>Barstow, CA, USA</td>
<td>1982</td>
<td>10</td>
<td>72,650</td>
</tr>
<tr>
<td>Solar Two</td>
<td>Barstow, CA, USA</td>
<td>1995</td>
<td>10</td>
<td>82,750</td>
</tr>
<tr>
<td>Planta Solar (PS10)</td>
<td>Seville, Spain</td>
<td>2007</td>
<td>11</td>
<td>624,120</td>
</tr>
</tbody>
</table>

**Future Power Plants**

- **Spain** – Solar Tres (Solar Three), a 15-MW power plant using Solar Two technology will be three times as large as Solar Two.
- **California** – BrightSource Energy is building 500 MWs of distributed towers.
- **Spain** – Abengoa is constructing a larger version of PS10 called PS20 near Seville.
- **Australia** – Announced plans to build a 10-MW plant with heat storage near the town of Cloncurry.
- **California** – Announced plans to build an 800 MW of dish engine systems in the Mojave Desert and Imperial Valley.


**Solar Resource in 6 States**

**How They Work**

Receiver technology focuses concentrated sunlight onto a receiver to power an engine that produces electricity. Power Towers—use large sun-tracking mirrors, called heliostats, to focus the sun's energy on a receiver located atop a tall tower. In the receiver, molten nitrate salts absorb the heat, which is then used to boil water to steam, which is sent to a conventional steam turbine-generator to produce electricity.

Solar Dish-Engine System—an electric generator that uses sunlight to produce electricity. The dish, a concentrator, collects the sun's energy and concentrates it onto a receiver. A thermal receiver absorbs the concentrated beam of solar energy, converts it to heat, and transfers the heat to the engine/generator.