

Use of Concentrating Solar Technologies (CSTs) for Hospital and Hospitality Sectors

Dr. Sudhir Kumar

Jt. Director & Head

Center for Solar Energy,

World Institute of Sustainable Energy

Mb No. +91 96650 20206

Email: drsudhirkumar@wisein.org

drsk22@gmail.com

Objective:

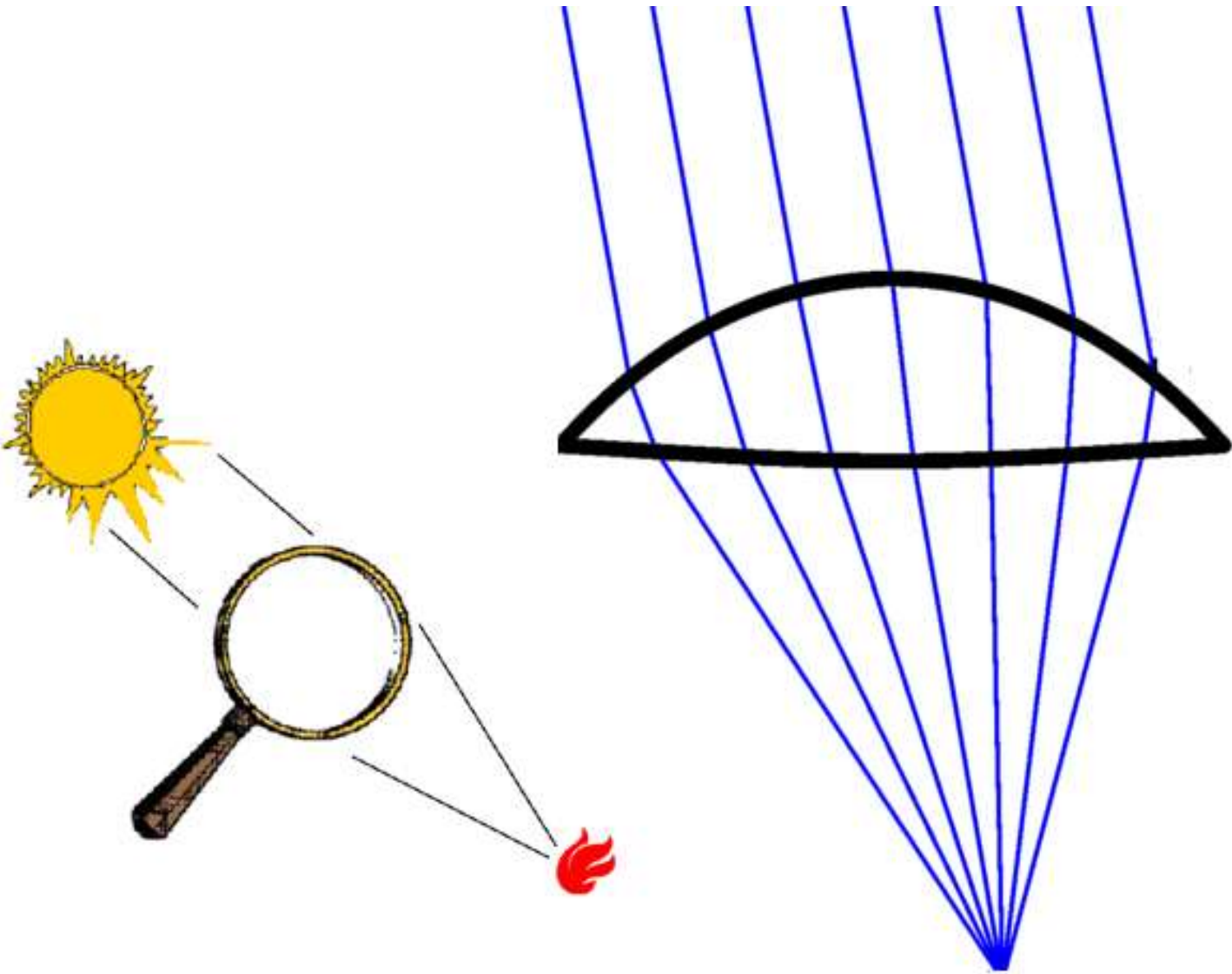
Use of solar heat to **produce**
high temperatures

Working principle:

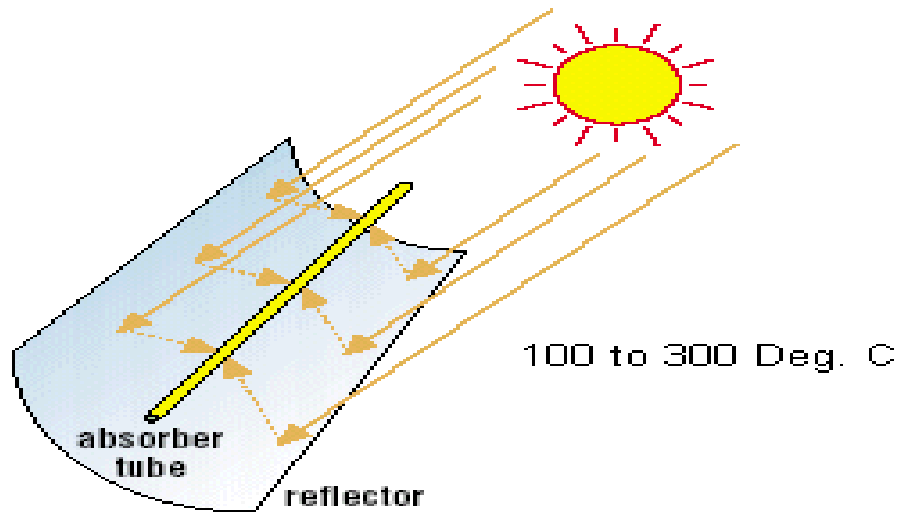
Collect solar radiations **on a**
large area and **reflect** them
onto a smaller area i.e.

Concentration

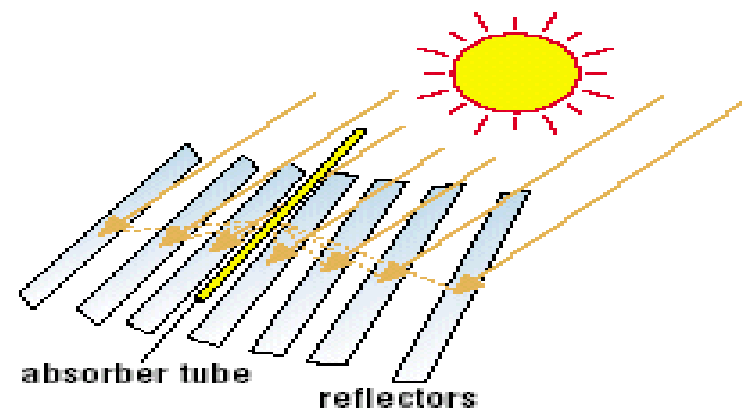
Concentrating Solar Technologies (CSTs)



Ways of Concentration

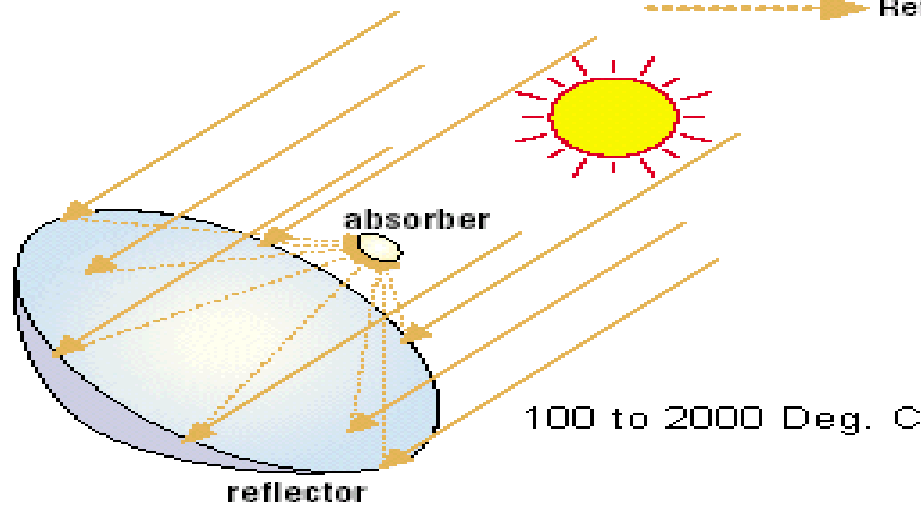


**Parabolic trough CST
(Line concentrating type)**

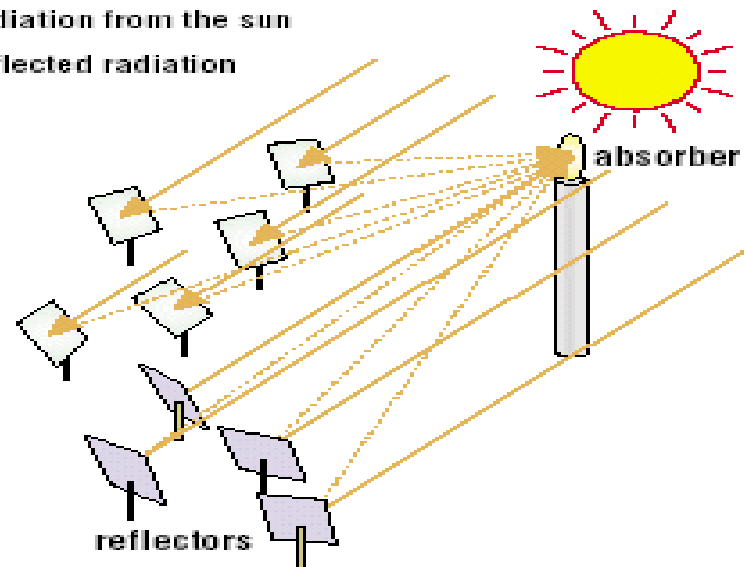


**Compact Linear Fresnel CST
(Line concentrating type)**

—▶ Radiation from the sun
- - -▶ Reflected radiation



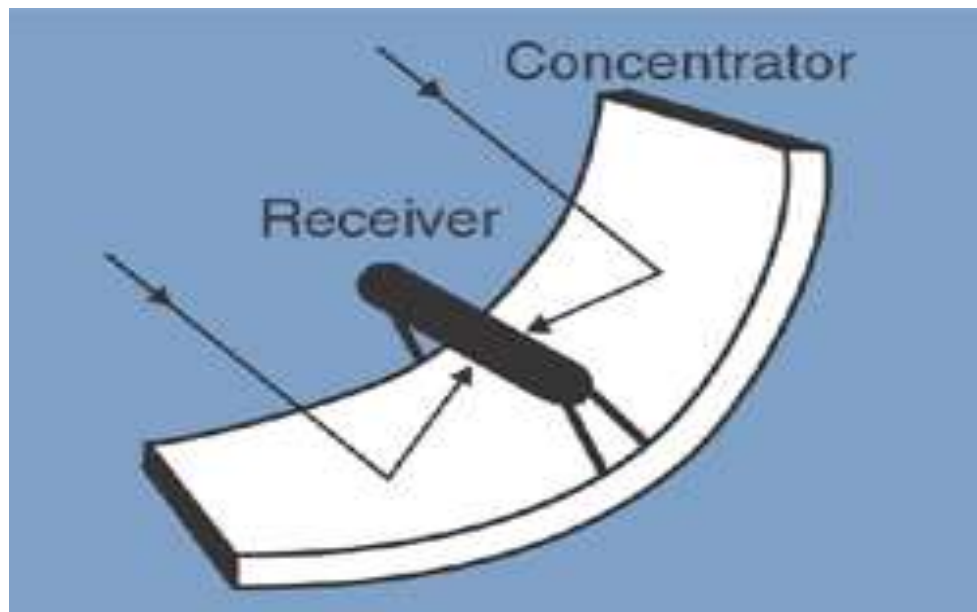
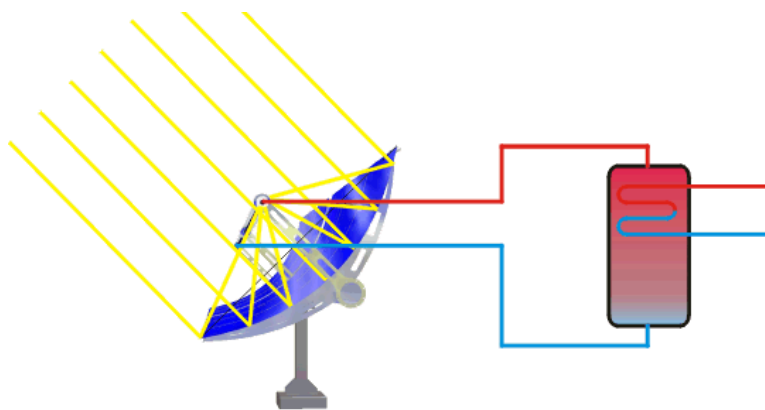
**Parabolic dish CST
(Point concentrating type)**



**Solar tower CST
(Point concentrating type)**

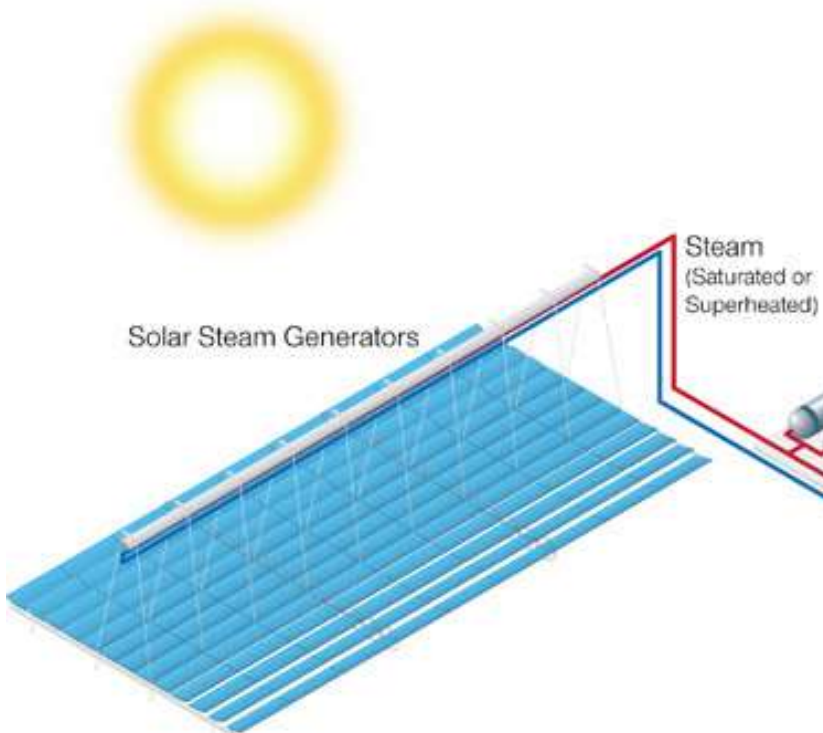
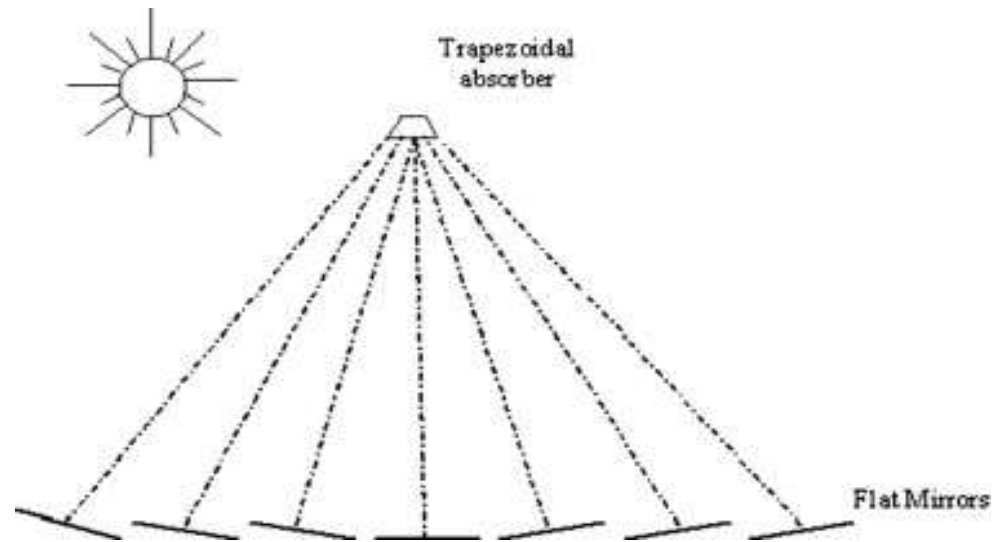
Parabolic Trough CST

- Low weight, low temp (up-to 300 Deg. C), **indirect steam generation** CST technology
- Suitable for **sterilization, cooking, laundry, hot water, Cooling, etc**
- Manufacturers and Suppliers –
 - Maharishi Solar Technology Pvt. Ltd, New Delhi,
 - Ultra Conserve Pvt. Ltd, Mumbai,
 - Thermax Ltd, Pune



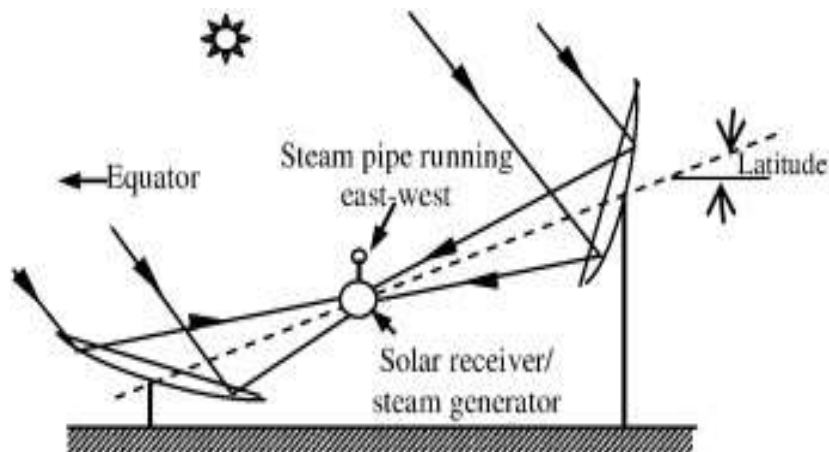
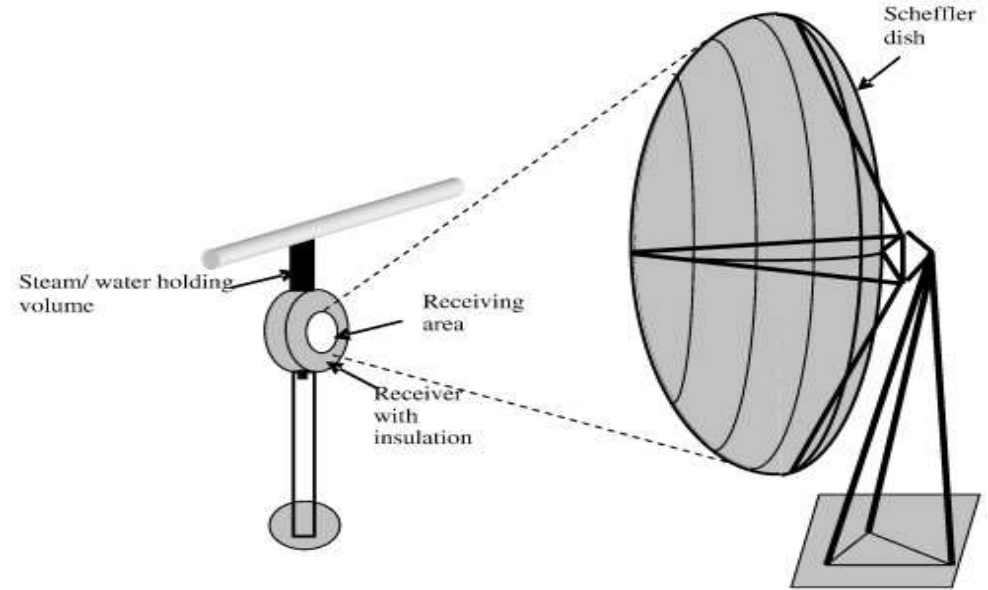
Compact Linear Fresnel (CLFR) CST

- Low weight, low temp (up-to 300 Deg. C), **direct steam generation** CST technology
- Suitable for **sterilization, cooking, laundry, hot water, Cooling, etc**
- Manufacturers and Suppliers –
 - KG Design Services Pvt. Ltd, Coimbatore



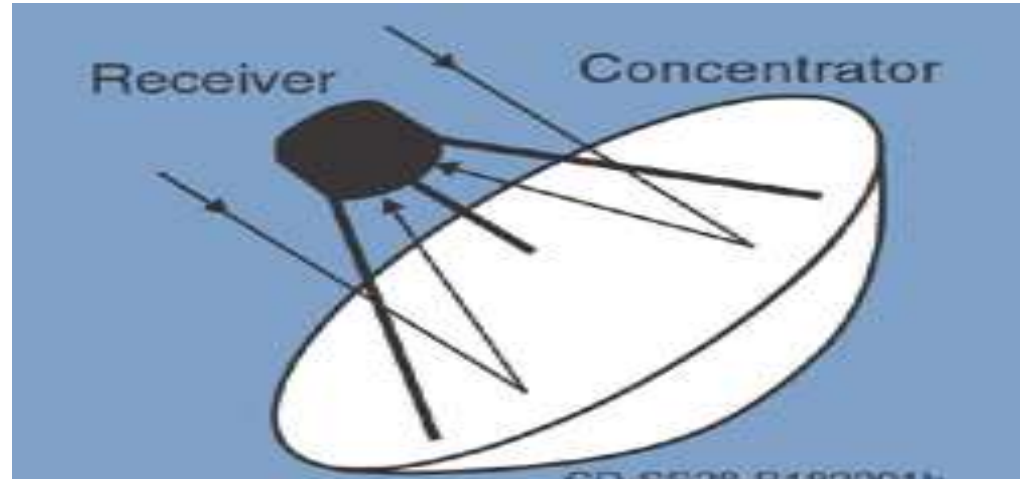
Parabolic dish (Sheffler i.e. Fixed receiver type) CST

- Low weight, medium temp (up-to 350 Deg. C), **direct/indirect steam generation** CST technology
- Suitable for **sterilization, incineration, cooking, laundry, hot water, Cooling, etc**
- Manufacturers and Suppliers –
 - Taylormade, Unisun, Thermax, AKSONS, Essential equipments, Sharda Inventions, Airier, Bhagwati, K Energy, Flareum, Bergen Solar, etc



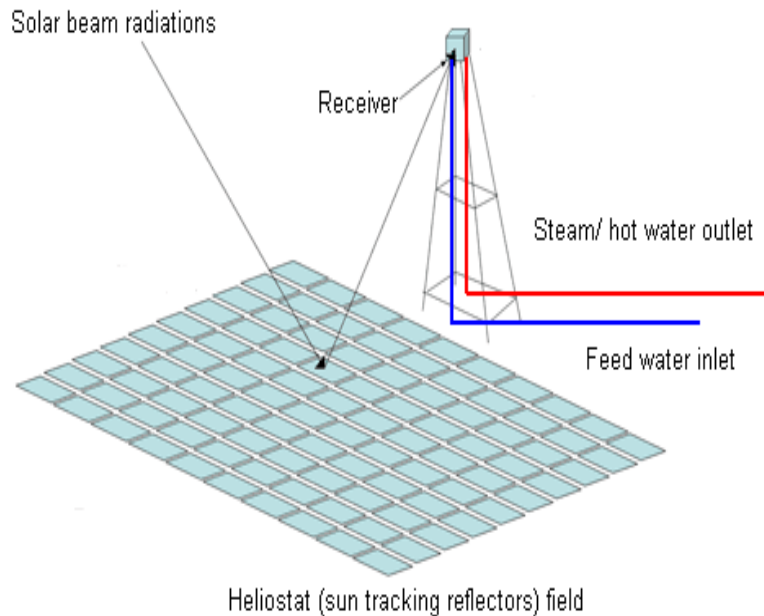
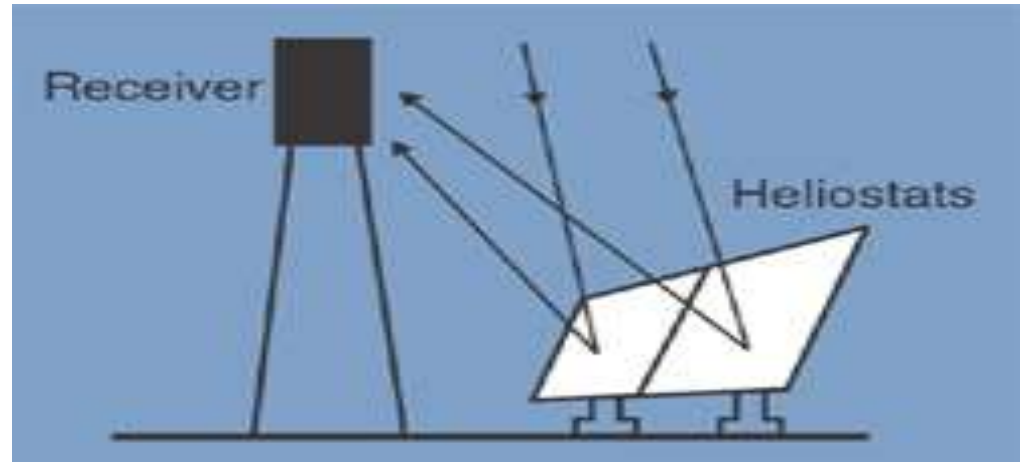
Parabolic dish (Moving receiver type) CST

- Bulky in weight, high temp (up-to 2000 Deg. C), **direct/indirect steam generation** CST technology
- Suitable for **sterilization, cooking, laundry, hot water, Cooling, etc**
- Manufacturers and Suppliers –
 - Clique Solar Pvt. Ltd, Mumbai
 - Megawatt Solutions Pvt. Ltd, Chennai



Solar Tower CST

- High temp (up-to 2000 Deg. C), **direct/indirect steam generation** CST technology
- Mainly used for power generation but can be utilized for **sterilization, cooking, laundry, hot water, Cooling, etc**
- **Manufacturers and Suppliers –**
 - Nil



- **Sterilization**
- **Incineration**
- **Laundry**
- **Cooking**
- **Cooling and space heating**

- **Cooking**
- **Hot water**
- **Laundry**
- **Cooling and space heating**

Thank You