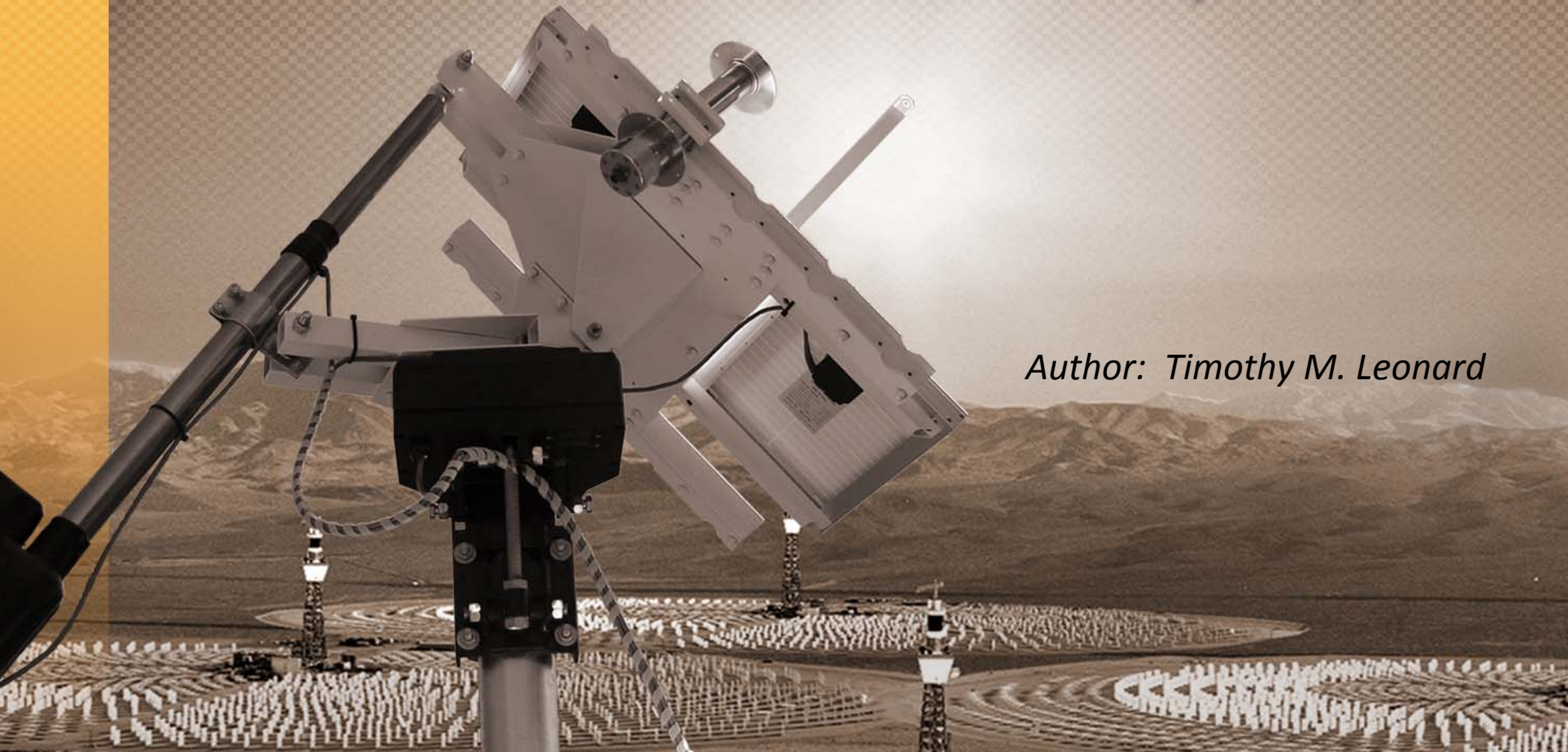


Solar Resource Assessment



Author: Timothy M. Leonard

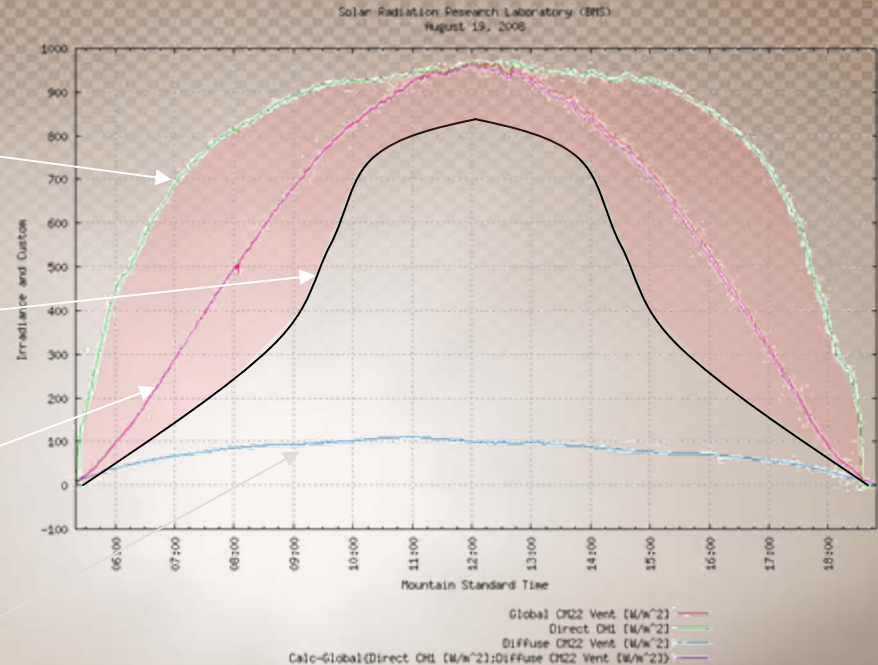
2008



Now You See it...

The Power Available

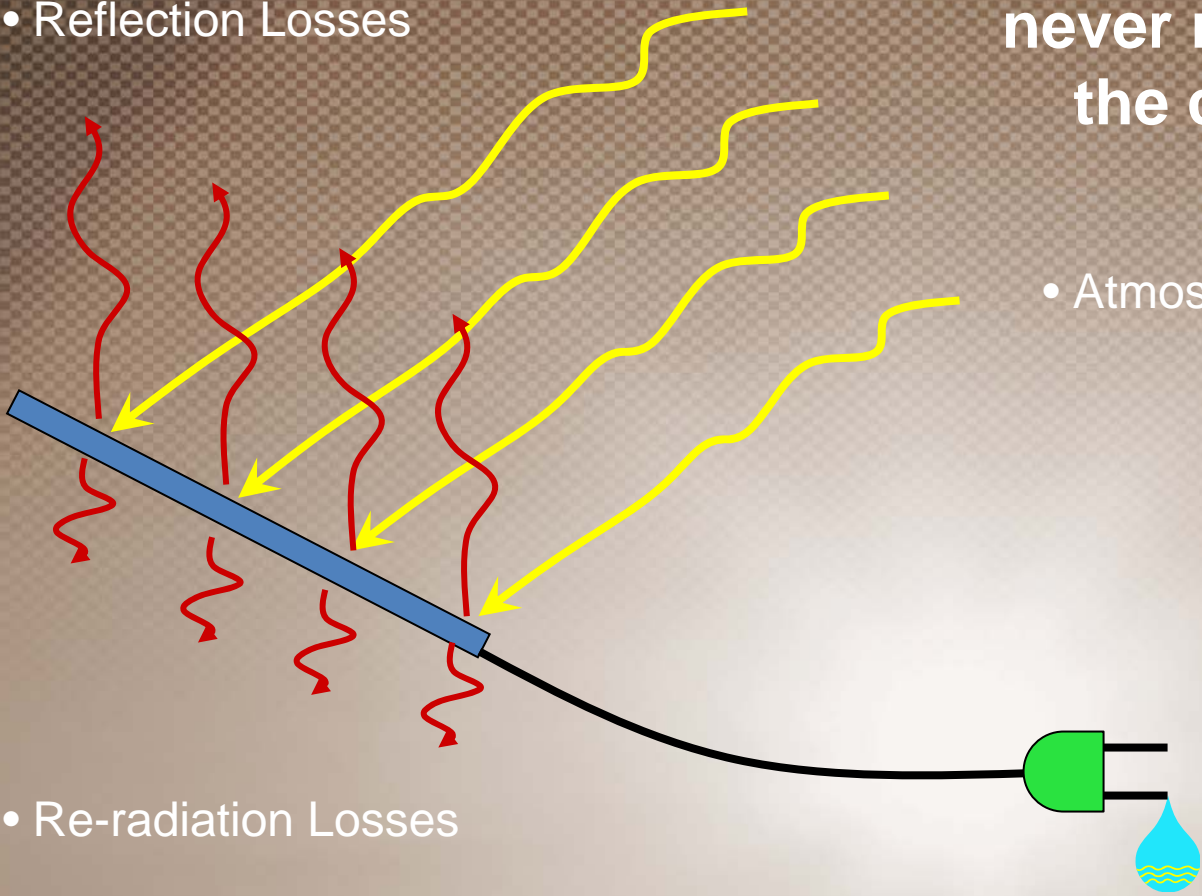
- If the collector is tracking the sun
- If the collector is fixed
- Apparent Sky Brightness
- Everything but the sun itself



**Some energy
never makes it to
the collector**

- Reflection Losses

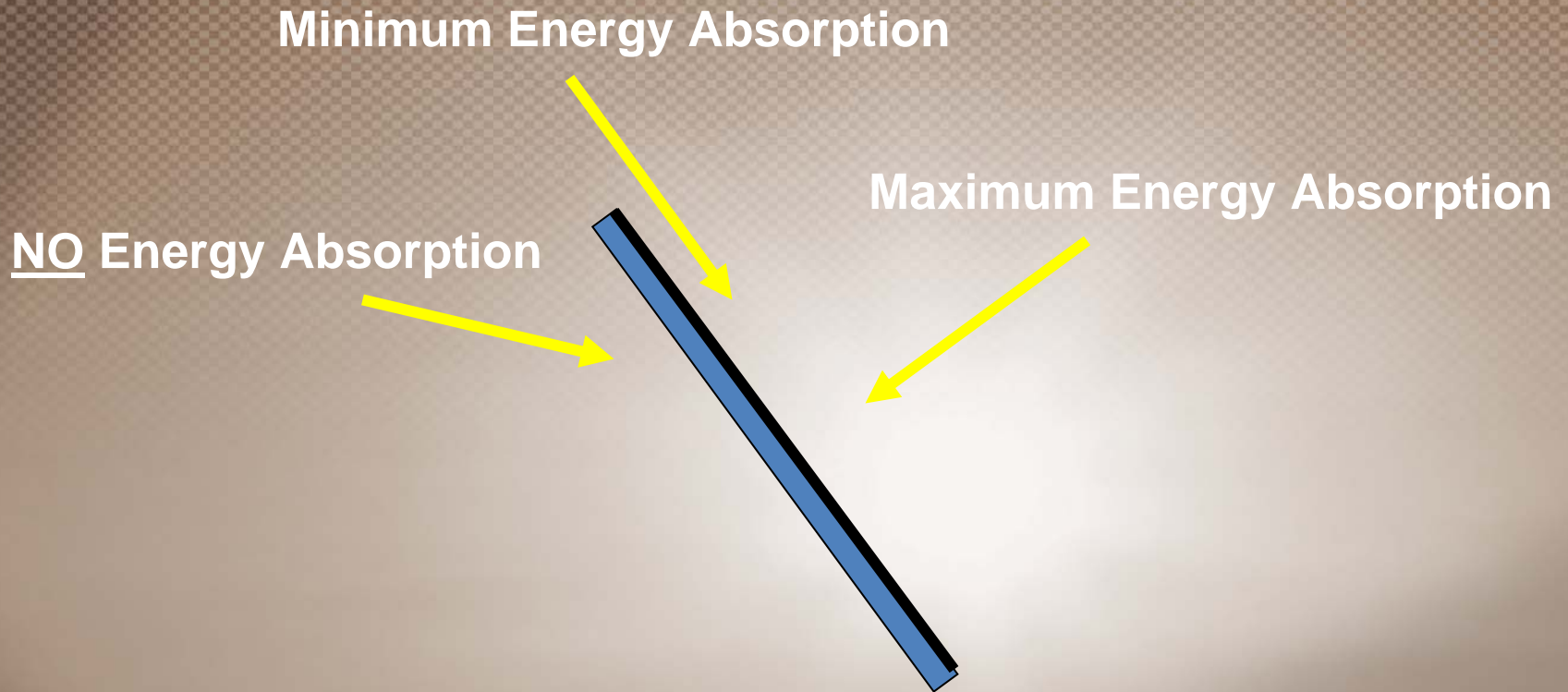
- Atmospheric Losses



- Re-radiation Losses

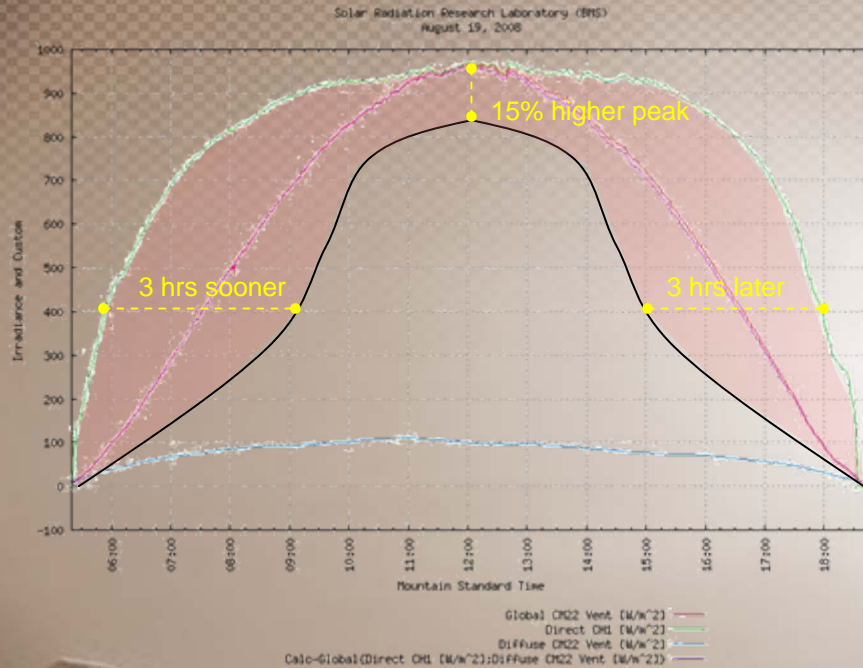
...Now You Don't!

Mother Nature's Angle...



Hurry Up and Wait...

Tracking Yields 6 extra hours above 40% power per day in the summer



- More Energy Earlier
- More Energy Later
- More Energy at Peak

The Cost of “Too Simple” ...

- Getting Less Energy for Shorter Periods
- Adjusting your Schedule to Suit the Sun
- Purchasing More Equipment to Satisfy Need

Some Solutions...

- Reduce Need – Insulate

Radiant Floors lose 30% of their heat to the earth without insulation underneath

Aim for R19 walls and R30 ceilings

- If you Need Heat – Make Heat

Use thermal panels to make hot water even if there are no production tax credits. You'll save so much money, Who Cares?? Make sure to have a storage tank.

- If you're on the grid – Stay There

It will cost more but add the storage batteries... you won't notice when the grid goes down and you can sell power back.

Products on the Horizon...

- Residential Hybrid Heat/Electricity System

Get Domestic Hot Water and PV
Electric Power from a Single Tracking
System

- Solar/LED Sign Illumination

Store Energy during the Day

Light your Sign all Night

- Solar/Fiber-Optic Daylighting

Will even bring moonlight into your living room

The Prospector Assayer...



Independent Performance Verification



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