Tracker Test:

1. These types of mounting have the ability to:

Change the tilt angle the PV panel is facing.

1. What are the two basic types of tracking systems?
   1. Single axis
   2. Dual axis
2. Define axis with respect to trackers.

Axis is a reference point or line something rotates around.

The axis is either zenith (east-west) or azimuth (north-south).

1. The earth rotates every day, is it on a azimuth or zenith axis.

Azimuth axis (north-south)

1. Why do fixed tilt PV panes capture less sun in the early morning?

Due to the Cosine rule the angle of incident is very high.

1. When an east-west single axis tracker is laying flat what percent increase does it have over a fixed tilt of 15 degrees?

None, laying flat is the lowest capture of irradiance.

1. Compared to a fixed tilt PV system, what gain can an east-west single tracker provide?

10 - 18 percent

1. Compared to a fixed tilt PV system, what gain can an north-south single tracker provide?

21 percent

1. Compared to a fixed tilt PV system, what gain can a dual tracker provide?

24 percent

1. What is a common gear set that is used to move a tracker?
   1. Worm gear

1. If the speed is reduced in a worm gear set, what happens to the torque?
   1. Increased
   2. Decreased

1. What helps keep the tracker from moving in the wind?
   1. Worm gear with speed reduction.
2. Some manufacturers add a wind vane to a tracker. Why?
   1. To lay the panels flat to reduce wind loading.

1. Some manufacturers add a pyranometer to a tracker. What is the advantage of doing this and why?
   1. Keeps the tracker referenced to capture more radiation during times of non-direct irradiance.
   2. Cloudy and foggy conditions.

1. Name the two most common types of maintenance done on trackers?
   1. Greasing the bearings / gears.
   2. Checking for play in the gear mechanism.