

Field Trip Study Guide

Before you leave

- 1) Find the valence electron number for Boron, Phosphorus & Silicon.

Boron _____ Phosphorus _____ Silicon _____

- 2) Research the total amount of energy generation that wind & solar contribute to the nation's energy grid: _____%

While you're there

Tasks:

- 3) Visit the substation and see how the energy created by the photovoltaic cells are converted to usable energy for the 400,000 homes this array produces power for. Take a picture.
- 4) Ask your guide how the DC current that the PV cells make is different from the AC/DC current used in American homes and how that power is converted to be useful. Write a summary of what they say.
- 5) View the mechanism behind how the solar arrays move. Take a picture. Describe how and why they do this.

Observations:

- 6) What do the arrays attach to in order to move? Get the specific name.

- 7) How do arrays get their power to the "grid." Take a picture there.

Higher Order Questions / Activities:

- 8) What measures do the AVSP take to lessen soil erosion when high winds are present? What more could they do?

9) How long does the average photovoltaic cell last? Why can't they last much longer than that?

10) Ask why the company has half of its facility in Los Angeles county and the other half in Kern county. What benefit is there to this?

When You Return

11) What was the most interesting part of the field trip for you personally?

12) What did you learn about the environmental benefit of solar power?