

ARE WE BEING GOOD ANCESTORS? A LOOK AT PITTSBURG UNIFIED SCHOOL DISTRICT'S RENEWABLE ENERGY PLAN



Presented by:

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WHO ARE WE?

PITTSBURG UNIFIED SCHOOL DISTRICT

- ▶ **K-12 School District located in East Contra Costa County, in the Bay Area of California**
- ▶ **Fourteen school sites, all located in the City of Pittsburg, including:**
 - ▶ **Eight (8) Elementary Schools**
 - ▶ **Three (3) Junior High Schools**
 - ▶ **One (1) Comprehensive High School**
 - ▶ **One (1) Continuation High School**
 - ▶ **One (1) Adult Education Center**
 - ▶ **Youth Development Center, District Office and Site Support Services Center.**
- ▶ **Current ADA is approximately 11,500**
- ▶ **Free and Reduced lunch students – 74% of total student population**

Pittsburg Unified's Transportation Plan

As part of the plan for the new COP, the Transportation Department was a recipient of funding for a variety of energy-efficiency projects:

- ❖ In conjunction with a grant, the District installed twenty-two (22) – Electric Vehicle (EV) charging stations in the District.
 - ❖ Ten are at the Site Support Services Center, which houses all support departments, including Maintenance, Operations, Transportation, Facilities, Child Nutrition Services, and Information Technology.
 - ❖ Two (2) – 2 port charging stations at the District Office
 - ❖ Eight (8) –at Pittsburg High School.
 - ❖ Two (2) additionally added at one elementary school
 - ❖ Planning phase for 9 additional chargers at 3 school sites (Completion June 2021)
- ❖ With the grant, we were able to get \$76K worth of infrastructure installed with a resource commitment from PUSD of \$9,600.00.
- ❖ **Assembly Bill No. 2414** Approved by Governor August 19, 2014: The bill specifies that "... the use of electricity by state government and other government entities, state officers and employees, or other persons for the charging of an electric vehicle in a department maintained or joint use motor vehicle parking facility is not a gift of public funds that is prohibited by the California Constitution.
- ❖ **Employees and Students charge for free, small cost to general public.**

Pittsburg Unified's Transportation Plan (con't)

We purchased our first six all-electric vehicles: Kia Soul EV's

- ❖ **Two are used for the transportation of Special Ed students that attend NPR out of the area.**
- ❖ **One is used for our District courier**
- ❖ **One is used for our Gardening Supervisor**
- ❖ **Two are used for support staff as needed.**
- ❖ **Our yellow bus fleet was outdated, with some buses over 25 years old and with many hundred thousands of miles. Almost all were Diesel powered**
 - ❖ **We have bought, with assistance from a grant from Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP), our first two all-electric full-size buses, 64-seaters. 2 additional buses are now in service daily**



Pittsburg Unified's Renewables Project (con't)

Knowing that we were going to have at least eight or nine EV Buses, our Energy Efficiency representative from PG&E introduced us to the person in charge of finding school districts that have or will have EV buses for a pilot program to install EV charging stations for the buses.

- ❖ PUSD already had ownership of 2 EV buses, and plans for 6 more
- ❖ Being an economically disadvantaged community also helped the District qualify
- ❖ A renewable energy program that could provide energy to the new EV bus chargers.

Originally, the program was only going to be for the two buses, but in discussions with PG&E, we informed them of our future commitment to EV buses; they agreed to do the entire infrastructure for nine EV bus charging stations. This included:

- ❖ All plans and design work, including customized software to track the data of input, output, timing, and other factors, valued at over \$2M.
- ❖ Provide a new transformer to handle the current load plus the new charging stations.
- ❖ Aggregate this new meter with the new solar/wind generation meter, to feed the chargers when we are producing a load beyond what our needs are for the SSSC.



Pittsburg Unified's Newest Renewables Project

The PUSD Site Support Services Bioswale Solar and Wind Generation Project

- ❖ One acre of land bioswale – storm water retention area for drainage of five different properties on a corner block in Pittsburg.
- ❖ Bioswale requires natural vegetation on ground, to aid in absorption of water when heavy rains occur.
- ❖ Panels developed at UC Santa Cruz originally to use in agricultural fields.
- ❖ Built to allow red light to travel through to promote vegetation growth, while green light is captured by the photovoltaic cells to produce solar power.
- ❖ Panels are bright red with black cells
- ❖ Now allows for double use of land previously unusable
- ❖ Solar will generate 166kW of energy with solar.



Pittsburg Unified's Renewables Project



Pittsburg Unified's Newest Renewables Project

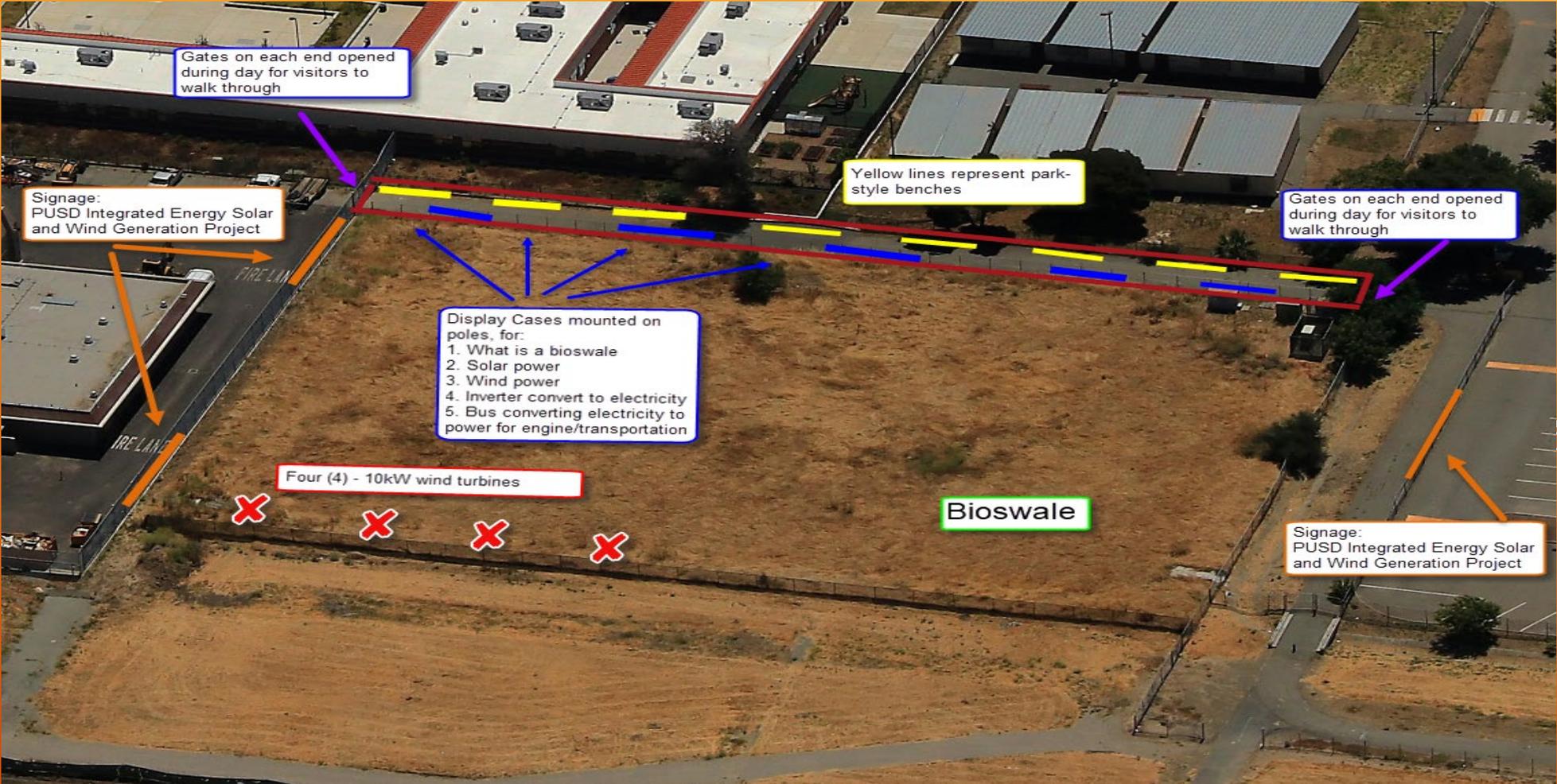
Upon recognizing we had additional funds to work with, we changed the plans to be four – 10kW wind turbines, with the ROI still staying under 13 years.

- ❖ Our turbines will have a vertical axis, which has great benefits:
 - ❖ Much safer speed controls, able to withstand winds of 110 mph
 - ❖ Greater durability
 - ❖ Bird friendly
 - ❖ Generates power at 5mph, with winds from all directions (360*)
 - ❖ Lower maintenance and prolonged lifespan



Pittsburg Unified's Newest Renewables Project

In looking at this project, it was recognized that this provided a perfect learning and teaching opportunity! We are now in development of the Bioswale Solar and Wind Generation Teaching Center.



PUSD and Sustainability – Parkside Elementary School



PUSD and Sustainability – Parkside Elementary School



Teachers can utilize hallways for learning spaces for small or larger groups

Learning spaces in the wider hallways, with natural lighting a priority.



So Are We Being Good Ancestors?

What does this quote really mean?

- ❖ Are we leaving the District, the Community, the City, State, Country a better place environmentally than how it was passed on to us?
- ❖ What are we doing to help make this a better place to live for our students, our children, the generations that follow us?
- ❖ What can we do that we still haven't done to leave things better for those that come after us?



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