Request from South Bay Residents to Reject Any New Power Plant at the AES Redondo Site

21 September 2011

Submitted by Building A Better Redondo on behalf of the residents of the South Bay.

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Executive Summary

Redondo's power plant was originally sited where it is today because the property was undeveloped wetlands surrounded by industrial uses and rail yards. Through the years, a small recreational boat harbor was built on the west side of the power plant, and high density housing, office space, hotels and restaurants have surrounded the power plant property to the north, south and east. Reports from the City of Redondo demonstrate that these uses are incompatible with the power plant and have a negative economical, ecological and health impact on those incompatible uses. The reports call the power plant "the major blighting influence in the area" and cite property value impacts of over 40%.

The current AES power plant has, in recent years, run at around 5% of capacity according to California Energy Commission (CEC) reports. The facility is no-longer designated as a "must run" facility. 2010 California Independent System Operator (CAISO) report projects a 26% excess power generation capacity without the AES Redondo plant; and, CEC officials have stated a coastal power plant in this load pocket can be retired.

Any new power plant will continue the impacts of the existing plant – the impacts are immitigable. Since the plant is no longer critical to the grid, the residents of Redondo and Hermosa Beach request that your organization reject AES' plan to continue use of this site for power generation.

I. Introduction

This report is generated by Building a Better Redondo, a non-profit organization made up of and funded by South Bay residents for the protection and enhancement of resident quality of life in our area. The report summarizes data from a variety of sources related to the need for and impact of a new power plant on the AES site in Redondo. It also demonstrates that the surrounding population opposes any new power plant at this site.

II. New plant unnecessary

According to a 2010 CEC report[1] the AES Redondo Power Plant ran at less than 5% of capacity and produced less than 0.1% of California's power in that year. Figure 1 shows the run times of each unit in 2008. For the sake of comparison, Figure 2 shows run times of other power plant units in the area. The comparison makes it clear how little the Redondo power plant is called up to deliver power to the grid.

[1] The Role of Aging and Once-Through-Cooled Power Plants in California, California Energy Commission Staff Report, February 2010; CEC-200-2009-018

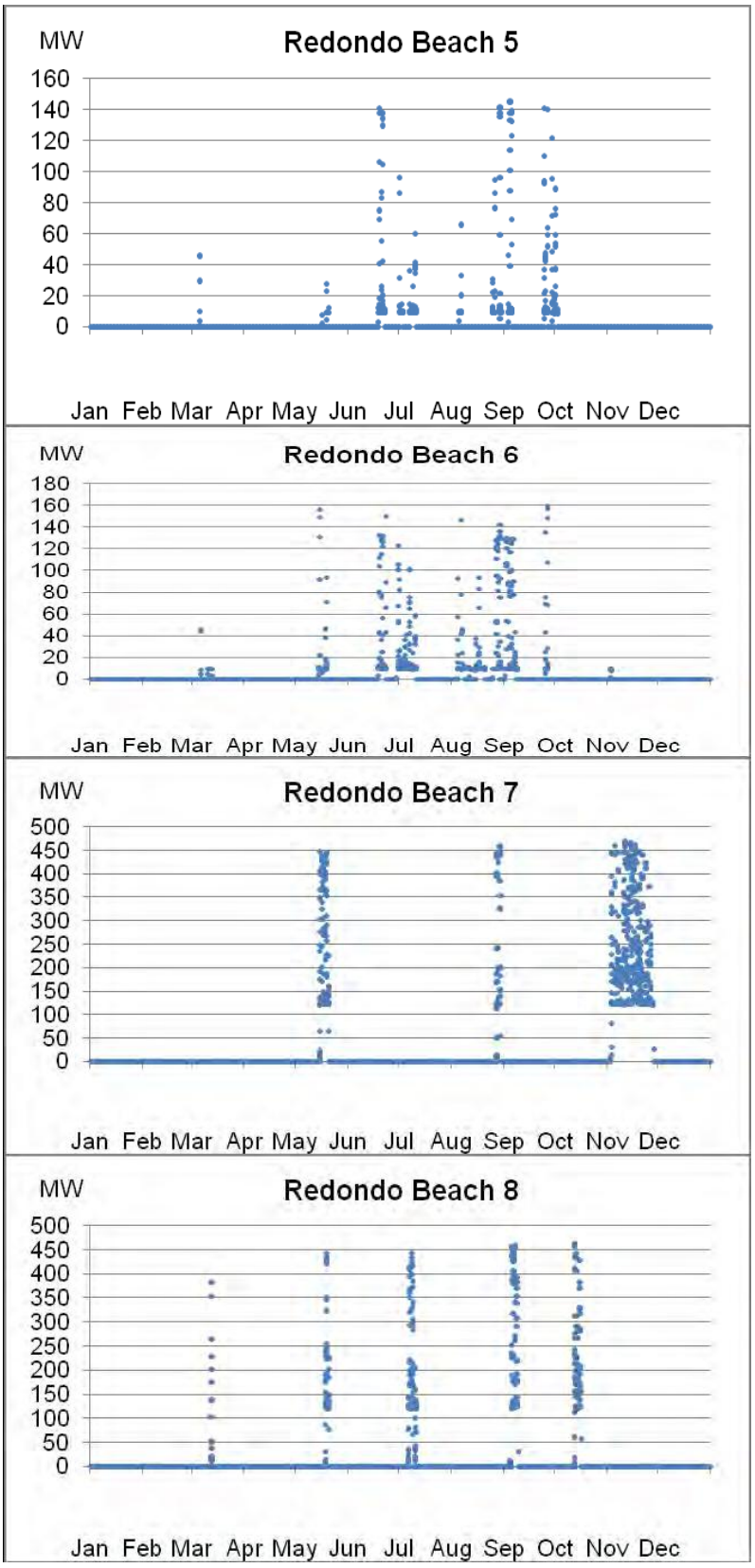

Figure 1: AES Redondo run times in 2008 demonstrate the plant ran at less than 5% of capacity.

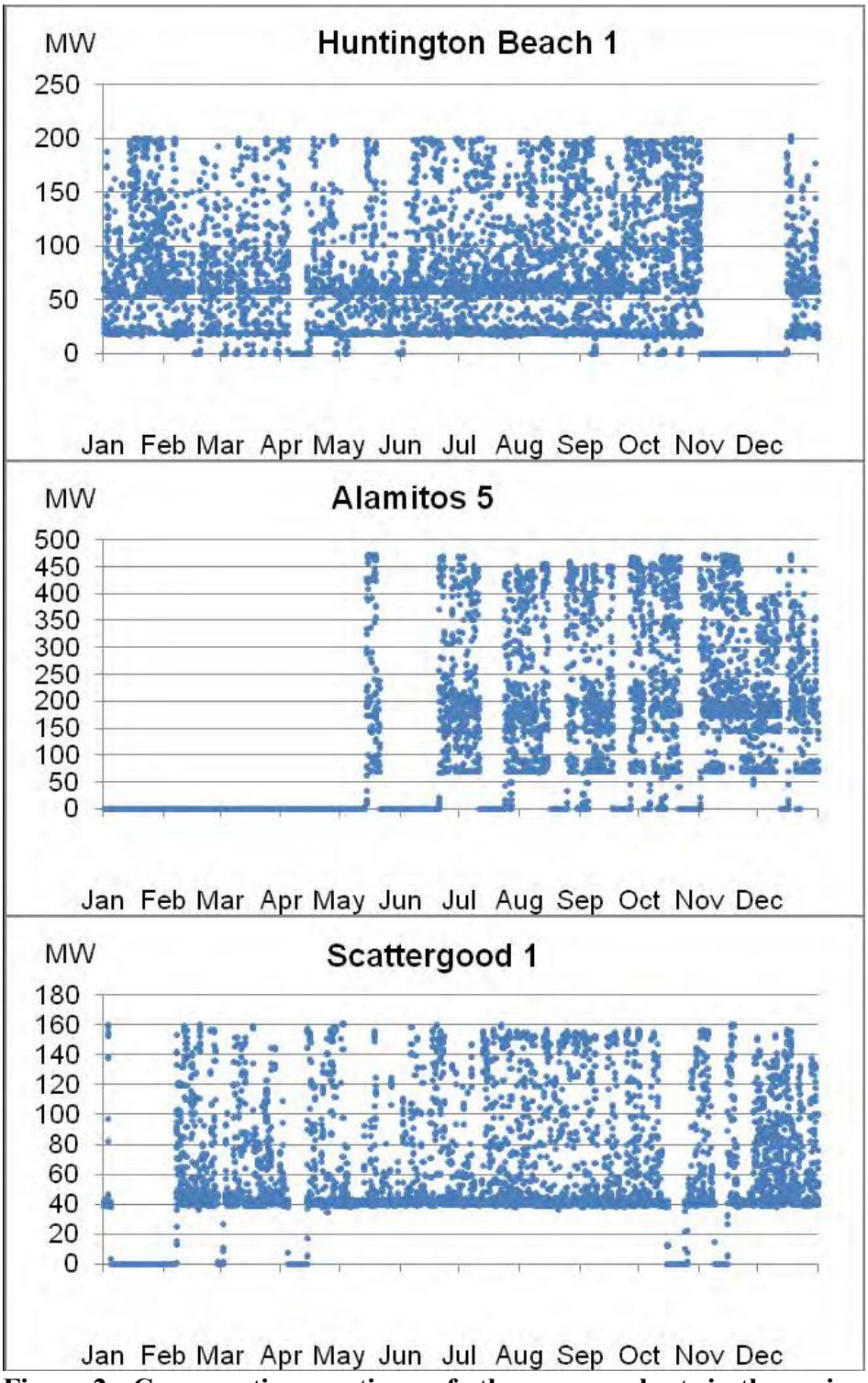

Figure 2: Comparative run times of other power plants in the region for 2008

A January 2010 CAISO report, "2013-2015 Local Capacity Technical Analysis"[2], projects power generation reliability requirements through 2015. In 2015, the Redondo power plant would feed into the "Western LA Basin Sub-Area" which the CAISO evaluated separately due to expected transmission limitation. Figure 3 shows the projected power generation capacity and requirements for 2015 from page 78 of the report:

Western LA Basin Requirements:

	QF/Wind (MW)	Muni (MW)	Nuclear (MW)	Market (MW)	Max. Qualifying Capacity (MW)
Available generation	836	392	2246	5497	8971

2015	Existing Generation Capacity Needed (MW)	Deficiency (MW)	Total MW Requirement
Category B (Single) [18]	5988	0	5988
Category C (Multiple) [19]	5988	0	5988

Figure 3: Western LA Basin 2015 projected power generation and requirements

This table clearly shows that the loss of Redondo's 1300 MW of capacity would still allow for a 26% excess in generation capacity over projected needs. It should be noted that the needs are calculated with excess needs built-in to accommodate two contingency scenarios, labeled "Category B" and "Category C". Therfore, the 26% excess is in addition to contingency margin built into the "capacity needed" numbers. **This table makes it clear that the Redondo's power plant is not needed in 2015. The 26% excess without Redondo power generation will accommodate substantial future growth in demand with minimal risk to grid reliability.**

Councilman Bill Brand met with officials of the California Energy Commission on this topic. The CEC officials corroborated the CAISO report, **stating a costal power plant in the South Bay can be retired without impact.[3]**

Even AES does not expect their new power plant to run full time. In an op-ed article published in Redondo Beach Patch, Jennifer Didlo, AES Southland Project Development Coordinator, states *"Like our existing plant, our new facility would not operate 24/7. It would primarily be used to help keep the state's power grid running reliably…."* [4] Therefore, even AES recognizes that their power plant capacity is not required on a full time basis. Note however, they have not revealed how much they plan to run.

In summary, the current plant rarely runs, both the CEC and CAISO have demonstrated that excess capacity exists without the AES power plant generation capability and AES itself realizes their capacity would be used only sporadically in the future. Future sections will discuss the negative impacts of the power plant the opposition of the local populace to these impacts. **The**

[2] 2013-2015 Local Capacity Technical Analysis Report and Study Results**,** California Independent System Operator; December 30, 2010
[3] Interview with Councilman Bill Brand, August 2011
[4] Redondo Beach Patch; "Op Ed: AES Aims for Greener Future", Jennifer Didlo, Project Development Director, AES Southland,; August 22, 2010

question is: why California agencies involved in the approval of the now plant would grant such an approval when faced with the excess capacity and the impacts a new power plant at the AES site would represent? We hope this body will come to the conclusion that any benefit of a new power plant at the Redondo site does not outweigh the impacts to the health and welfare of the surrounding community. **We ask this body to oppose repowering/building a new power plant at this site.**

III. Negative impacts of the power plant

In addition to the projections that a new power plant at Redondo is not required, the power plant would have substantial negative impacts on surrounding residents and businesses. The following excerpt from a 2004 City of Redondo staff report demonstrates the wide impact of the power plant:

> *"Data on residential property values in the area provide evidence of this adverse economic influence…. There is no doubt that these impacts are primarily attributable to the power generating plant and these impacts would remain if the smaller indust4rial uses were removed….*
>
> *The continuation of the power generating plant also harms the quality of life for residents by blocking visual and public access to the waterfront…*
>
> *The power plant also harms the public health and quality of life due to air emissions, noise…, impacts on the marine environment…, and contaminated soils and groundwater…."*[5]

These negative impacts, detailed in the sections that follow, combined with the excess power generation projected without the AES Redondo plant, make opposition to any repowering/rebuild the only reasonable conclusion.

A. Incompatible land uses surround power plant property

The AES Redondo site is unique from other South Bay coastal power plants in the fact that over time incompatible uses have crept up to the very property line on all sides of AES's Redondo property. Figure 4 shows the uses and their proximity to the power plant:

[5] Staff Report Redondo Beach Planning Department; Amendments to the General Plan, Harbor/Civic Center Specific Plan and Zoning Ordinance for the Coastal Zone, PC-04-40, Agenda Item 15, May 20, 2004

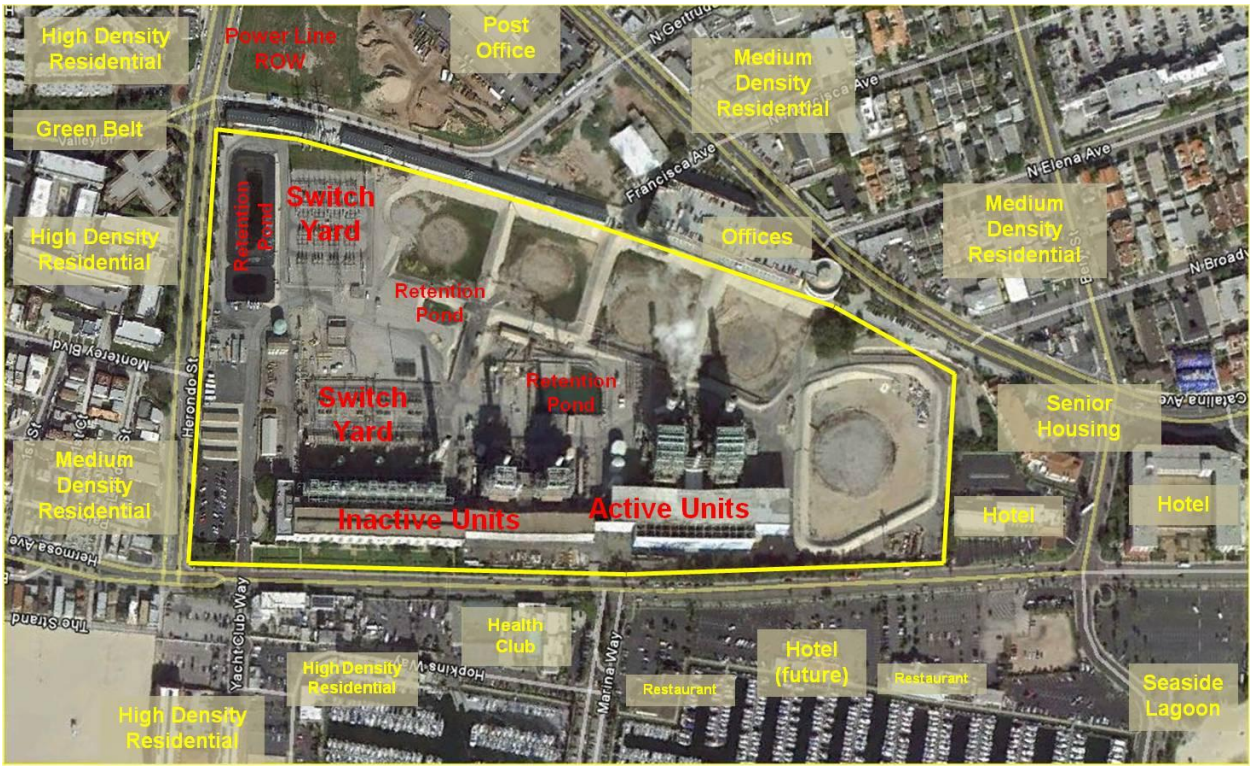

Figure 4: Incompatible uses surround the AES property line

As seen in this photo, a senior housing center, a hotel and an office building are built right on the property line with the AES property.

To the west (down on this photo) right across the street from the power plant is two high density housing buildings, a health club, two restaurants, a future hotel and the Seaside Lagoon (a one of a kind facility on the West Coast, in which children can swim in a sand bottom man-made lagoon filled with ocean water). And behind these uses are marinas in King Harbor, which was built after the power plant was sited at this location.

To the north (left on this photo), Multiple medium and high density residential units are right across the street from the power plant. Additionally, the southern end of the Greenbelt hiking/jogging/biking trail starts here as well.

To the south (left on this photo), is the previously mentioned senior housing facility and two hotels. Across the street is medium density residential housing.

To the north (up in this photo), is the previously mentioned office building and across the street is medium density residential housing.

The AES Redondo site is unique from other local region power plant sites in its compactness and the proximity to and envelopment by developed incompatible uses. This is further exacerbated in the location of the switching yards which are owned by Southern California Edison. According to AES, they plan to build around these switching stations due to the cost of moving them. This further limits siting options. As stated before, there is no way to

site the plant to provide any substantial buffer from the incompatible uses. The geographic center of this site is just 500 ft from incompatible uses to the east and west and 1085 feet to incompatible uses to the north and south. Obviously the foot print of the plant itself will substantially reduce these best case separation distances. Typical plant layouts for a plant of this size are on the order of 1000 ft by 400 ft and the cooling system could occupy additional square footage. Thus the maximum distance from the new plant to housing, office space, hotels, or restaurants will be in the hundreds of feet at best. Unlike other power plant sites in the South Bay, **there is no way to site the new power plant to provide a sufficient buffer to the incompatible uses**.

If one looks at the bigger picture of surrounding uses, the situation only gets worse:

Figure 5: AES Redondo property location in perspective

Figure 5 shows that the **AES Redondo property is situated in the midst of the highest population density on the West Coast**. Hermosa Beach, which is right across the street to the North (left in the photo) of the property is at over 13,000 residents per square mile. Redondo Beach is at over 10,000 residents per square mile.[6] With prevailing winds running from west to east, the pollution and noise propagate into high density residential areas that are both down wind and uphill from the plant.

The photographic evidence is corroborated by a 2003 report from the City of Redondo Beach which states*: "There are …specific incompatible uses…* ***Of particular importance is the AES power generating facility being adjacent to commercially zoned properties."***[7]

[6] Hermosa Beach and Redondo Beach city websites

[7] Report to Council; Catalina Redevelopment Project; Redondo Beach Development Agency; The Davis Company, July 2003

Clearly, based on surrounding development, the AES Redondo property is not an appropriate site for the new power plant.

B. Economic impacts on residential property and commercial property

The power plant in existence today already has substantial impact on the property values and business revenues of the surrounding community. These impacts are driven by the visual, noise, air pollution and other impacts cited in sections to follow. As stated previously, the compactness and configuration of the site preclude any reasonable buffer between a new power plant and the surrounding residential and commercial uses. Even though a new plant may be smaller and more compact, the negative impacts will remain and thus the impacts on property values and business revenues.

The economic impact of the power plant is well documented. The area was declared blighted in 2004 by the County of Los Angeles. 2003[8] and 2004[9] reports by the City of Redondo Beach (Appendices H&I) quantify these impacts:

> *"The power generating plant is **the major blighting influence** in this area due to the size of the site, the visual impact of the use on the surrounding area, and undesirable environmental impacts of the use that effect public health, safety and welfare."…*
>
> *"Of particular importance is the AES power generating facility being adjacent to commercially zoned properties. The negative impact of this facility can be demonstrated by the absence of new development in the adjacent properties, the general deterioration, and the substandard use of adjacent properties."…*

According to the 2003 Report, **residential properties in the neighborhoods adjacent to the power plant were valued at nearly 28% less than those to the south and 48% less than those to the east**: *"… the duplex/two-unit condominium values indicate a substantial value increment in Areas 2 and 3, ranging from almost 28% to 48%." (page 17)*

The same study noted **a negative impact to commercial property values adjacent to the power plant of over 40%**: *"Compared to the City, Project Area private property values, comprised mostly of commercial-use designated property, evidenced a negative change of over 40% compared to the City as a whole."*

Although we have not found a definitive study showing the impacts on business revenues, the lack of development of certain parcels – Cannery Row, the property around Cannery Row, and the "dirt farm, which all front Catalina Blvd (the same street the very successful Riviera Village area is in) demonstrate the negative impacts of the power plant on business viability. Certainly commercially zoned property two blocks from the ocean should be able to attract thriving

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[8] Report to Council; Catalina Redevelopment Project; Redondo Beach Development Agency; The Davis Company, July 2003

[9] Staff Report Redondo Beach Planning Department; Amendments to the General Plan, Harbor/Civic Center Specific Plan and Zoning Ordinance for the Coastal Zone, PC-04-40, Agenda Item 15, May 20, 2004

business interests to invest in the properties. A second indicator is the fact that a mini-storage and office complex was built right next to the power plant property line. Again, without the power plant, it is certain that a higher and better use for this property could have been easily attracted. Now the mini-storage adds to the blight of the area. A third indicator is business failures. The "Camacho's" property is right on the harbor across the street from AES. This site is now vacant due to the third failed restaurant at the site. Businesses on Catalina failed and their zoning was converted to medium density condo and affordable housing. The final indicator is discussions with current hotel and restaurant managers who all state that business would be better without the power plant. This should be no surprise since the power plant blocks any view of the harbor and harbor area businesses from PCH and Catalina (our two arterials running parallel to the coast) and the overwhelming domination of the harbor environment by the power plant.

The economic impacts of a power plant on the AES property are well documented and are very substantial. If the power from the power plant is not critical to grid reliability, the negative impacts outweigh the benefits.

C. Visual impacts

The location of the AES power plant is unfortunate in that it exacerbates the visual impacts imposed by any power plant. AES is situated right at sea level. The topography of Redondo and Hermosa rises rapidly just behind and around the AES power plant making it the virtual focal point of a giant natural amphitheater. The visual impacts are substantial.

Figure 6 shows the view of the entrance to Redondo Beach from the north and east:

Figure 6: The AES power plant dominates the entrance to Redondo Beach and King Harbor

The AES plant dwarfs the Redondo Beach/King Harbor gateway sign. Without the sign, visitors would have no clue there is a harbor right behind the power plant.

Figure 7 shows the power plant dominating the view on Harbor Dr. which runs parallel to the harbor:

Figure 7: Power plant gives harbor dirty industrial feel impacting commercial property values and business revenues

Here is a view of Redondo Beach pier showing the power plant dominating an otherwise picturesque view of the pier:

Figure 8: Power plant detracts from view of pier from Veteran's Park and beach

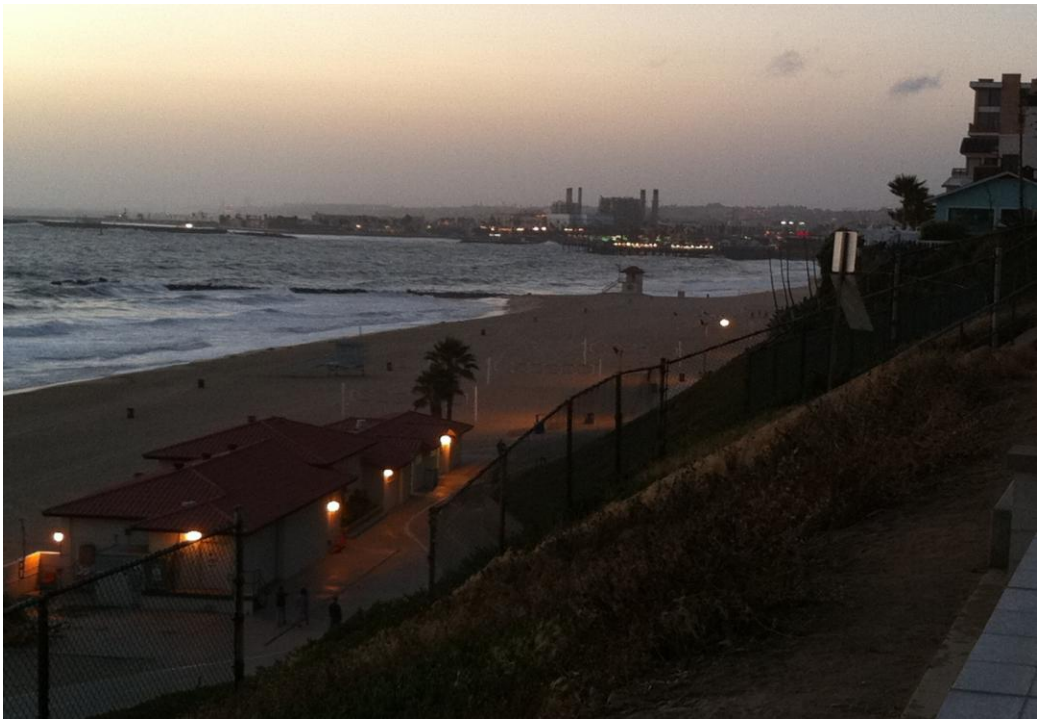

Figure 9: From over 2 miles away, the power plant is far more prominent than the pier and harbor

Here are examples of residential neighborhood views marred by the power plant:

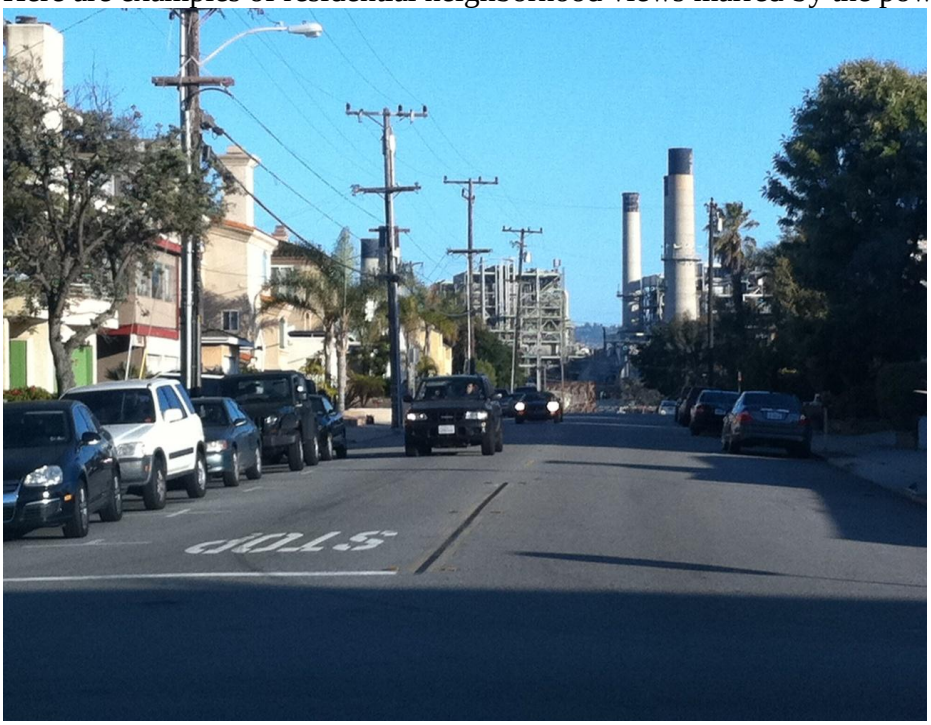

Figure 10: Neighborhood view in Hermosa Beach

Figure 11: View from home on Carnelian shows visual impact of power plant and affect of local topography - residential property values impacted by 28% to 40%compared to equivalent homes elsewhere.

Figure 12: View from residential neighborhood lining Catalina Ave. ½ mile from plant

Figure 13: View from residential neighborhood ¼ mile away

While AES claims their new power plant will be more compact and less visible, if they replace once through cooling, their options include cooling towers and air cooled condensers. Neither of these options are "compact". Figures 14 through 16 show examples of these cooling solutions:

Figure 14: Example of a power plant installing an Air Cooled Condenser – will continue the view impacts of the power plant if used.

Figure 15: Example of power plant cooling towers, tall walls blocking views. SWRCB study estimates height at 58 feet.

Figure 16: Cooling towers in operation – note the impact of the plumes. Plume attenuation increases cooling tower height by at least 15 feet.

The State Water Resources Control Board did an analysis of the alternatives to retiring the once through cooling plants by retrofitting with alternative cooling[10]. Figure 17 shows a graphic from this study depicting the size and tentative placement of the cooling towers required to replace once through cooling with the current turbines/boilers:

Figure 17: SWRCB study shows size and possible placement of cooling towers required to replace ocean water cooling with current turbines.

[10] Coastal Power Plants: Alternative Cooling Analysis, Appendix M. Redondo Beach Generating Station, Tetra Tech

The towers depicted from the SWRCB study would be about 58 feet tall. According to AES the new gas-turbine cycle turbines are more efficient and will require fewer cooling towers. But even if cut to 30% of the depicted cooling towers, the visual impacts are none-the-less substantial and cannot be mitigated.

Additionally, cooling tower plumes would further block views and detract from residential and business property values in the vicinity. Plume attenuation would raise the tower height. According to the SWRCB analysis of the AES site

> *"The site's proximity to existing and future developments, both commercial and residential, would likely require any wet cooling tower to use plume abatement technologies. These towers would occupy a larger footprint than conventional towers and can be taller by 15 feet or more, depending on the various design elements."*[11]

While Air Cooled Condensers would not have the plume problem, they would still represent a view impact and they introduce noise issues discussed in a future section. While AES has recently stated that they will be using Air Cooled Condensers, they have not, as of this date submitted any changes to their plan to reflect this decision.

We could not evaluate the impacts of AES "proprietary" cooling system due to lack of disclosure.

The visual impacts of the current power plant are substantial and widespread. A more compact plant will continue to dominate views throughout Hermosa and much of Redondo. These view impacts would continue to contribute to the negative economic impacts of the power plant.

D. Air pollution impacts

Despite the conversion of AES Redondo from heavy oil to natural gas and the addition of sophisticated air pollution control equipment, AES Redondo still puts out tons of air pollution as demonstrated in Figure 18 which is the emissions report for AES Redondo for 2010.

[11] Coastal Power Plants: Alternative Cooling Analysis, Appendix M.7 Redondo Beach Generating Station, Tetra Tech

Facility INformation Detail (FIND)

Emissions

Facility ID 115536
Company Name AES REDONDO BEACH, LLC
Address 1100 N. HARBOR DR
REDONDO BEACH, CA 90277
Select AER Year: 2010

Criteria Pollutants (Tons per Year):

Pollutant ID	Pollutant Description	Annual Emissions
CO	Carbon Monoxide	106.721
NOX	Nitrogen Oxides	10.684
ROG	Reactive Organic Gases	3.802
SOX	Sulfur Oxides	0.400
TSP	Total Suspended Particulates	1.300

Toxic Pollutants (Pounds per Year):

Pollutant ID	Pollutant Description	Annual Emissions
106990	1,3-Butadiene	0.009
7664417	Ammonia	3102.257
1332214	Asbestos	0.015
71432	Benzene	2.807
50000	Formaldehyde	5.899
91203	Naphthalene	0.490
7440020	Nickel	0.000
1151	PAHs, total, with components not reported	0.162
79016	Trichloroethylene	168.750

Note - Data for 2007 represents the six-month transitional period, July through December 2007, when the rules requiring annual emissions reporting changed from a fiscal year to a calendar year basis.

Figure 18: 2010 SCAQMD emissions report for AES Redondo

Despite its limited run times, this plant is number 98 of the top 100 air polluters in California according to California Watch. It is the largest single source of air pollution in Redondo Beach. The new plant may be more efficient and may pollute slightly less than the current plant, but it is likely to run more frequently. Newer plants that run more still appear in California Watch's Top 100 air polluters list. Several of them fall between rank 20 and 30. In fact, the AES plan clearly states that it requires the same pollutant exemptions that the current plant enjoys. AES is revealing that the plant will still be a heavy polluter.

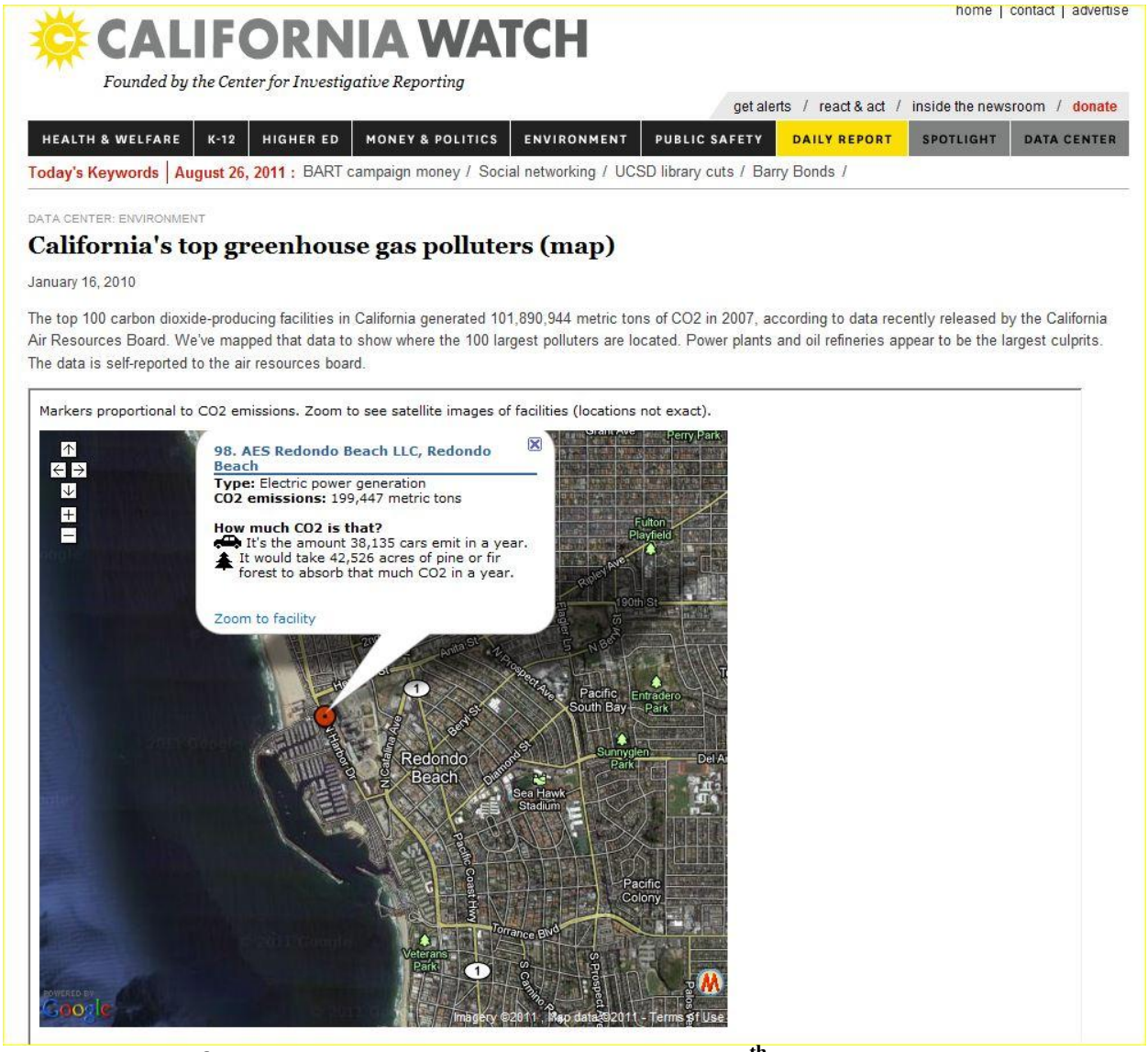

Figure 19: California Watch shows AES Redondo as the 98th biggest green house gas polluter despite its limited run times.

AES recently submitted an environmental impact analysis on their new Highgrove Plant[12]. This new plant should be adequate representation of new power generation facility emissions that can be expected at the Redondo site. The Highgrove is half the capacity of AES Redondo, but it is

[12] AES Environmental Impact Assessment filed for Highgrove power plant, Subsection 8.1: Air Quality

similar in that it runs on call for peak loads and maintenance of other plants. If we double the emissions, since the plant will be twice the capacity, the Particulate Matter less than 10 microns (PM10) produced if the new AES Redondo Plant would run at its recent run rates of 5%, would **be the equivalent of over 121,000 average family cars running for a year**, according to EPA estimates[13]. If it runs at the 60% proposed for the Highgrove plant, that number jumps to the **equivalent of 1.4 million average family cars running for a year**. While AES has been posturing as "clean and green", anyone can see that it may be cleaner and greener, but it is not healthful.

The prevailing winds are from the east to the west. This blows the pollutants from the power plant right across some of the most densely populated neighborhoods on the west coast. The topography of the area moves uphill from west to east. This elevation gain exposes these densely populated neighborhoods to more of the pollutants from the plant. According to the EPA particulate pollution causes or exacerbates respiratory and cardio-pulmonary health issues. Those most susceptible include the young, the elderly, those with respiratory and cardio-pulmonary problems already, and those who work out outdoors. Clearly the densely populated areas surrounding the plant will be subjected to massive amounts of PM10. The Highgrove Plant analysis did not include PM2.5 estimates…these finer particles are even worse. And of course there are huge amounts of other pollutants including carbon monoxide, NOx, and Ammonia that contribute to smog.

In their submitted plans, AES reveals they are concerned with potential new EPA restrictions on PM2.5 particulate emissions.

While the new power plant may be cleaner burning than the current power plant, it will remain Redondo's biggest polluter and will continue to impact the health of residents downwind and uphill from the power plant. Since the power is not required for grid reliability, the air pollution impacts on the community outweigh the benefits of an unnecessary power generation capability.

E. Noise pollution impacts

Redondo's Municipal Code 4-24.301 establishes maximum permissible sound levels by land use. According to the code, the effective level is the level of the "receiver" of the noise. With medium density residential uses the limit is 55 dB and high density residential and commercial uses it is 60 dB during the day and 55dB between 10 PM and 7 AM. The code allows for temporary exceedences, but in no circumstance can the noise exceed 20dB above the limit for the receiving land use. The ordinance also states that if the sound is a steady audible tone or a repetitive noise, then the standards are reduced by 5 dB.

The 2004 Redondo Beach staff report cited the following:

[13] Emission Facts, Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks; EPA Office of Transportation and Air Quality, EPA420-F-05-022, August 2005

"The power plant also harms the public health and quality of life due t…noise (including low frequency noise impacts identified in the 1992 EIR for the General Plan"[14]

In any new plant, the fans and motors of cooling towers and air cooled condensers produce steady noises. Therefore the upper threshold for their noise would be 50dB (55dB minus 5 dB for steady noise) at the property boundaries.

The SWRCB analysis of cooling towers states that

"noise abatement measures would be required, although no measures may be reasonable [sic] *available that will enable any tower to comply with local noise limitations…."* [15]

Air cooled condensers generate similar noise levels and noise attenuation will be a problem in this case as well due to close proximity of incompatible uses at the property boundaries. The standard Air Cooled Condenser generates 55dB of noise at 400 ft from the unit[16].

The compact nature of the AES property, the existence of incompatible uses on AES' property line or across the street from it, the natural amphitheater topography inland of the power plant property, and the number of noise generation sources associated with a power plant, make noise prediction and attenuation very challenging.

If AES repowers using cooling towers or air cooled condensers, the plant will generate noise pollution that is incompatible with surrounding uses and will exceed Redondo noise limits without substantial and costly attenuation mitigations. The difficulty in modeling the complex environmental and the close proximity of the incompatible uses, create a great risk, that despite attenuation attempts, the new plant will still exceed noise limitations.

We could not evaluate the impacts of AES "proprietary" cooling system due to lack of disclosure.

Since this plant is no longer required for grid reliability, the noise impacts on the surrounding incompatible uses outweigh the public benefit of continued power generation at this site.

F. Marine life impacts

Although the plan submitted by AES states that they do not intend to use ocean water for cooling, their recent op-ed articles in local papers and statements made at public meeting indicate they are considering the continued use of ocean water for cooling[17]. Their statements have been very vague; however, they have cited the ruling that they must reduce their consumption by 93%

[14] Staff Report Redondo Beach Planning Department; Amendments to the General Plan, Harbor/Civic Center Specific Plan and Zoning Ordinance for the Coastal Zone, PC-04-40, Agenda Item 15, May 20, 2004
[15] Coastal Power Plants: Alternative Cooling Analysis, Appendix M. Redondo Beach Generating Station, Tetra Tech
[16] "Anatomy of a Quiet Power Plant" Jeff D. Szymanski, August 2010, Noise and Vibration
[17] Redondo Beach Patch; "Op Ed: AES Aims for Greener Future", Jennifer Didlo, Project Development Director, AES Southland,; August 22, 2010

or more.[18] What they have not stated, is that the measurement is by total capacity **not** a reduction from ocean water actually used.

Currently, AES meets the letter of the law in that they run at around 5% of capacity. So their standard for comparison would allow AES to still have the same or worse environmental impact on the ocean compared to their actual impact today.

AES analyzed their current impact based on their actual run times in an appendix to their submitted plant. This report shows substantial impacts with an estimate of over 2.5 billion fish eggs and larvae killed by the power plant even at its limited run rate.[19]

King Harbor, Redondo's small boat harbor, is the major recreational resource used by recreational fisherman. The ecological impacts of the continued use of ocean water for industrial "make up" or cooling will continue to have unacceptable impacts on the environment and on recreational fishing.

If AES proposes and is allowed the continued use of once through cooling, there will be no mitigation to the amount of impact they have today. In other words, the new plant will be no better for the ocean than the current plant.

G. Potable water impacts

According to a recent Department of Energy analysis, the average cooling tower system with CO2 capture for a US natural gas combined cycle power plant the size proposed by AES would use over 7,300 gallons[20] of water per minute to replace water that is lost in the cooling process. If the new plant runs 24 hours per day, that would equate to over 10.6 million gallons of water consumed per day or 3.87 billion gallons of water per year.

In their plan, AES states they intend to use reclaimed/recycled water, but expressed concern that they could not get enough flow of reclaimed water of high enough quality.[21] With the average consumption rate above, it is easy to understand why they are concerned. Currently the only reclaimed water pipe in the vicinity of the power plant is 12 inches or less in diameter and will likely not deliver the flow rate required, which is probably one of the reasons AES the availability of recycled water as a concern.. AES states they would retain their connection to our drinking water system and potentially use this for their "make up" water.

If public drinking water is used to make up the difference in the required water flow rate, the consumption would be a significant impact. Our supply of drinking water is under critical strain already as evidenced by the West Basin Municipal Water District (in which Redondo resides) web page:

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[18] Comment by Jennifer Didlo, Project Development Director, AES Southland at Building a Better Redondo public meeting, July 6, 2011

[19] Implementation Plan Statewide Policy Use of Coastal and Estuarine Waters Power Plant Cooling AES Redondo Beach Generating Station; Appendix A. Redondo Beach Generating Station Clean Water Act Section 316(b) Impingement Mortality and Entrainment Characterization Study; AES Southland LLC, June 16 2011

[20] Power Plant-Water R&D Program; Barbara Carnbey, Thomas Feeley and Andrea McNemar, US Department of Energy/National Energy Technology Laboratory

[21] Implementation Plan Statewide Policy Use of Coastal and Estuarine Waters Power Plant Cooling AES Redondo Beach Generating Station; AES Southland LLC, June 16 2011

"We live in an area with reoccurring droughts that will have more impact in the future due to more people. Our state population continues to grow and it is our families having families, so we must deal with likely water shortages. The state water system that moves water here from northern California was designed to serve 18 million people. Today it serves 37 million people. The hub of the water system, the Bay Delta, is broken and there is no quick solution in sight. There is, and will be in the future, the need to provide water for the environment, further reducing available supplies. Our massive water systems need to be adapted to climate change. Finally, there are challenges on the Colorado River system, our other major source of imported water, and those challenges will only get worse in the future."

Clearly, any AES repower that relies on the use of drinking water supplies for its cooling and industrial processes is a negative impact on our limited water supply.

But even if the AES power plant somehow manages to use reclaimed/recycled water, that is water that could be used elsewhere for purposes that would reduce our current consumption of drinking water supplies… purposes like watering landscaping, supplying existing industrial uses, etc. **Any AES repower that requires a substantial amount of recycled/reclaimed water will have a substantial negative impact on drinking water supplies.**

Recently, AES has stated that they will not use Cooling Towers and will instead use a combination of Air Cooled Condensers (ACC) and ocean water for cooling. This is contrary to their plan, which states they do not propose the continued use of ocean water for cooling. This is also contrary to DOE statistics which show that 0.9% of power plants use ACC or other "dry" cooling systems.[22] AES has proposed cooling towers for their new Highgrove plant as well. While this solution may mitigate the need for substantial fresh water, it does increase other impacts including noise and impacts to ocean life and ecosystems as covered elsewhere. Until AES resubmits a plan stating this new solution, the AES statement is suspect at best.

H. Site Contamination

The current power plant site is contaminated by the years of use as a power generation plant. According to a 2004 City of Redondo report:

"The site is contaminated by fuel-related hydrocarbons including the storage tank areas, fuel pumping area, oil/gas separator area, power generating areas, waste storage areas, switchyard areas and solvent wash area. In addition, a variety of metal and solvent contaminants are present due to leakage from the retention basin areas that collect waste water from the power plant boiler cleaning procedures and from general cleaning wastes at the facility. The soil and groundwater contaminants include arsenic, vanadium, and nickel."[23]

[22] Power Plant-Water R&D Program; Barbara Carnbey, Thomas Feeley and Andrea McNemar, US Department of Energy/National Energy Technology Laboratory

[23] Staff Report; Redondo Beach Planning Department; Amendments to the General Plan, Harbor/Civic Center Specific Plan and Zoning Ordinance for the Coastal Zone, PC-04-40, Agenda Item 15, May 20, 2004

I. Impact summary

The evidence of the substantial impacts of allowing the continued use of the AES site as a power generation facility is overwhelming and compelling. The compactness of the site and the adjacency of incompatible uses make this site inappropriate for continued power generation uses. It is time to shut this plant down for good.

IV. Public opposition

A. Residents

Residents have demonstrated their opposition to power plant on multiple occasions.

In 2005, the City of Redondo Beach held an advisory vote on the future of the AES site. During this vote, Redondo residents voted to replace the power plant with a park.

In 2008, Councilman Brand was elected as the Councilman for the Redondo District that includes the power plant. Councilman Brand was the only one of four candidates who ran on a platform centered on eliminating the power plant. Councilman Brand won by a majority such that a runoff election was not required. The clear mandate from the residents was to rid Redondo of the power plant and its resulting blight.

In 2010 Redondo voters voted for Measure G, which was a zoning change that defined zoning in the harbor area and added park zoning to the power plant site. Many residents have expressed that they felt they were voting for a park at the power plant site, not realizing that voting for Measure G allowed the power plant to continue operations indefinitely. The confusion was caused by the ballot language:

> "Shall the Coastal Land Use Plan and the Zoning Ordinance for the Coastal Zone for the AES Power Plant, the Catalina Avenue corridor and Harbor/Pier areas of the City of Redondo Beach be amended to provide for major changes in existing policies and development standards including: ... **permitting parks on the AES site** ....."

Discussion during the City's approval of this wording a Councilman and the City Mayor expressed concern that people would think they were voting for a mandatory park in place of the power plant.

Recently, BBR members published an online petition for people to express their opposition of a new power plant at the AES Redondo site. **Despite the fact that most residents have not realized that AES even submitted their plan to rebuild, the petition has gathered over 1,200 signatures at the time of this writing.**

B. Environmental Organizations

Environmental organizations have expressed their support for the community's actions to eliminate the power plant including:

- Sierra Club
- Surfrider Foundation South Bay Chapter
- VOICE
- Environmental Priorities Network
- South Bay Parkland Conservancy

V. AES plan inconsistencies

Due to public communication efforts of Councilman Bill Brand and Building a Better Redondo, AES has begun making public statements that are contrary to their submitted plan. The inconsistencies are highlighted in the following table. Until AES submits an update to their plan or other formal documentation, we feel their impacts must be evaluated on formal documents rather than non-binding public comments and marketing.

Topic	Submitted AES Plan	Recent Public Comments
Construction Period	9-10 years	2- 5 years
Use of ocean water cooling	None	Reduced to "less than 90%" of capacity
Plant Demolition	All units in two phases	"Most of current plant"
Power Plant Usage		"would not operate 24/7"
Drinking water use	Use for industrial make up	Not used for industrial make up
Cooling technology	Cooling towers, Air Cooled Condensers or a proprietary system	Air Cooled Condensers

Figure 20: Inconsistency between AES submitted plan and recent public comments

VI. Summary and Conclusions

This report provides substantial evidence that:

1. **The AES Power Plant is no longer required for grid reliability**;
2. **The AES property is now tightly surrounded by incompatible uses**; and,

3. **The continued use of the site for power generation would have substantial adverse economic, environmental and health and welfare impacts** on the City, the surrounding businesses and the residents of Redondo Beach and Hermosa Beach.

It is abundantly clear that power generation at the AES property in Redondo is no longer appropriate.

The people of Redondo Beach and Hermosa Beach, request you consider the impacts to us and our children for generations to come. We hope that you will do the right thing and protect us from the negative impacts of continued power generation at this site. We ask you to reject AES's plan to build a new power plant at their Redondo site.