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14 STATE OF CALIFORNIA
15 State Energy Resources
16 Conservation and Development Commission

17
18 In the Matter of:

Docket No. 06-AFC-06

19
20 **Application for Certification For the**
21 **Eastshore Energy Center**

TESTIMONY OF SUSAN SPERLING ON
BEHALF OF CHABOT INTERVENORS
PERTAINING TO PUBLIC HEALTH AND
ENVIRONMENTAL JUSTICE

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23
24 I am a tenured faculty member of the Chabot-Las Positas Community College District,
25 and have been teaching at the Chabot College campus for twenty-one years, primarily in the areas
26 of biological and cultural anthropology. Also as a biocultural anthropologist and postdoctoral
27 fellow at UCSF, I have researched the relationship between multiple stressors on immigrant
28 communities and health outcomes, and have taught first and second year medical students at

1 UCSF in the CAB Program (Culture and Behavior across the Curriculum) about these. This is
2 now a required element of medical training at UCSF and in it we examine health behaviors and
3 outcomes in the context of ethnicity, race and socioeconomic class. Medical students are referred
4 to a robust body of research indicating, among other things, that the impact of accumulated
5 environmental stresses may have a differential effect on morbidity and mortality in disenfranchised
6 communities when compared to control populations. These stresses include the presence of heavy
7 traffic, air pollution, and industrial plants, among other things. A copy of my curriculum vitae is
8 part of the record of this proceeding and was filed in conjunction with the Chabot Intervenors'
9 Prehearing Conference Statement.

10 I have reviewed the sworn testimony of Dr. Carolyn Arnold, regarding the demographics
11 of Chabot College. As a long-standing member of the Chabot faculty, I am also familiar with the
12 demographics of the College and surrounding community. Chabot Community College is located
13 in a census tract with a highly diverse immigrant, poor and working class population and this is
14 reflected in the demographics of the college itself. I have worked at Chabot with many students
15 who have no reliable access to routine health care and who are confronting a variety of life
16 stresses unknown to young adults in more affluent families. Many young people spend much of
17 the work week, as do many infants and preschoolers (served by Chabot's Early Childhood
18 Center) on the College campus. Faculty and other staff spend up to 40 or more hours a week at
19 the College. So the College community shares with other local communities certain population
20 features as well as risks.

21 I have reviewed the Final Staff Assessment (FSA) in this matter and find significant flaws
22 in the methodology used by staff to analyze Environmental Justice ("EJ") impacts on the
23 surrounding community, including Chabot College. It is my conclusion that these errors make
24 the ultimate conclusions that there are no significant EJ impacts flawed and unreliable.

25 **Failure to Consider the Chabot College Student Community**

26 It is clear from a review of the FSA, that its demographic screening did not consider the
27 presence of approximately 15,000 majority-minority students on the Chabot campus in its EJ
28 analysis. In my opinion, it is appropriate to consider student populations, as well as residential

1 populations in conducting demographic screening and EJ analysis. I am aware that, even without
2 considering the demographics of the Chabot student population, the FSA found that the
3 surrounding community is over 50% minority and therefore conducted a disparate impact analysis
4 in certain areas. However, students have unique vulnerabilities which should have been part of
5 the disparate impact analysis. In particular, a majority of our students are the first in their family
6 to attend a post-secondary educational institution and are at significant risk of dropping out. Any
7 increased stressors increase the risk that they will not continue their education. A thorough EJ
8 analysis would take into consideration the impacts on an educational institution devoted largely to
9 minority and poor students who are seeking an education to break out of the cycle of poverty.

10 **Failure to Recognize Chabot-Las Positas Community College District as an**
11 **Interested Local Agency**

12 As recognized in the FSA, EJ factors include not only the negative environmental impacts
13 on minority and low-income communities, but their equal access to the process for approving
14 power plant sites. It is very troubling that the community of Chabot students—who largely come
15 from minority, low-income and immigrant communities—did not receive the protection and
16 advocacy of their college district. Their greatest opportunity to be heard and have their interests
17 articulated is through the community college. By failing to solicit the required analyses and
18 recommendations from the District, a historically disenfranchised community was relegated to the
19 fringes of this process.

20 **FSA Conclusions Relating to Land Use Compatibility and Traffic/Transportation**

21 The California Government Code at §65040.12 defines environmental justice as “fair
22 treatment of people of all races, cultures and incomes with respect to the development, allocation,
23 implementation, and enforcement of environmental laws, regulations and policies.” (Eastshore
24 FSA, 2007, 2-4) In reviewing 11 areas of potential concern regarding environmental justice
25 raised by the proposed Eastshore Project, CEC staff found only two requiring “environmental
26 justice screening”: Land Use and Traffic, and Transportation. In each of these two areas
27 however, staff set aside environmental justice concerns because they concluded that potential
28 adverse public health and other effects would have no differential impact on populations by race,

1 ethnicity or socioeconomic class (Eastshore FSA 2-4.) Thus, while acknowledging that “A greater
2 than 50% minority and low-income population have been identified within a one-mile radius of
3 the Eastshore site” (FSA, 1-5), CEC staff does not find significant issues of environmental justice
4 posed by the proposed Eastshore development. For the reasons discussed below, this analysis is
5 flawed because it incorrectly assumes that different populations experience environmental
6 impacts in the same way.

7 **FSA Conclusions that Eastshore Does Not Present Health Risks to Poor and**
8 **Minority Communities**

9 The FSA Public Health section prepared by Dr. Greenberg (4.7-1), evaluates potential
10 public health risks posed by the project and “does not expect there would be any significant
11 adverse cancer, or short or long-term non-cancer health effects from the project”, and that
12 “emissions from Eastshore would not contribute significantly to morbidity or mortality in any age
13 or ethnic group residing in the project area.” For the reasons discussed below, this conclusion is
14 also flawed, as it fails to consider public health concerns particular to minority and low-income
15 communities. The FSA indicates that its analysis accounted for impacts on what it describes as,
16 “the most sensitive individuals in a given population, including newborns and infants,”
17 However, this methodology is inadequate, as there is no indication that it considered the unique
18 vulnerabilities of poor and low-income residential and student communities.

19 **Methodology Concerns**

20 There are a number of lines of evidence not considered by CEC staff that call into
21 question staff conclusions regarding potential environmental justice impact and public health. In
22 drawing these conclusions, CEC staff have not considered a body of emerging relevant theory and
23 data from public health/epidemiological disciplines examining the particular susceptibilities of
24 low-income and minority populations to multiple stressors in the physical, economic and social
25 environments. Conditions such as low birth weight, hypertension, cardiovascular disease and
26 asthma pose problems in many low-income communities (Committee on Population, 2007;
27 O’Neil et al.,2003). Low birth weight alone appears to predispose individuals to greater
28 vulnerability to environmental stress over the entire lifespan (Barker, 1998). These and other

1 emergent data require that we redefine what constitute acceptable levels of air pollution for
2 particular communities.

3 As CEC staff consultant Dr. Greenberg acknowledges in the FSA “Exposure to multiple
4 toxic substances may result in health effects that are equal to, less than, or greater than effects
5 resulting from exposure to the individual chemicals. Only a small fraction of the thousands of
6 potential combinations of chemicals have been tested for the health effects of combined
7 exposures.” (Eastshore FSA, 4.7-6) Clearly the area of multiple toxics exposure is in an early
8 stage of science. In light of this fact, the emerging data on higher susceptibilities of vulnerable
9 populations must be reviewed by the CEC for an impartial and fair analysis of these important
10 issues, and as mandated by CEC rules and procedures.

11 CEC staff analysis also does not adequately take into account the potential cumulative
12 impact of siting a second new power plant in a community already at heightened risk (see
13 below), and heavily impacted by exhaust from diesel truck traffic in the immediate vicinity of the
14 College and the plant(s). As the FSA makes clear, the demographics of the relevant surrounding
15 area raise potential issues of environmental justice if air quality is affected by the proposed siting
16 of the Eastshore Project. Recent research indicates that acceptable thresholds for pollutants may
17 vary, depending upon demographics and accumulated stresses. Thus, a threshold that applies to a
18 socioeconomically privileged demographic may differ for disenfranchised communities. This fact
19 is simply not addressed anywhere in the FSA.

20 A Report of the Public Law Research Institute at UC Hastings College of Law,
21 Opportunities for Environmental Justice in California, Agency by Agency (Auyong, 2003) raises
22 some similar issues in CEC processes of analyzing environmental justice concerns:

23
24 In attempting to integrate environmental justice concerns into this
25 process the CEC focuses on three issues: demographics, public outreach,
26 and impact assessment.First the CEC examines the demographic nature
27 of the potentially “affected area”, i.e. within a six-mile radius of the
28 proposed facility, or a more precise area when feasible. The criteria for
what makes an area “affected” include air quality, water, visuals, traffic,
public health, and noise effects. If “minority” or “low-income” individuals
comprise over 50% of the population in this “affected area”, than an
affected minority and/or low-income population is found. This finding,

1 presumably, is the threshold for the CEC to determine that environmental
2 justice is possibly implicated in the matter.

3 The assumptions underlying this finding, however, are debatable.
4 For example, the determination of the affected area appears to consider
5 only the additional impact of the power facility, not the cumulative impact
6 of the facility with other existing conditions that affect air quality, water,
7 public health, etc., in this area. (emphasis mine.).

8 The Hastings Report concludes that the CEC appears to be making a good faith effort to
9 address certain environmental justice issues in the licensing of power plants, but that “Whether
10 these efforts are sufficient is open to debate.” (Auyong, 2003) The Report raises the following
11 questions about CEC processes of considering environmental justice (pp. 19-25.):

- 12 • Are the public hearings merely informational, or are comments truly welcome?
- 13 • Have the important decisions already been made prior to any public
14 announcements or hearing?
- 15 • Are cumulative and indirect impacts taken into full consideration and how?
- 16 • Does current and future policy take adequate account of history of the proximity of
17 many power facilities to minority and/or low-income communities?

18 The Report concludes that the CEC is mandated to assess trends in energy consumption
19 and to “analyze the social, economic, and environmental consequences of these trends.” (Public
20 Resources Code 25216a) and that “Having pertinent data is an essential requirement to identify,
21 evaluate and, where appropriate, act on or dispel, environmental justice concerns.”

22 The Hastings Public Law Research Institute is not alone in raising questions about the
23 CEC’s current methodology in assessing environmental justice issues. The Latino Issues Forum’s
24 Report on California Energy Planning (2001) addresses concerns that: “...the State of
25 California’s rush to build gas-fired power plants as a solution to the energy crisis (is) at odds with
26 its mandates to protect public health, the environment, and insure environmental justice for
27 people of color and the poor. “ The study examines 18 power plant projects, 17 of which are
28 peaker plants, (for which specific location data were available to the public at the CEC web Site
as of June 30, 2001.) The study concludes that “the majority of power plants considered by the
CEC are planned for or being built in neighborhoods populated by people of color---especially

1 Latinos and African Americans.” The report proposes that, in light of these data, the Governor
2 and Legislature should place a moratorium on all present and future gas-fired generation
3 development until the CEC completes “full and detailed environmental justice impact analyses
4 and comprehensive environmental reviews of existing and proposed energy facilities.”

5 Clearly, there is significant debate in legal and other interested communities about the
6 current CEC approach to environmental justice concerns and these debates also provide a context
7 for my testimony.

8 Biocultural Factors: The Differential Impact of Cumulative Stress in low-income and
9 Underserved Communities

10 The Committee on Population (CPOP) of the National Academy of Sciences defines stress
11 as “environmental demands that tax or exceed the adaptive capacity of an organism, resulting in
12 biological and psychological changes that may be detrimental and place the organism at risk for
13 disease or disability (Cohen et al., 1998). The hypothesis that “greater exposure to stress over the
14 life course increases susceptibility to morbidity and mortality among members of minority groups”
15 is well supported by data from many reliable epidemiological studies both here and abroad.

16 For example, British researcher Dr. Andrew Steptoe of the Department of Epidemiology
17 and Public Health at University College, London studied residents of 18 higher SES
18 neighborhoods and 19 low SES neighborhoods (Steptoe et al., 2001). The study concluded that
19 high levels of noise, smells, and fumes from industrial plants in poorer neighborhood were
20 associated with “poorer self-rated health, psychological distress and reduced ability to carry out
21 activities of daily living.” (Interestingly Steptoe et al. found no association between neighborhood
22 and different levels of smoking, diet or alcohol consumption or physical activity, suggesting that
23 the environmental factors associated with poorer neighborhoods may act as independent
24 stressors.)

25 The Eastshore FSA notes that asthma rates vary by race/ethnicity in Alameda County,
26 with African Americans experiencing over twice the rate of asthma as non Hispanic whites.
27 Public health research in numerous studies has demonstrated the prevalence of asthma at
28 epidemic levels among minority populations in California and elsewhere. Given the apparent

1 greater susceptibility of certain groups to environmental stressors, including pollution, a uniform
2 “acceptable level” of plant emissions may not apply to such populations. Risk factors may accrue
3 in logarithmic progressions rather than additively. Again, research on the prevalence low birth
4 weight in low-income communities (Barker, 1998) suggests that this factor alone can lead to
5 greater effects from cumulative environmental challenges and higher morbidity and mortality at
6 every life stage. The Eastshore FSA acknowledges “It is evident that further research is needed to
7 definitively link emissions from gas-fired plants as a cause or exacerbation of asthma (FSA: 4.7-
8 15). Given this fact, how then can we know, as stated two pages later, that “All impacts at all
9 receptors, including sensitive receptors such as schools, would be below the level of significant
10 impact.” (FSA: 4.7-17) What is an acceptable level of emissions from a second gas-powered plant
11 near communities with potentially heightened susceptibilities, given that by CEC staff’s own
12 admission, further research is needed to establish a linkage between such emissions and asthma?

13 Yet, even without definitive data on such, we know quite a lot about populations at risk
14 and the environmental hazards they tend to confront. According to the U.S. National Academy of
15 Sciences Understanding Racial and Ethnic Differences in Health in Late Life: a research agenda
16 (2004) “A considerable body of evidence has established that individuals of low socioeconomic
17 status are more likely to suffer from disease, to experience loss of functioning, to be cognitively
18 and physically impaired, and to experience higher mortality. The influence of socioeconomic
19 status on health is assumed to begin in the prenatal environment and continue through life.
20 Parents’ socioeconomic status affects childhood conditions, such as exposure to toxins and
21 infectious agents. These conditions affect health immediately and possibly for years afterwards,
22 the effects being only partly moderated by later changes in status...”

23 Recent data indicate that the interaction between socioeconomic status and air pollution in
24 low-income communities is not just additive. Such emissions as produced by a natural gas-
25 powered plant may have a greater impact on the health of working class and low-income
26 communities. . A study by O’Neil et al. (2003) in the journal Environmental Health Perspectives
27 notes that groups with lower socioeconomic status may receive more exposure to air pollution,
28 and that such groups have already experienced greater material deprivation, less consistent access

1 to health care and greater psychosocial stress, and may therefore be more susceptible to the health
2 effects of air pollution. Because of this mix of greater susceptibility and greater exposure to air
3 pollution, such populations are apt to suffer differential and worse health effects from the
4 presence of pollution plants than more economically privileged communities. These include
5 reduced life expectancy, poorer birth outcomes and higher rates of asthma and cardiovascular
6 disease.

7 In conclusion, I am confident that a more thorough review by CEC staff of relevant
8 research on the potential adverse effect of the proposed siting of the Eastshore Project will indeed
9 raise issues of environmental justice. The many low income, immigrant and minority
10 communities served by the College are at potentially increased risk of suffering negative health
11 impacts. It is incumbent upon us as an academic community to bring to your attention the most
12 current, valid and heuristic science to consideration of these crucial issues.

13 I declare under penalty of perjury under the laws of the State of California that the
14 foregoing is true and correct and that this declaration was executed on December 6, 2007 at
15 Hayward, California.

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17 _____
Susan Sperling

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