

# Renewable Energy Development

Promoting new renewable energy development on degraded lands for health & climate benefits



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# Mapping project of CA degraded sites with National Renewable Energy Laboratory (NREL)

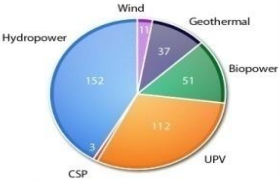
11,000 sites screened for RE potential  
Results to go next month



## California Contaminated Sites

- Contaminated Site
- High Potential Site**
- CSP
- Geothermal
- Wind
- Biopower
- Utility-scale PV
- Hydropower
- Lake
- National Park
- Urban Area
- Road
- Interstate
- Highway
- Street
- Transmission Line
- 345 - 500kV
- 230 - 345kV
- <230kV

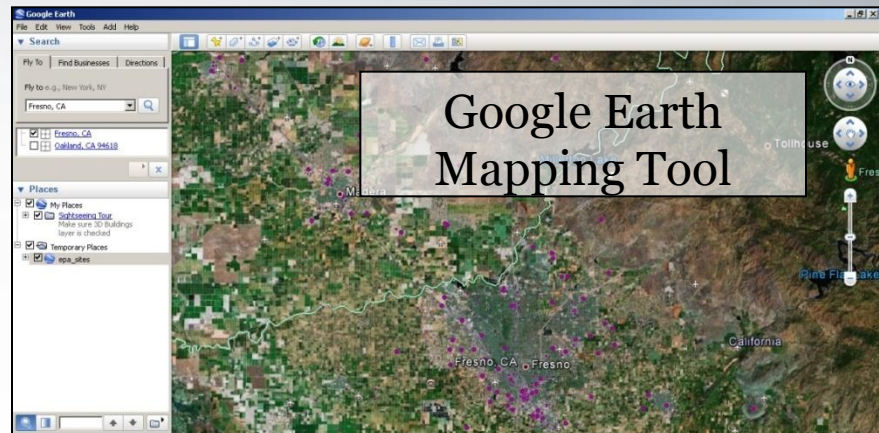
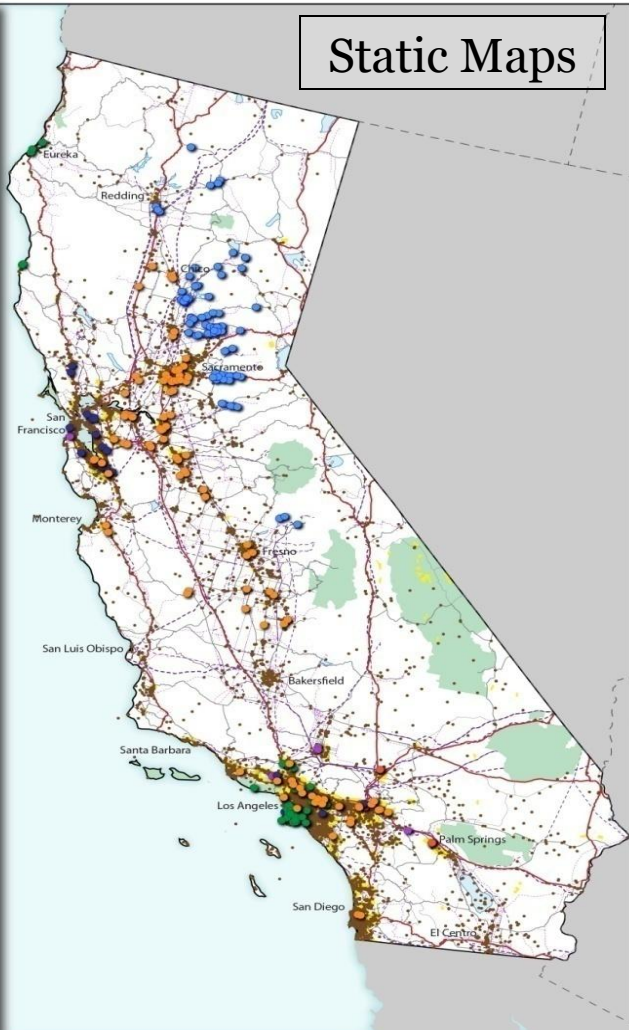
Number of High Potential Sites



Date: 2-7-2012  
Author: Anthony Lopez  
Sources: NREL, EPA, Natural Earth, HSP  
This map was produced by the National Renewable Energy Laboratory for the US Department of Energy



## Static Maps



Microsoft Excel spreadsheet showing data sets for EPA and NREL generated attributes.

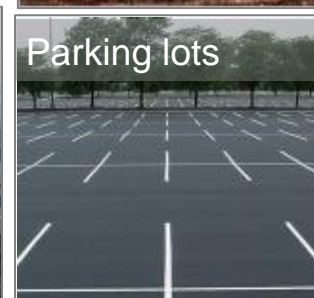
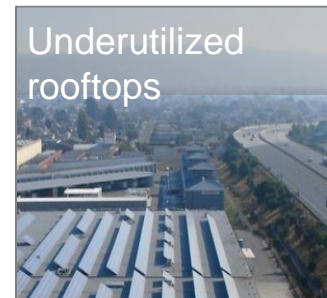
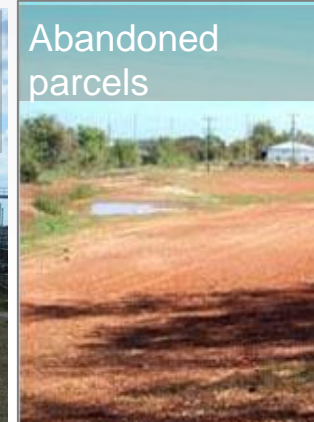
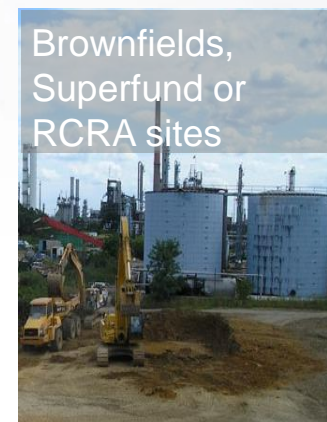
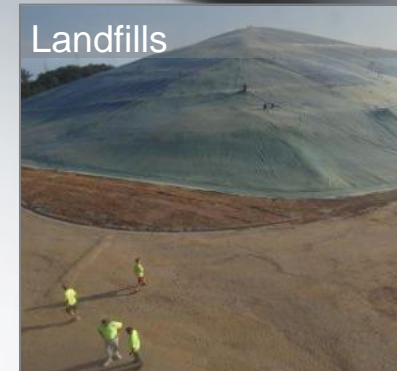
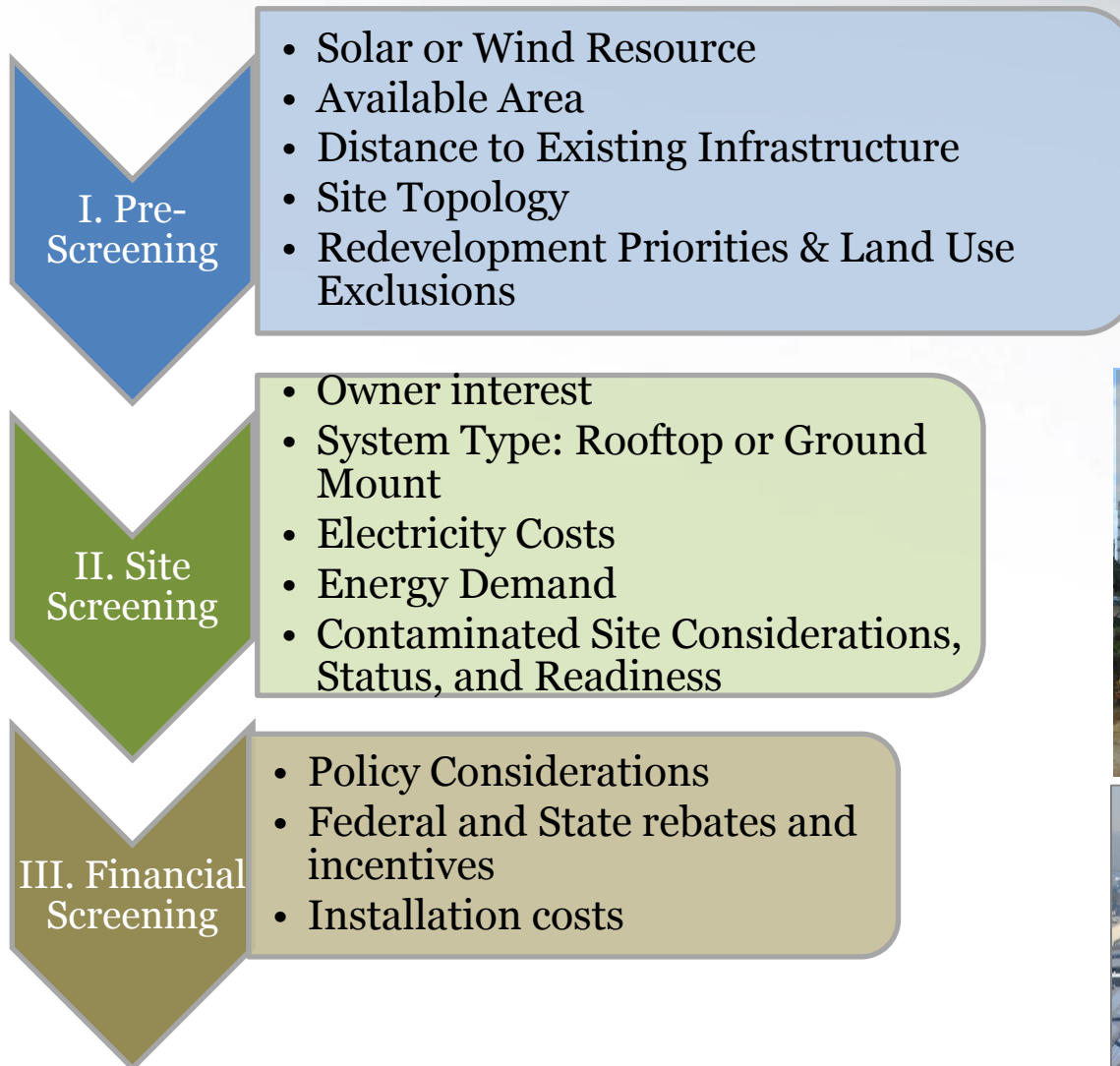
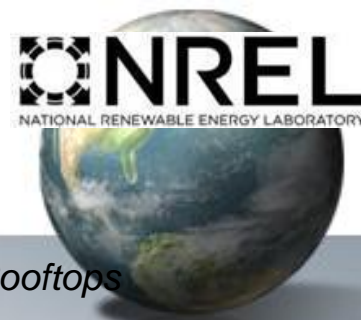
EPA Generated Attributes		NREL Generated Attributes				
	name	address	city	state	zip	county
4		1400 126/132/138/144/150 West Guinda La	Anaheim	CA	92805	ORANGE
5	'DRY CLEAN FOR LESS' FACILITY (FORMER)	1704 NEWPORT BLVD.	COSTA MESA	CA	92627	ORANGE
6	(CAFS) COMMUNITY FAC		Cambria	CA	0	SAN LUIS OBISPO
7	(CAFS) FAMILY HOUSING		Cambria	CA	0	SAN LUIS OBISPO
8	(CAFS) HEARST RANCH AIRFIELD		San Simon	CA	0	SAN LUIS OBISPO
9	(CMAFP) SCHOOL DISTRICT		Costa Mesa	CA	0	ORANGE
10	(CMAFP) CITY COSTA MESA		Costa Mesa	CA	0	ORANGE
11	(CMAFP) SANTA ANA AIRUG		Santa Ana	CA	0	ORANGE
12	10 ACRE ELEMENTARY	Sharon Avenue/Fine Avenue	Modesto	CA	95355	STANISLAUS
13	10 ACRE ELEMENTARY NO. 9 SITE	Kodiak Drive/Fine Avenue	Modesto	CA	95357	STANISLAUS
14	1010 Runnymede	1010 Runnymede	East Palo Alto	CA	94033	SAN MATEO
15	1028 HOWARD STREET	1028 HOWARD STREET	SAN FRANCISCO	CA	94109	SAN FRANCISCO
16	1031 Arden Way	1031 Arden Way	SACRAMENTO	CA	95825	SACRAMENTO
17	1059 Detroit Avenue	1059 Detroit Avenue	Concord	CA	94518	CONTRA COSTA
18	1146-1160 Mission Street	1160 Mission Street	San Francisco	CA	94103	SAN FRANCISCO
19	1171 Ocean Avenue	1171 Ocean Avenue	Oakland	CA	94608	ALAMEDA
20	11TH & Q		San Diego	CA	0	SAN DIEGO
21	11TH NAVAL DIST HQ & SUP		Imperial	CA	0	IMPERIAL
22	11TH ND BOMBING TARGET		Fort Irwin	CA	92310	SAN BERNARDINO
23	12.5-ACRE PROPERTY SCHOOL SITE	Barstow Road/Omaha Beach	FRESNO	CA	93744	FRESNO
24	1310 OLIVE CORP AKA BUCKNER, INC.	P. O. BOX 4376	Los Angeles	CA	90025	LOS ANGELES
25	12210 1/2 Nebraska Avenue Property	12210 1/2 Nebraska Avenue	San Francisco	CA	94124	SAN FRANCISCO
26	1228 Underwood Avenue Site	1228 Underwood Ave.	Manito Park	CA	94025	SAN MATEO
27	1258 El Camino Real	1258 El Camino Real	San Francisco	CA	94103	SAN FRANCISCO
28	1298 Howard Street	1298 Howard Street	San Francisco	CA	94103	SAN FRANCISCO
29	13.51 ACRE SCHOOL SITE	Amethyst Road/Seneca Road	Victorville	CA	92392	SAN BERNARDINO
30	1327 Archer Street	1327 Archer Street	San Luis Obispo	CA	93401	SAN LUIS OBISPO
31	1345 Turk Street	1345 Turk Street	San Francisco	CA	94102	SAN FRANCISCO
32	14 East 25th Ave	14 East 25th Avenue	San Mateo	CA	94403	SAN MATEO
33	1500 Q STREET SITE	1500 Q STREET	SACRAMENTO	CA	95814	SACRAMENTO
34	1536 THIRD STREET	1536 THIRD STREET	OAKLAND	CA	94607	ALAMEDA
35	1558-16TH AVENUE	1558 16TH AVENUE	SAN FRANCISCO	CA	94122	SAN FRANCISCO
36	15TH STREET ELEMENTARY SCHOOL ADDITION	Pacific Avenue/West 16th Street	San Pedro	CA	90731	LOS ANGELES
37	15TH STREET MIDDLE SCHOOL	15th Street/Highway 86	Imperial	CA	92251	IMPERIAL

## Data Sets

# Solar & Wind Decision Trees

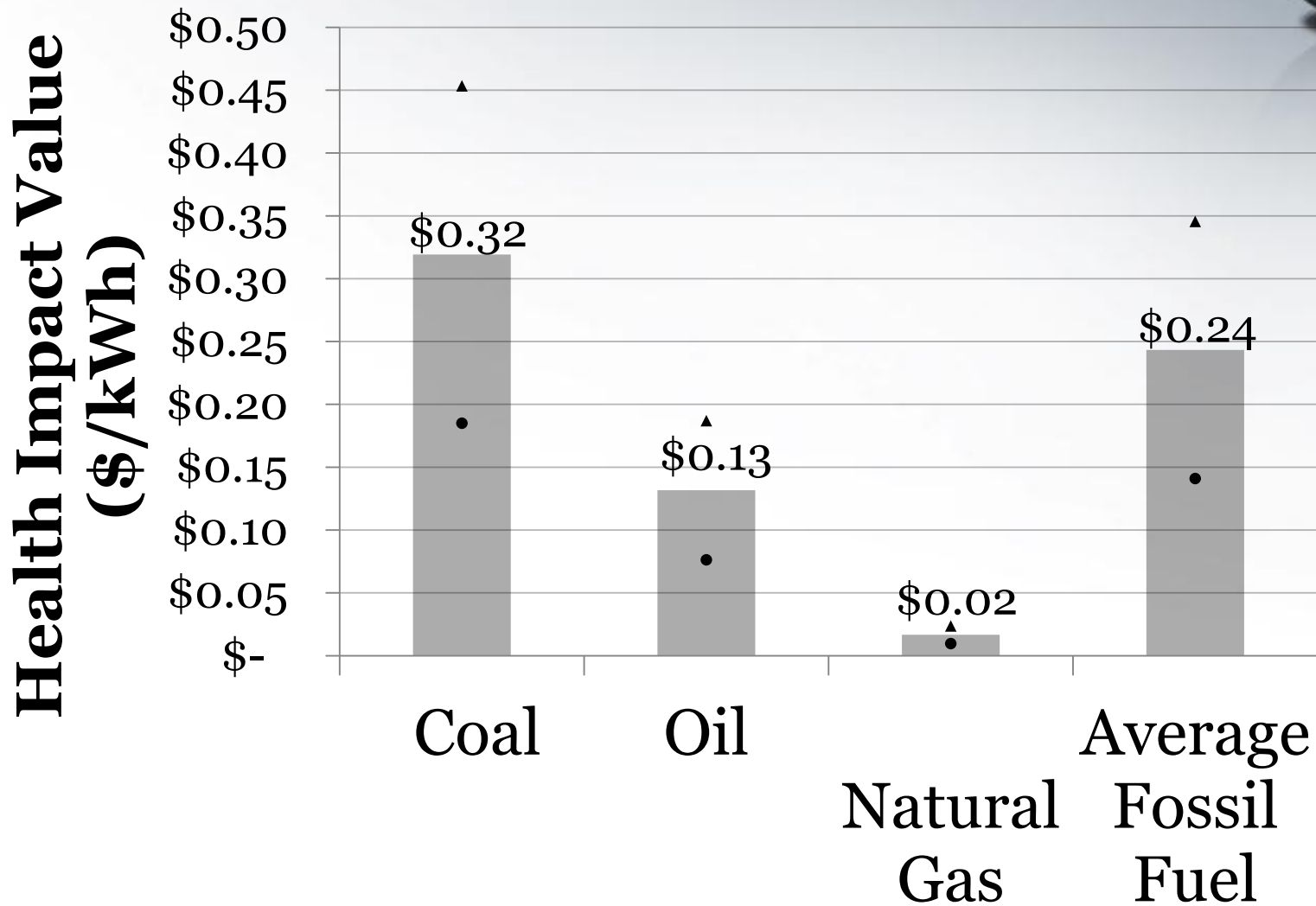
## Screening Sites for Solar PV or Wind Energy Potential

*Emphasis on Redevelopment of Potentially Contaminated Sites, Underutilized Sites, or Rooftops*





# National Average Cost of Fossil Fuels is \$0.24/kWh



# Example Application



- California, 100,000 kWh needed
  - Grid Power: \$0.125/kWh
  - 100% Renewable Energy: \$0.01/kWh premium, \$0.135/kWh
- Health impacts : 100,000 kWh x \$0.03/kWh = \$3,000

	Grid	Renewables
Base Cost	\$12,500	\$13,500
Health Adder	\$3,000	\$0
<b>TOTAL</b>	<b>\$15,500</b>	<b>\$13,500</b>

*The average US homeowner would be saving \$240/yr in health impacts by buying renewables*



# California Imported Electricity increases \$/kWh by 5-fold

