MAKING THE CONNECTION

HOW MUNICIPAL RENEWABLE ENERGY UTILITIES CAN TRANSFORM LAND USE POLICIES

MUNICIPAL RENEWABLE ENERGY UTILITIES
Local utility districts that produce their own power through renewable energy infrastructures

REVENUE GENERATION
Once renewable power production exceeds demand, excess power can be sold back to the grid.

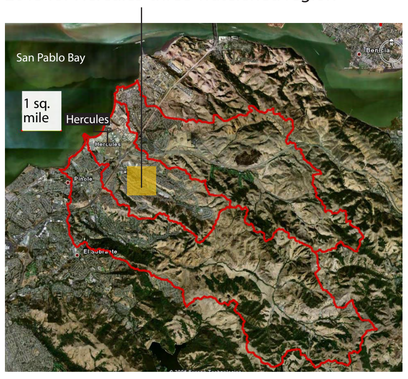
FLEXIBILITY FOR LAND USE DECISIONS
With new profits flowing into local general funds, California municipalities can reduce their dependence on sales tax revenue from large footprint retail developments.

A CASE STUDY HERCULES MUNICIPAL UTILITY

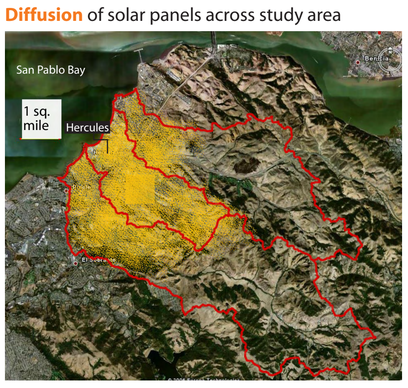
Keys to reshaping an existing local power district in the East Bay into a producer and seller of renewable energy

ANALYZE SPATIAL POTENTIAL FOR RENEWABLE ENERGY PRODUCTION

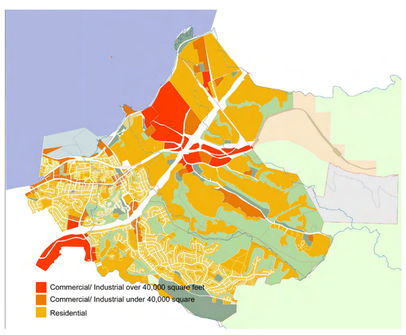
256 acres of solar panels (0.4 square miles) will provide enough electricity to meet demands in 2015 for Hercules' three-watershed region



Diffusion of solar panels across study area



Final phasing of solar PV panel implementation in 2035

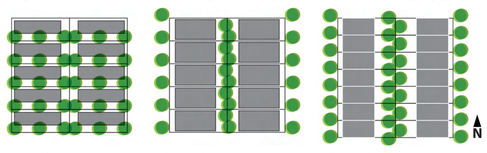


LINK RENEWABLE PRODUCTION TO LAND USE, DENSITIES AND LOT COVERAGE

RESIDENTIAL USE
Density:
10 units per acre
Single family homes, uniform heights
Average Consumption:
2,186,528 kWh/yr
Lot coverage (70 %):
12,629 ft²
Energy Production:
1,366,560 kwh/yr
Surplus Energy produced: **36%**

(not including conservation)

RESIDENTIAL PLANNING AND ITS LINK TO SOLAR PV ENERGY PRODUCTION



10 units per acre
70% lot coverage
Minimized solar access

10 units per acre
70% lot coverage
Maximized solar access

15 units per acre
50% lot coverage
Maximized solar access

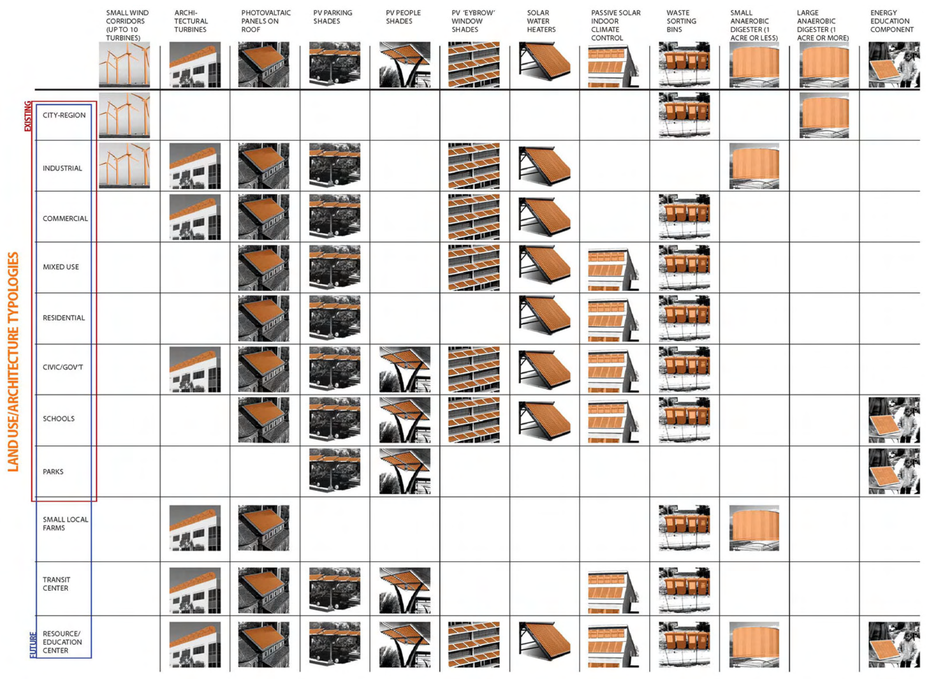
COMMERCIAL USE
Building footprint:
70,000 ft²
Average Consumption:
2,186,528 kWh/yr
Lot coverage (80 %):
9,850 ft²
Energy Production based on Suitable Rooftop Area:
1,366,560 kwh/yr
% of Energy Consumption Met by Solar: **62%**

(not including conservation)

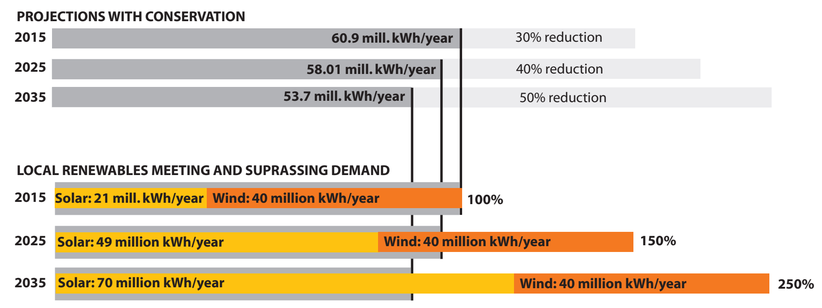
CIVIC USE
Building footprint:
12, 312 ft²
Average Consumption:
29,013 kWh/yr
Suitable Rooftop Area (80 %): **9,850 ft²**
Energy Production based on Suitable Rooftop Area:
240,462 kwh/yr
% of Energy Consumption Met by Solar: **82%**

(not including conservation)

DEVELOP RENEWABLE ENERGY PRODUCTION PATTERNS BASED ON LAND USE TYPES



CONSERVATION STRATEGIES FACILITATE LOCAL ELECTRICITY PRODUCTION SURPLUS, WHICH CAN BE SOLD BACK TO THE GRID



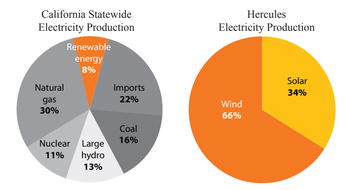
EMPHASIZE RENEWABLES TO CUSTOMERS (SAMPLE BILL)

HERCULES MUNICIPAL UTILITY
INDEPENDENT. RENEWABLE

Conservation: Where You Stand
HMU customers have met 80% of their potential energy conservation.
You have met 85% of your efficiency potential, resulting in a $20 savings this month.

Renewable Energy Incentives
HMU continues to provide incentives for customers who wish to install renewable energy production at their home or business. Visit the resource center this Saturday for a how-to session on photo-voltaic panel installation.

Hercules Leading the Way on Renewables



STATEMENT FOR PERIOD ENDING 1/31/2025

MEMBER 12094837
JANE REDDY
124 REDWOOD WAY
HERCULES, CA 94547

ELECTRIC SERVICE

DATES
1/1/2025—1/31/2025

AMOUNT DUE
$32.25

AMOUNT ENCLOSED

PREVIOUS BALANCE
$34.52
PAYMENT RECEIVED
THANK YOU

LAND-USE TRANSFORMATIONS

With new monies in municipal funds, cities gain flexibility to implement policies that are not beholden to generating sales tax revenues from large footprint land uses.

Additional revenues can stabilize municipal budgets and allow greater leverage in land use negotiations, enabling more compact, sustainable development.

Additional revenues can help initiate funding for projects that contribute to the reinvestment in low impact, energy-producing development.

Additional revenues can fund infrastructure improvements that will enhance the municipality's sustainable efforts by reducing its ecological impacts.

Additional revenues can fund conservation efforts. Land use negotiations leveraged by fund stability can create a greater presence for conservation at the planning level.

Sources: Research conducted as part of studio course (LA 201: Ecological Factors in Landscape Architecture) by Andrea Gaffney, Tim Mollette-Parks, Maya Baraona, Erin O'Mahoney Cubbison, Nicholas Curtis, Robert D. Lemon, Francesca Francia, Chris Fullmer