MEETING OUR FUTURE ENERGY NEEDS

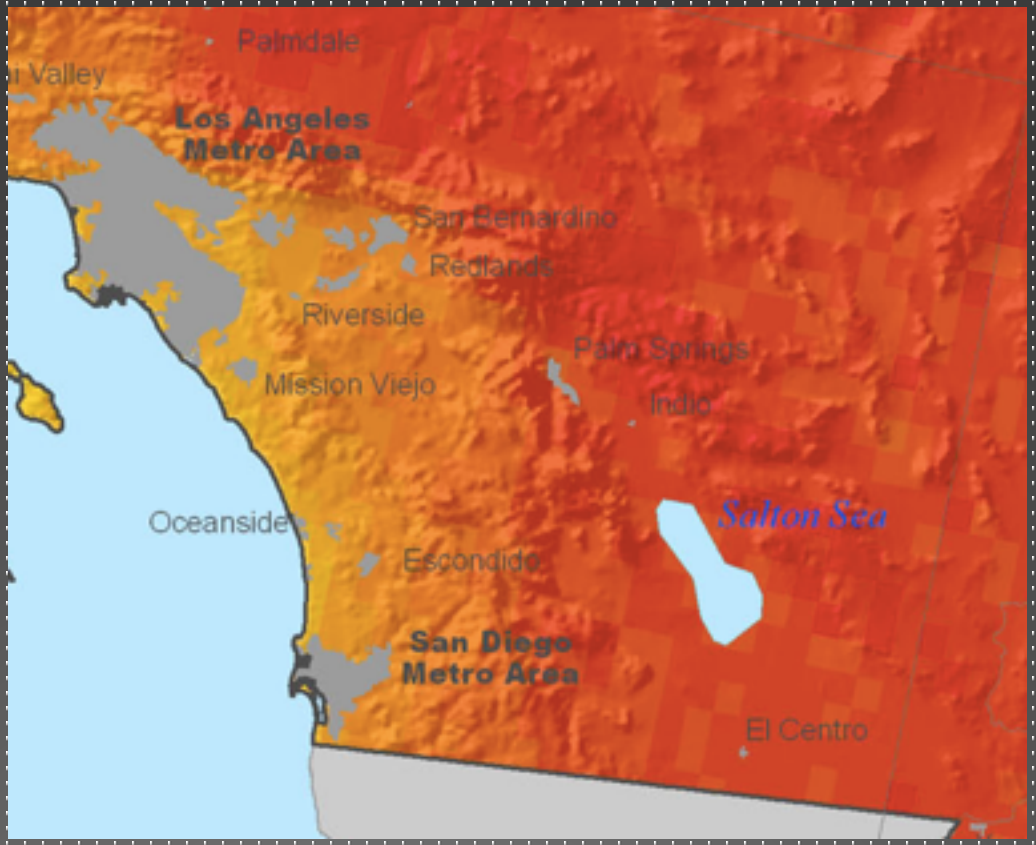
Exploring the Potential of Solar Energy Production

Joshua Basin Water District

WHY CONSIDER SOLAR

Area of high exposure to the sun

Solar facilities are highly efficient generating more power than in other areas



WHY CONSIDER SOLAR

- Electricity is Our Single Biggest Ongoing Operating Cost
  - Used 2,456,532 kWh in 2016
  - At a cost of $378,960.00
  - Cost of renewables has been steadily dropping and is competitive with fossil fuels
- Savings to the District (at a time when costs are rising)
  - Rate stabilization – Southern California Edison rates will continue to rise, a solar facility would fix rates
  - Substantial savings to our customers over the life of the project

WHY CONSIDER SOLAR

- Fighting Climate Change
  - Affects all of our lives
  - Threatens the future supply of the water we need to import to stabilize and restore our aquifer
  - Means warmer temperatures in the desert which could lead to more water consumption

A reduction of approximately 3,000,000 pounds of carbon dioxide emissions into the atmosphere each year!

WHY CONSIDER SOLAR

- Meeting California's Renewable Energy Goals
  - 2002: Senate Bill 1078 establishes the RPS program, requiring 20% of retail sales from renewable energy by 2017.
  - 2011Senate Bill X1-2 33% Renewables by 2020
  - 2015 Senate Bill 350 – 50% by 2030

SOLAR FARM

Energy Requirements

- The District would need to generate approximately1.5 megawatts of energy per year to offset its energy use
- A ground mounted system of photovoltaic solar panels is envisioned and possibly panels on shade structures

SOLAR FARM

Size and Cost of a Solar Facility

- A one megawatt facility requires a 4.5 to 5 acres, a relatively small amount of land
- Construction costs vary but they could be about 3 to 3.5 million per megawatt
- Annual maintenance would be about one to three percent of of the initial construction cost

SOLAR FARM

Location and Energy Use

- The District would work with a consultant and the community to locate solar facilities where impacts to the desert and the community would be minimized
- The solar facility would directly benefit the community
  - The energy generated would be used to reduce the cost of the electricity used to obtain and deliver water to the community

FINANCING A SOLAR PROJECT

- Feasibility and scoping grants for up to $20,000 are available from the California Energy Commission Energy Partnership Program
- One percent loans are available to special districts from the California Energy Commission Energy Efficiency Financing Program
  - 6 to 7 million dollars available per year
  - Loans up to 3 million dollars – a phased project
  - Loan payments are based on monthly energy savings minimizing costs during the payback period

SAVINGS TO THE DISTRICT – CASE STUDIES

- Eastern Municipal Water District – 5 Megawatt Project
  - Estimated annual cost savings of 1.7 million dollars per year
  - Estimated 20-year cumulative savings of 37.7 million dollars

  Their program took advantage of California Solar Initiative incentives of 6.1 million dollars which may not be available, so the savings may be higher per megawatt than the District would realize.

- Indian Wells Valley Water District – 2 Megawatt Project
  - Expected savings of 9.8 million over the life of the project

SUMMARY

Benefits of Renewable Energy

- Rate stabilization and substantial savings to the District over time
- Reduction in greenhouse gasses contributing to climate change
- All of the District's energy needs could be met in a relatively small solar facility footprint

Planning and Construction is Supported by the California Energy Commission

- $20,000 dollar planning grants are available
- One percent financing of facilities is available and potentially other incentives as well