



POWERBUTTE
A Place for Clean Energy

BUTTE

UTILITY-SCALE SOLAR GUIDE

POWERBUTTE
A Place for Clean Energy



BUTTE

UTILITY-SCALE SOLAR GUIDE

SEPTEMBER 26, 2017

This Guide was prepared through the Sustainable Communities Planning Grant and Incentives Program administered by the Department of Conservation.

This Document was Prepared By:



1625 Shattuck Avenue, Suite 300
Berkeley, California 94709
510.848.3815

Butte County Board of Supervisors

Bill Connelly, Chair, District 1

Larry Wahl, District 2

Maureen Kirk, District 3

Steve Lambert, District 4

Doug Teeter, District 5

Butte County Planning Commission

Larry Grundmann

Mary Kennedy

Jacquelyn Chase

Rocky (Daniel) Donati

Philip John, Chair

Acknowledgements

Butte County

Tim Snellings, Director of Development Services

Pete Calarco, Assistant Director of Development Services

Charles Thistlethwaite, Planning Division Manager

Dan Breedon, AICP, Project Manager

Jim Aranguren, Program Manager, Information Systems

Lacey Sanders, Information Systems Analyst, Senior

Consultant Team

PlaceWorks

Joanna Jansen, AICP, LEED AP, Principal-in-Charge

Tanya Sundberg, Project Manager

Janet Chang, AICP, Assistant Project Manager

Eli Krispi, Associate

EES Consulting, Inc.

Gary Saleba, President/CEO

Ted Light, Project Manager

Ryan Ramos, Principal Consultant

Ben Noble Planning

Ben Noble, City and Regional Planning

Table of Contents

Chapter 1: Welcome	1
Purpose and Use of this Guide	2
Butte County Context	3
Public Outreach	4
Guiding Principles	5
Chapter 2: State & Local Context	7
PowerButte	7
Renewable Energy in California	9
Renewables Portfolio Standard	11
The Future of Renewable Energy in California	11
Renewable Energy Projects in Butte County	12
Chapter 3: Development & Design Guidelines	13
Siting	14
Design	21
Construction	29
Operation & Maintenance	33
Decommissioning	34
Chapter 4: Permitting Process	35
General Tips & Information	35
County Application Process	36
CEQA Review Process, State Permitting on Private Land, and Development on State-Owned Land	38
Federal Permitting	39
Interconnection	40
Chapter 5: Community Benefits	41
Considerations for Potential Community Benefits	42
Examples of Community Benefit Programs	43
Chapter 6: Future Trends & Creative Approaches	45
The Smart Grid	45
Energy Storage Systems	46
Distributed Generation, Microgrids, and Zero Net Energy	47
Community-Shared Solar	48
New and Emerging Solar Technologies	49

Acronyms

AB: Assembly Bill
BLM: Bureau of Land Management
BOE: California State Board of Equalization
CAISO: California Independent Systems Operator
CAP: Climate Action Plan
CCA: Community Choice Aggregation/Aggregator
CEC: California Energy Commission
CEQA: California Environmental Quality Act
CPCN: Certificate of Public Convenience and Necessity
CPUC: California Public Utilities Commission
CUP: Conditional Use Permit
EIR: Environmental Impact Report
EIS: Environmental Impact Statement
FAA: Federal Aviation Administration
FERC: Federal Energy Regulatory Commission
FEMA: Federal Emergency Management Agency
IEEE: Institute of Electrical and Electronics Engineers
JPA: Joint Powers Authority
GW: Gigawatt
GHG: Greenhouse gas
kV: Kilovolts
kW: Kilowatt
kWh: Kilowatt hour

LID: Low Impact Development
MW: Megawatt
Mwh: Megawatt hour
NEC: National Electrical Code
NEPA: National Environmental Policy Act
NFIP: National Flood Insurance Program
PACE: Property Assessed Clean Energy
PG&E: Pacific Gas and Electric Company
POD: Plan of Development
PPA: Power Purchase Agreement
PTC: Permit to Construct
PUD: Planned Unit Development
PV: Photovoltaic
ROW: Right-of-Way
RPS: Renewables Portfolio Standard
SFHA: Special Flood Hazard Areas
SGHAT: Solar Glare Hazard Analysis Tool
T&D: Transmission and Distribution
USFS: US Forest Service
W: Watts
WDAT: Wholesale Distribution Access Tariff
Wh: Watt hour
ZNE: Zero net energy