

## Example Calculations to Draft Manual Section 2806.60

The Hypothetical Solar and Wind Project examples below are for illustrative purposes only. The BLM has prepared them to show how rates for a hypothetical project would change based on the policies under consideration in Draft Manual Section 2806.60.

EXAMPLE CALCULATIONS ARE FOR COMPARISON PURPOSES ONLY

<b>Hypothetical Solar Project</b>					
<b>State</b>	<b>County</b>	<b>Calendar Year</b>	<b>Technology</b>	<b>Acres</b>	<b>Megawatts</b>
<i>California</i>	<i>Riverside</i>	<i>2022</i>	<i>Photovoltaic (PV)</i>	<i>2,100</i>	<i>300</i>

### CURRENT ACREAGE RENT AND MEGAWATT FEE CALCULATION EXAMPLE UNDER 43 CFR 2806.52

Using the Hypothetical Solar Project example above and utilizing the acreage rent and megawatt (MW) capacity fee calculation method described under 43 CFR § 2806.52:

The 2017 NASS Census estimated per acre market value of land and buildings for Riverside County in California is \$18,144. This amount is adjusted by (or reduced by) California's state specific factor of 51% to \$8,891. ([See BLM Instruction Memorandum IM 2021-005 Attachment 3](#)). For a solar energy project located in Riverside County, the adjusted per acre land value of \$8,891 falls within Zone 9 (\$6,584 - \$16,279) on the 2021 – 2025 Solar Energy Development Acreage Rent Schedule. For 2022, the per acre rent for Zone 9 is \$992.24. Therefore, a 2,100-acre solar energy development project located in Riverside County would pay \$2,083,704 in acreage rent in 2022.

A 2022 megawatt capacity fee of \$651,600 is determined by multiplying 300MW by \$2,172/MW. (See BLM Instruction Memorandum IM-2021-005, [Attachment 6](#))

Hypothetical Solar Project total 2022 rent per 43 CFR 2806.52 = **\$2,735,304**

Rent Reduction: *not applicable under baseline scenario*

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Hypothetical Solar Project					
State	County	Calendar Year	Technology	Acres	Megawatts
California	Riverside	2022	Photovoltaic (PV)	2,100	300

### RENT REDUCTION EXAMPLE UNDER DRAFT MANUAL 2806.60, APPENDIX A – OPTION 1

Using the same Hypothetical Solar Project and the acreage rent calculation method under **Draft Policy - Option 1 Adjustment Method** to reduce rent:

The acreage rent calculation would begin with the 2017 NASS census non-irrigated county land value of \$11,664 for Riverside County in California and reduce it by 13.27% to remove the percentage of improved acres in NASS ‘other’ category for Riverside County (*35,000 acres out of the total 263,796 total farmland acres*), and arrive at \$10,116 per acre for unimproved, non-irrigated land value.

Taking the 2017 NASS non-irrigated per acre county land value that has been adjusted to remove improvements, the BLM would calculate a 2021 per-acre rate of \$309.85 for Riverside County by multiplying \$10,116 by an encumbrance factor of 100%, 3% rate-of-return and adding 2.1% based on IPD-GDP. A 2022 per-acre rate of \$316.36 is determined by increasing the 2021 rate by the IPD-GDP rate of 2.1%. Therefore, a 2,100-acre Hypothetical Solar Project located in Riverside County with a rate of \$316.36 would pay \$664,356 in acreage rent in 2022.

Acreage rent calculation note: under Option 1, a rate-of-return between 3% and 5% is proposed for use in calculating the county per-acre rent rate. This hypothetical example utilizes a 3% rate-of-return.

A 2022 megawatt capacity fee of \$325,800 is determined by multiplying 300MW by \$1,086/MW.

Megawatt fee calculation note: under Option 1, a rate-of-return between 2% and 4% is proposed for use in calculating the per-MW fee. This hypothetical example utilizes a 2% rate-of-return.

Hypothetical Solar Project total 2022 rent per Option 1 = **\$990,156**

Hypothetical Rent Reduction under Option 1 = \$1,745,148 or 64%

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<b>Hypothetical Solar Project</b>					
<b>State</b>	<b>County</b>	<b>Calendar Year</b>	<b>Technology</b>	<b>Acres</b>	<b>Megawatts</b>
<i>California</i>	<i>Riverside</i>	<i>2022</i>	<i>Photovoltaic (PV)</i>	<i>2,100</i>	<i>300</i>

### RENT REDUCTION EXAMPLE UNDER DRAFT MANUAL 2806.60, APPENDIX A – OPTION 2

Using the same Hypothetical Solar Project and the calculation method under **Draft Policy - Option 2 Adjustment Method** to reduce rent using a generation fee structure.

The total megawatt hours production from a 300MW PV solar project would be 525,600MWh per year. 525,600MWh per year multiplied by \$63/MWh would result in gross revenue from annual MWh production of \$33,112,800. Therefore, under a scenario of a 3% generation fee method calendar year 2022 rent would be \$993,384.

#### Hypothetical Example Assumptions:

Hours per year = 8,760

PV solar net capacity factor = 20% (*project specific technology based net capacity factor would be applied*)

Hypothetical Energy price = \$63 per megawatt-hour (*actual contracted energy price would be applied*)

Generation fee = 3% of gross revenue from annual MWh production. (*Subject to escalation per Draft Manual 2806.60 – Option 2 generation fee rent increase*)

Hypothetical Solar Project total 2022 rent per Option 2 = **\$993,384**

Hypothetical Rent Reduction under Option 2 = \$1,741,920 or 64%

## Example Calculations to Draft Manual Section 2806.60

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EXAMPLE CALCULATIONS ARE FOR COMPARISON PURPOSES ONLY

Hypothetical Wind Project					
State	County	Calendar Year	Technology	Acres	Megawatts
California	San Diego	2022	Wind	10,000	100

### CURRENT ACREAGE RENT AND MEGAWATT FEE CALCULATION EXAMPLE UNDER 43 CFR 2806.62

Using the Hypothetical Wind Project example above and utilizing the acreage rent and megawatt (MW) capacity fee calculation method described under 43 CFR § 2806.62:

The 2017 NASS Census estimated per acre market value of land and buildings for San Diego County in California is \$23,209. This amount is adjusted by (or reduced by) California's state specific factor of 51% to \$11,372. ([See BLM Instruction Memorandum IM 2021-005 Attachment 3](#)). For a solar energy project located in Riverside County, the adjusted per acre land value of \$11,372 falls within Zone 9 (\$6,584 - \$16,279) on the 2021 – 2025 Solar Energy Development Acreage Rent Schedule. For 2022, the per acre rent for Zone 9 is \$99.22. Therefore, a 10,000-acre solar energy development project located in Riverside County would pay \$992,200 in acreage rent in 2022.

A 2022 megawatt capacity fee of \$380,200 is determined by multiplying 100MW by \$3,802/MW. (See BLM Instruction Memorandum IM-2021-005, [Attachment 6](#))

Hypothetical Wind Project total 2022 rent per 43 CFR 2806.52 = **\$1,372,400**

Rent Reduction: *not applicable under baseline scenario*

## Example Calculations to Draft Manual Section 2806.60

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### EXAMPLE CALCULATIONS ARE FOR COMPARISON PURPOSES ONLY

Hypothetical Wind Project					
State	County	Calendar Year	Technology	Acres	Megawatts
California	San Diego	2022	Wind	10,000	100

### RENT REDUCTION EXAMPLE UNDER DRAFT MANUAL 2806.60, APPENDIX A – OPTION 1

Using the same Hypothetical Wind Project and the acreage rent calculation method under **Draft Policy - Option 1 Adjustment Method** to reduce rent:

The acreage rent calculation would begin with the 2017 NASS census non-irrigated county land value of \$8,683 for San Diego County in California and reduce it by 17.9% to remove the percentage of improved acres in NASS ‘other’ category for San Diego County (39,809 acres out of the total 222,094 total farmland acres), and arrive at \$7,129 per acre for unimproved, non-irrigated land value.

Taking the 2017 NASS non-irrigated per acre county land value that has been adjusted to remove improvements, the BLM would calculate a 2021 per-acre rate of \$21.84 for San Diego County by multiplying \$7,129 by an encumbrance factor of 10%, 3% rate-of-return and adding 2.1% based on IPD-GDP. A 2022 per-acre rate of \$22.30 is determined by increasing the 2021 rate by the IPD-GDP rate of 2.1%. Therefore, a 10,000-acre Hypothetical Solar Project located in Riverside County with a rate of \$22.30 would pay \$223,000 in acreage rent in 2022.

Acreage rent calculation note: under Option 1, a rate-of-return between 3% and 5% is proposed for use in calculating the county per-acre rent rate. This hypothetical example utilizes a 3% rate-of-return.

A 2022 megawatt capacity fee of \$190,100 is determined by multiplying 100MW by \$1,901/MW.

Megawatt fee calculation note: under Option 1, a rate-of-return between 2% and 4% is proposed for use in calculating the per-MW fee. This hypothetical example utilizes a 2% rate-of-return.

Hypothetical Wind Project total 2022 rent per Option 2 = **\$413,100**

Hypothetical Rent Reduction under Option 1 = \$959,300 or 70%

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Hypothetical Wind Project					
State	County	Calendar Year	Technology	Acres	Megawatts
California	San Diego	2022	Wind	10,000	100

### RENT REDUCTION EXAMPLE UNDER DRAFT MANUAL 2806.60, APPENDIX A – OPTION 2

Using the same Hypothetical Solar Project and the calculation method under **Draft Policy - Option 2 Adjustment Method** to reduce rent using a generation fee structure.

Based on Hypothetical Example Assumptions (below), the total megawatt hours production from a 100MW wind project would be 306,600MWh per year. 306,600MWh per year multiplied by an energy price of \$45/MWh would result in gross revenue, from annual MWh production, of \$13,797,000. Therefore, under a scenario of a 3% generation fee method calendar year 2022 rent would be \$413,910.

#### Hypothetical Example Assumptions:

Hours per year = 8,760

Wind net capacity factor = 35% (*project specific technology based net capacity factor would be applied*)

Hypothetical Energy price = \$45 per megawatt-hour (*actual contracted energy price would be applied*)

Generation fee = 3% of gross revenue from annual MWh production. (*Subject to escalation per Draft Manual 2806.60 – Option 2 generation fee rent increase*)

Hypothetical Wind Project total 2022 rent per Option 2 = **\$413,910**

Hypothetical Rent Reduction under Option 1 = \$958,490 or 70%