

## Solar Industrialization of Central Pennsylvania Farmland's Renewable Uses

*A Relative Land Use Efficiency Ranking and Implied Cost-Benefit Outcome*

Written for the South Mountain Partnership's Solar Working Group

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- Central PA farmland is highly productive Class I-IV soils
- Central PA farmland is close to high demand eastern seaboard populations, reducing production costs and transportation costs
- Central PA farmland is irreplaceable: Insufficient regional sunlight to create sci-fi mountainside hydroponic greenhouses that could offset agricultural production lost to permanent industrial solar arrays on farmland
- South Mountain and most of Central Pennsylvania falls in the 2-4 kWh/M<sup>2</sup>/day range in *January*, compared to the American Southwest with 5-6
- South Mountain and most of Central Pennsylvania falls in the 5-6 kWh/M<sup>2</sup>/day range in *June-July-August*, compared to the American Mid-West and West with 6-10 (see attached map of USA solar strength)
- Weighted values in chart below demonstrate that actual value of solar is low, even though initial cash payments to land owners may be high
- Assume ten year horizon for industrial solar "farms" that are probably indefinite or semi-permanent
- Pennsylvania is among the weakest USA solar potential. The South Mountain area is very slightly more than the lowest solar strength in America.
- The benefits of the current industrial solar push are lower than the costs it imposes. \* indicates non-renewable land uses like housing development
- If solar is such a poor investment, then why is it being pushed so hard? Who benefits from this bad investment? Who loses?
- Very weak solar power potential in Pennsylvania/ SMA begs the question of why such a strenuous effort is made to cover our farmland in metal, plastic, glass? What larger objective is being sought? If solar power here is weak, then how are these huge investments justified? What is their ROI? ? How is the investment being paid for? Paying for itself? Is our farmland being used as a lost leader in the building of a larger industry angling for big subsidies?
- Bonding needed for cleanup

**Chart:** *Relative values of different renewable land uses versus industrial solar installation on South Mountain Area land*

Open Land Uses →	Local Solar Strength 1-10	Commercial Farm, Food, Fiber 1-10	Hunting Lease 1-5	Orchard 1-7	Scenic Values 1-2	Wildlife Habitat 1-3	Watershed Recharge 1-5	General Recreation 1-3	Quarry 1-10	Homes 1-10*	Commercial 1-10*
January	1	1	5	1	1	1	5	1	2	1	10
February	1	1	4	1	1	1	5	1	2	1	10
March	1	1	1	1	1	1	5	2	4	2	10
April	1	2	1	1	2	2	4	3	5	10	10
May	2	5	5	2	2	3	3	3	6	10	10
June	3	6	1	3	2	3	2	3	10	10	10
July	3	7	1	7	2	3	1	3	10	10	10
August	3	10	1	7	2	3	1	3	10	10	10
September	2	9	5	7	2	3	1	3	10	10	10
October	1	5	5	4	2	3	2	3	7	8	10
November	1	2	5	1	1	2	3	2	3	5	10

December	1	1	5	1	1	1	4	1	1	1	10
Efficiency score	<b>1.66</b>	<b>4.16</b>	<b>3.25</b>	<b>3.00</b>	<b>1.58</b>	<b>2.08</b>	<b>3.00</b>	<b>2.33</b>	<b>5.83</b>	<b>6.5</b>	<b>10</b>

In sum: Is the big sales job push to install industrial solar *right now* on pristine Northeastern open space a fad, or a solid financial investment backed by long term performance? Industrial solar has the potential to destroy a great deal of important farmland, damage watersheds, and eliminate human and wildlife habitat and outdoor recreation, with questionable benefits beyond just the initial landowner payment. Industrial solar in the USA northeast is a lot like the past big wind power farms fad that wrecked remote, pristine, untouched mountaintop ecosystems across Pennsylvania, only to hardly produce much electricity in the end. The concepts of sustainability and renewability that mountaintop wind power presented proved to have a huge environmental cost. The same dynamic is in play now with industrial solar.