GP HALSEY: SOLAR ENERGY

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PROBLEM STATEMENT

The GP Halsey paper mill has never utilized solar power but has a large potential land footprint that could house a small solar farm.

BACKGROUND

Location: Halsey, Oregon
Products: Paper towels & bathroom tissue
Max Energy Usage: 22 Megawatts
Operation time: 24/7 year-round

Source: Odegard, Kyle. "GP's Halsey Mill celebrating 50th year." Albany Democratic-Herald, 2018.

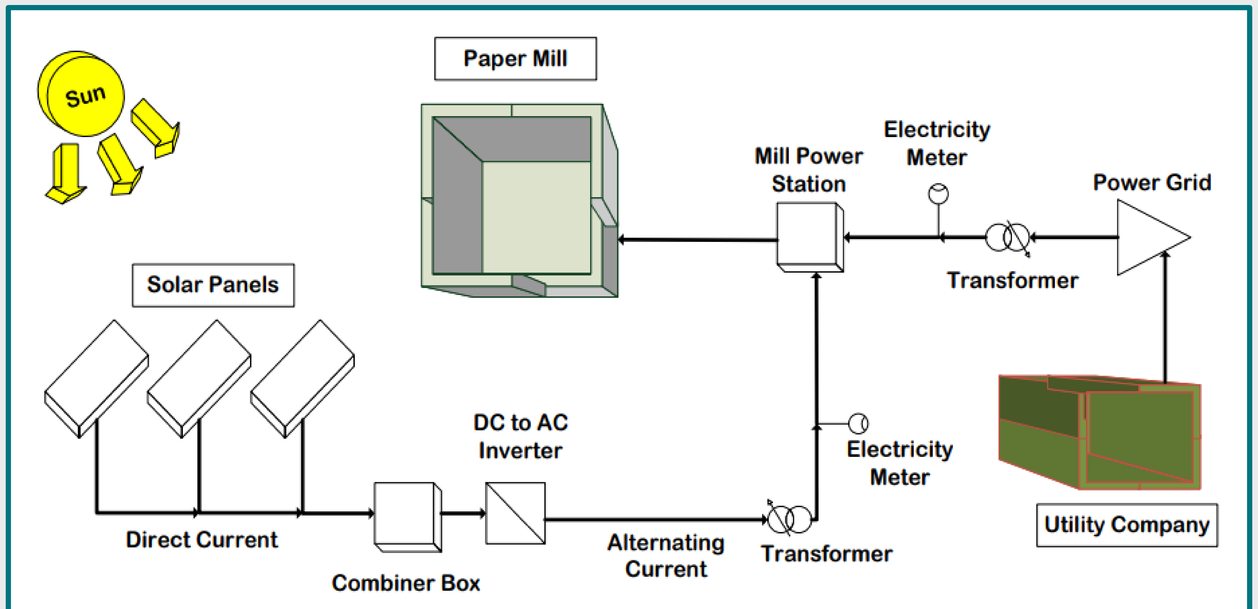
COST ESTIMATES

Estimated Initial Cost:	$25 M
Maintenance Cost:	$1.1 M
Asset Depreciation:	$4.2 M
Federal Tax Credit:	$7.5 M

Initial and maintenance costs estimated for 50-100 MW system. MARCS depreciation used for capital over 5 years. Only federal investment tax credit used; no local or state credit is available.

GOAL

Evaluate the economics of a land use change and solar farm installation for providing up to 18 MW to the GP Halsey Mill.

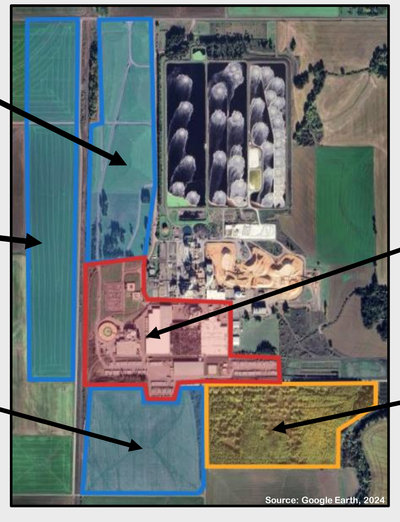


LAND AVAILABILITY

North Lot (available): 65 acres

West Lot (available): 80 acres

South Lot (available): 55 acres



Source: Google Earth, 2024

Total Available Land: 200 acres

Mill Lot (occupied): 74 acres

East Lot (occupied): 57 acres

TIMELINE

Application & Certification: 9 months
Site construction: 12 months
Solar farm testing: 6 months

Fully completed timeline:
2 years, 3 months

Site construction includes land surveying, grading, infrastructure, and panel installation. Note: Land use change only required for solar farms with a footprint >240 acres.

Energy Pricing Trends

Energy Source	Price	Short term fluctuations	Long term fluctuations
Electricity	8.05 ¢/kWh	+3%	-10% to +10%
Natural Gas	$7,040/ft^3	+14%	-9% to +10%
Solar	4.08 ¢/kWh	Steady	-50% to +16%

CONCLUSIONS

The farm has a payback period of 7-9 years. It is highly likely that implementing a solar farm will result in long-term profitability. Additionally, a solar farm offers more reliability than power from public utilities.

FUTURE WORK

- Evaluate viability of increasing solar farm capacity (>18 MW)
- Compare results to NuScale modular nuclear reactor.

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