

Western NY Peace Center, Inc.
1272 Delaware Ave
Buffalo, NY 14209
www.WNYPeace.org
716-332-3904

Charley Bowman, Interim Exec. Director

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Peaceful Uses for Niagara Falls Airport/Air Base Solar Power Generation

Option 1:

Entire Airport/Air Base used for solar power generation
(area bounded by: Packard Rd, Porter Rd., Niagara Falls Blvd, Walmore Rd., Lockport Rd.)

Approx. Area: 8 million square meters....80% covered by solar panels
Assuming 0.15 KW peak output per square meter (15% solar panel efficiency)
Total peak capacity: 960,000 kW at high noon
Assuming 3.0 full-sun hours per day (3 kWh/m²/day of solar radiation)
Total annual output =
960,000 kWh X 3 sun hours/day X 365 days/year = 1,051,200,000 kWh/year

Cost to build: approx. \$3 billion (@ \$3.3/Watt),
or, 10.1 days of our current spending on war (@ \$200,000 per minute)
Annual income generated: \$115,600,000 (at \$0.11/kWh)
Cost to Operate/Maintain: \$45.5 million (@\$50/kW/year)
Number of Jobs to maintain solar array: 546 (@\$50,000)

Enough power for 110,000 homes (at 700 kWh/home/month); Disadvantage: no more airport!

Option 2:

Niagara Falls Air Base (military section)
Area bounded by: Tuscarora Rd, Lockport Rd., and Walmore Rd.
Approx. Area: 2 million square meters (80% covered with solar array)
Total peak capacity: 240,000 kW (at high noon)...assume 3 hours sun each day for 365 days per year.....
Total annual output = 240,000 kW X 3 sun hours/day X 365 days = 262,800,000 kWh/year

Cost to build: \$800 million (at \$3.3/Watt), or 2.8 days of our spending on war
Income generated from annual output: \$28,900,000 per year (at \$0.11/kWh)
Cost annually to Operate/Maintain: \$11.4 million
Number of Jobs to maintain solar array: 136 (@\$50,000/each)

Advantage: More than enough solar power to supply all 22,000 homes in the City of Niagara Falls

Another Advantage: Civilian Airport Retained

Option 3:

Cover the Lewiston Pump Storage Reservoir with a solar array

Area: approx. 7.7 million square meters (80% covered by solar array)

Total peak capacity (at high noon): 924,000 kW

Total annual output: 1,011,780,000 kWh/year (assume 3 sun hours/day x 365 days/year)

Cost to build: \$3.0 billion (@ \$3.3/Watt -- but needs underwater structural support)

Income generated from annual output: \$111,296,000 (at \$0.11/kWh)

Cost annually to Operate/Maintain: \$44 million

Number of Jobs to maintain solar array: 528 (@\$50,000)

Current Lewiston pump storage capacity: 300 million Watts

Pump storage capacity + solar array: 1,224 million Watts (increase of 400%)

Option 2 + Option 3: 1460 million Watts added generating capacity (at a cost of \$3.7 billion)

Total annual income: \$140,196,000

Current hydroelectric capacity: 2400 million Watts (Robert Moses Plant) + 300 million Watts (Lewiston Pump Storage).

With added solar capacity --- approx. 60% increase in clean energy generating capacity coming from Niagara Falls...

Total number of jobs to maintain solar arrays: 664 @\$50,000 each (Total: \$33 million)

Current Pentagon Spending at Niagara Falls Air Base: \$168 million annually; \$88 million payroll for 3,500 jobs (BN, Jan 26, 2012) – average: \$25,000 per job

Option 2 + Option 3: If we borrowed \$3.7 billion @ 4.5% interest, we would pay \$168 million annually in interest payments.

Bottom Line:

We are already spending the equivalent money to build option 2 + option 3 solar arrays in Niagara Falls.....the money is directed at wars, instead of green, clean energy....

Sources:

1. <http://www.nrel.gov/rredc/pvwatts/>
2. Google Earth (for land areas)
3. *Cost and Performance Data for Power Generation Technologies, February 2012* cost estimates to build large scale solar arrays (page 38)....Name of document: nrel-cost-report.pdf
4. *JEDI tool at www.nrel.gov*
5. <http://quickfacts.census.gov/>

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