

Renewable Energy Task Force

Status Report on the Direct Conversion of Solar Energy to Electricity to Supplement Longmeadow's Electricity Needs

The question of the potential for using photovoltaic cells to convert solar energy to electricity to supplement Longmeadow's electricity needs has been brought before the Task Force.

Potential applications include:

Lighting one or more of the town's flag poles.

Replacing selected street lights throughout the town

Powering the security lighting around Glenbrook Middle School.

Potential advantages include:

Continued operation of security systems during a conventional electric power failure.

Demonstration of the available technology

Reduced carbon footprint in the atmosphere from the use of a non-fossil fuel sourced electric power

The opportunity to gain experience in the use of this type of equipment.

A start on the footpath to becoming a Green Town.

What has been done so far:

Visited an established Solar-PV cell installation at STCC Technology Park. Concluded that such installations are technically feasible, commercially available and economically unattractive without major grant money to support first costs. Such grant money is available through both state and federal sources

Reviewed street lighting standards to establish a design basis for new street lights. Concluded that Longmeadow and most towns in Massachusetts do not have street lighting standards or guidelines, Concord MA being an exception; we now have a copy of Concord's lighting guidelines and policy.

Reviewed the technology and equipment available to provide solar-PV cell powered street lights. Concluded that there are several suppliers of equipment in New England but that the number of installations in New England is few, technology and equipment

designs are changing rapidly and the purchase cost of a single street light system (PV cell array, battery pack, lamp and light pole) will be the range of 10000\$ to 15000\$ depending on lamp design. Buying a new light pole is recommended in order to ensure an acceptable wind resistance for the package.

Discussed the use of solar-PV cell powered lighting with two professionals with relevant experience. Professionals will argue for decisions based on life-cycle cost, utilization of the latest technology, the employment of energy conservation measures before using solar-PV cell systems, etc. One of the more interesting individuals, George Woodbury, makes a business out of reviewing the lighting system in towns such as ours and recommending changes based on energy conservation, securing grant money for same and overseeing the revision work.

No work has been done to size or shape a solar-PV cell array for the street light, the flag pole light or security lighting proposals.

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