

Comments on Suitability Criteria

1. Valuing Scenery and Nature

Naturalness and beauty are two key elements affecting the quality of life and the value of land in rural Massachusetts. Any site suitability evaluation method must reflect this fact.

While the small towns of rural Massachusetts are short on high paying jobs, thriving public education, convenient, major health facilities, public transit, and other amenities associated with denser populations they do have and do treasure their rural atmosphere, natural environment, and beautiful scenery. Residents choose to live in these towns because of these aspects of life here, and these attractions draw visitors from all over and power local economies.

While the worth of natural beauty for residents and visitors may be hard to quantify, there is evidence that it has concrete economic value. Property values reflect the presence of views and the absence of visible industrial sites. In towns even where the typical home site is surrounded by abundant forests and fields, land with views is often taxed at a higher rate than other properties. Real estate property sheets include an item for views because they are selling points. Visible fields of solar panels would negate this.

While the site suitability criteria rightly consider habitat, i.e., the effects of a development on flora and fauna, it is a mistake to not assess effects on the local human populations. It may be hard to assign an exact quantifiable value to beauty but by not considering beauty and naturalness you are already assigning them a value of zero; clearly this is wrong. If two sites receive similar scores under the current criteria, but the first is in the middle of a scenic vista while the second is largely invisible and a scrubby regrowth area, the first site should receive a more highly negative score under a more inclusive criteria. If a monetary value would help in developing criteria for establishing the value of scenic beauty and natural settings, the suitability criteria team could consult with **local** real estate agents who have a sense of the value they add to a home or site.

2. Net Benefit Solar vs. Forests

Forested sites do deserve highly negative suitability scores. While solar proponents point out that PV power plants displace fossil fuel powered generation facilities and thus produce more benefits than the forests they may displace, they often leave out many financial and environmental costs. In determining the costs as well as the net benefits of solar power the following economic and environmental costs should be included:

- Mining and transport of raw material for panels and batteries.
- Manufacturing of batteries and panels
- Transportation to site
- Installation
- Removal and disposal
- Design, siting, and financing
- Site clearing
- CO2 releases from land disturbance and from short term wood use/disposal from logging often releasing decades of sequestered carbon.

Proper assessments of how long it will take for a solar project to produce a net benefit need to address all the above factors as well as the sequestering potential of the forest being displaced.

Note that a forest left alone has none of the costs cited above and produces many benefits beyond sequestration and storage. Also, once a PV facility has displaced a carbon emitting facility of

similar productiveness it has no additional effect on atmospheric carbon, whereas an undisturbed maturing forest continues to store and sequester carbon, lowering atmospheric carbon.

Solar proponents cite an expected need for 27 GW of capacity in Massachusetts by 2050. Even using simplistic reasoning without reflecting all the factors mentioned above 27 GW of net capacity will require about 137,000 acres, about five times the area of the Quabbin Reservoir. Similar ratio of capacity per person yields a requirement of about 7,000,000 acres of panels for the nation. The feasibility of production and installation of this quantity of panels and associated battery energy storage needs to be firmly established.

I believe current panels convert solar energy to electrical energy with an efficiency of about 18 percent. Perhaps we should be putting more resources into improving panel efficiencies rather than subsidizing facilities using current models. Similar consideration applies to developing safer, less environmentally intrusive battery technologies.