



STAFF REPORT

MORGAN COUNTY PLANNING COMMISSION

PETITION FOR: TEXT AMENDMENT

Applicant: Morgan County Planning & Development
Applicant's Agent:
Zoning Ordinance: Morgan County Zoning Ordinance
Article 7, Regulations for Specific Uses

Summary

Morgan County Planning and Development is proposing regulations for Solar Energy Systems and Solar Energy Facilities. Solar installations in Morgan County have been gradually increasing. Although the majority of these installations have been residential roof-mounted flush panels, we have had a couple of ground mounted tracking systems installed, such as the one at Hundred Acre Farm. These large and highly visible structures have prompted several complaints to the Commissioners, who asked Staff to look into regulations for solar installations.

According to the Georgia Solar Energy Association, Morgan County has two solar firms, 18 solar installations (ground or roof mounted) and 7 solar water heater installations. See below for a list of the entities listed on the GSEA website. The list is updated, as Staff is aware of at least one installation that is not included.

The proposed language is a combination of language taken from the solar ordinances of Jackson County and Walton County.

Proposed Language

Chapter 7.38 Solar Energy Systems and Solar Energy Facilities

Section 7.38.1 Solar Energy Systems and Solar Energy Facilities, General

No Solar Energy System or Solar Energy Facility shall be located over a septic system, leach field area or identified reserve area unless approved by the Department of Environmental Health.

If located in a floodplain or an area of known localized flooding, all panels, electrical wiring, automatic transfer switches, inverters, etc. shall be located above the base flood elevation.

Panels and building mounts shall be installed per manufacturer's specifications.

Section 7.38.2 Solar Energy System, Building Mounted

No solar energy system shall be mounted or affixed to any freestanding wall or fence.

In residential zoning districts, a solar energy system, for aesthetic reasons, shall not be located on the front slope of a pitched roof of a principal residential structure unless no other location for the solar energy equipment is feasible. The county may require sun and shadow diagrams specific to the installation to ensure compliance with this provision.

Building-mounted solar panels or systems shall not exceed the maximum height allowed in the zoning designation where the structure is located.

A building permit shall be required for installation of all building mounted solar energy systems, except for flush mounted panels. An electrical permit shall be required for all solar energy systems. An inspection to determine if the structure is capable of supporting the array weight may be necessary.

Section 7.38.3 Solar Energy System, Ground Mounted

A ground mounted solar energy system shall not be located in the required front yard of a lot.

For residential properties, a ground mounted solar energy system shall not exceed 25% of the footprint of the principal building served. For non-residential properties, a solar energy system shall not exceed 50% of the footprint of the principal building served.

A ground mounted solar energy system must comply with the setbacks for the zoning designation in which it is located. If the system is tracking capable, no part of the system may swing into the setback.

The maximum height of a ground mounted solar energy system shall not exceed the maximum building height allowed in the zoning district in which it is located, or twenty feet, whichever is less.

A building permit and an electrical permit are required for any ground mounted solar energy system.

Section 7.38.4 Solar Energy Facility (Solar Farm)

The minimum lot size for a Solar Energy Facility shall be 5 acres.

Solar Panels or solar arrays shall be mounted onto a pole, rack or suitable foundation, in accordance with manufacturer specifications, in order to ensure the safe operation and stability of the system. The mounting structure (fixed or tracking capable) shall be comprised of materials approved by the manufacturer, which are able to fully support the system components, in accordance with applicable building permit requirements. Electrical components of the facility shall meet applicable electrical code requirements, and all electrical wires and lines less than 100K-V that are used in conjunction with the Solar Energy Facility shall be installed underground.

Multiple mounting structures shall be spaced apart at the distance recommended by the manufacturer to ensure safety and maximum efficiency.

A Solar Energy Facility and its appurtenant components and structures shall be set back a minimum of 50 feet from all property lines and 100 feet from any residence.

The facility shall be fully screened from adjoining properties and adjacent roads using natural topography or by berms and the planting of an evergreen buffer with at least 75% opacity at the time of planting. The Solar Energy Facility shall be enclosed by a security fence no less than 6 feet in height.

Freestanding solar panels or solar arrays shall not exceed 20 feet in height as measured from the grade at the base of the structure to the highest point. Mounted solar panels or solar arrays shall not exceed 8 feet above the apex of the structure on which it is mounted or the maximum height for buildings in the zoning district in which it is located.

Sound barriers shall be required for noise mitigation around all inverter and transformer skid pads. Mitigation barriers shall be approved on an individual basis by the Director of Planning and Development.

The Solar Energy System components shall be designed with an antireflective coating or at least shall not produce glare that would constitute a nuisance to occupants of neighboring properties, aircraft, or persons traveling adjacent on nearby roads. The county may require documentation demonstrating sight lines or an acknowledgement from the Federal Aviation Administration.

If lighting is required, it shall be activated by motion sensors, fully shielded and downcast type where the light does not spill onto any adjacent property or into the night sky.

Systems shall be maintained in accordance with manufacturer's specifications. The operator of the facility shall maintain the facility, including all buffer screening, in compliance with the approved plans and shall keep the facility free from weeds, duct trash and debris.

In addition to the general requirements for a site plan, the application for a Solar Energy Facility shall include the locations and dimensions of all solar panels, inverters, ancillary equipment, transmission lines, the location of any residences on site and within 100 feet of the perimeter of the facility, the location of any proposed solar access easements, and standard drawings of all energy system components. Where interconnection to an electric utility grid is proposed, the applicant shall submit evidence that the electrical utility provider has been informed of the customer's intent to install an interconnected facility with the local electric utility grid. A copy of the approval from the local utility must also be provided before operation of an interconnected facility will be authorized.

A decommissioning plan will be required as part of the application and must address the anticipated service life of the facility and process for removal if the facility is abandoned or has reached its life expectancy. All obsolete or unused systems shall be removed. Any structure or equipment associated with the Solar Energy Facility that is not operated for a continuous period of one year shall be considered obsolete or unused and decommissioned per the approved decommissioning plan.

A Solar Energy Facility shall not be used to display advertising. Contact information and appropriate warning signage shall be posted at the site in a clearly visible manner.

The county may require other studies, reports, certifications and approvals be submitted by the applicant to ensure compliance with this section.

The following information is from the GSEA website. Although Georgia is frequently cited as being a top state for solar installations based on sunlight hours per day, the state is actually tied for #10.

Setting the solar story straight

Solar is getting cheaper

The cost of solar energy is falling fast. Since 1980, there has been an average reduction of seven percent per year in the cost per watt of solar cells.^[1] One of the most common myths is that solar is too expensive. This myth merely looks at the current price of solar or uses price assumptions which are based on average module prices over the past five years.

Source: Boston Consulting Group, Perspective on Solar PV, November 2011

Solar reduces electricity costs long term

Source: trendresearch, How the money for renewable energy is going, 2011

During hours of peak electricity demand, utilities charge a premium rate for electricity. As more solar capacity is added, wholesale prices are reduced during peak hours. An oft-repeated myth is that solar is raising costs for consumers. But where is the money going? Data from Germany show that most of the subsidies flow on to households, business owners and farmers.

Solar generates a net surplus of energy

A certain amount of energy is required to produce a solar installation. A large installation 'pays back' this energy debt in 1.5 to 2.5 years and generates 10 to 20 times this amount of energy in its lifetime.^[2] One persistent myth is that solar requires more energy to manufacture than it produces. Although true in the 1970s when the technology was in its infancy, this has been untrue for decades.

Solar still works on cloudy days

It has been shown that some solar modules are actually more efficient in low light conditions.^[3] One well-worn myth is that solar does not work in cloudy conditions. On the contrary, on a cloudy day a solar system will produce about half of what it does on a sunny day.^[4] Actually, many countries with cloud cover like Germany, China and Canada are embracing solar energy.

Solar is becoming competitive with fossil fuels

In 2010 the price of solar fell below that of nuclear energy.^[5] Now it is clearly on track to fall below fossil fuels too. A common myth says solar cannot compete with fossil fuels on price. When one factors in the environmental and health costs of coal, it is actually more expensive than solar already.^[6] But even without factoring these in, solar is still set to surpass all fossil fuels as its costs plummet.

References

1. DOE NREL Solar Technologies Market Report, Jan 2010
2. Progress in Photovoltaics: Research & Applications, Vol 16, Issue 1, pp. 17-30, Jan 2008
3. TÜV Rheinland & Solarpraxis AG, PV+Test, May 2012
4. <http://www.yourturn.ca/solar/our-system/how-much-power-can-it-produce/>
5. Blackburn & Cunningham, Solar and Nuclear Costs - The Historic Crossover, Duke University
6. Epstein et al, Full cost accounting for the life cycle of coal, Harvard University

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MYTH: Solar only works in states like Arizona and California.

FACT: There's more than enough sun for solar to work in Georgia.

Atlanta, Augusta and Savannah average 5 hours of sunlight per day – that's just 30 minutes less than Los Angeles, California.

There are already hundreds of solar installations on the ground and rooftops in more than 80 counties across Georgia. Based on Georgia Environmental Finance Authority records, more than 18 MW of solar is installed and helping generate electricity for Georgia homes, businesses, schools and government buildings.

Georgia is tied for 10th among the states with the greatest energy potential from solar power, according to a [sun index](#) developed for the National Renewable Energy Laboratory (NREL) using data provided by NREL's Renewable Resource Data Center.

Solar Power Potential Ranked by State
2006
(Highest to Lowest Rank)

Rank	State	Sun Index
1	Nevada	1.19
2	Arizona	1.18
3	New Mexico	1.16
4	California	1.00
5	Colorado	0.99
6	Texas	0.98
6	Oklahoma	0.98
7	Wyoming	0.96
8	Florida	0.95
8	Kansas	0.95
8	Utah	0.95
9	Idaho	0.93
10	Mississippi	0.92
10	Georgia	0.92
10	South Carolina	0.92

Georgia Solar Energy Association List of Morgan County Solar installations:

1. Heidi Trail – residential – installed 11-8-14
2. Buckhead Road – residential – installed 6-1-12
3. Buckhead Road – residential – installed 6-20-14
4. Meadow Lane (Hundred Acre Farm) – non-residential – installed 10-31-11
5. Mergandollar Road – residential – installed 11-2-07
6. Fairplay Street – Solar Firm, KMC Electric, Inc.
7. Newborn Road – residential – installed 9-19-14
8. Little River Road – Solar Firm – Solar Sun World
9. Little River Road (Solar Sun World) – non-residential
10. Little River Road – residential – installed 6-22-07
11. Little River Road – residential - installed 5-20-13
12. Walker Road – residential – installed 12-31-12
13. Lawrence Drive – residential – installed 5-2-10
14. Doster Road – residential – installed 8-2-11
15. Doster Road – residential – installed 2-15-10
16. Doster Road – residential – installed 11-26-09
17. Doster Road – residential – installed 10-26-08
18. Doster Road – residential – installed 9-26-13
19. N. 2nd Street (Madison Conservation Group) – non-residential – installed 12-31-13
20. N. Main Street – residential – installed 2-17-12
21. Vine Street – residential – installed 6-15-11
22. Vine Street – residential – installed 6-15-11
23. East Avenue – residential – installed 8-30-10
24. East Avenue – residential – installed 2008
25. East Lane – residential – installed 9-20-09
26. Oak Lane (chicken houses) – non-residential – installed 1-12-12
27. Oak Lane (chicken houses) – non-residential – installed 1-30-12

Not on list – Meadow Lane – residential – installed 2014