Optimizing Renewable Energy Choices for Farms, Rural Small Businesses and Communities

“Solar Farms” are not Farms

“Wind Farms” are not Farms

“Solar Gardens” are not Gardens

Our History:

USDA Rural Energy for America (REAP)
Successful Project Support/Grant Writing

Community Wind Energy Project Outreach
Maryland Energy Administration

Community Solar Energy Generation Systems

- *Pilot Project Stakeholder Support*
- *Land-Owner Education Garrett County*

Commercial Solar
Ongoing Research

PROJECT FILTERS:

- Who Owns the Electrons?
- Who Owns the Production Assets?
- Who Derives Economic Benefits?
- Who Owns/Controls the Location?
- Regulatory and Financing Drivers?
- Environmental Benefits?
- Jobs?

U.S. Department of Agriculture Rural Energy for America Program (REAP)

(Renewables & Energy Efficiency Improvements)

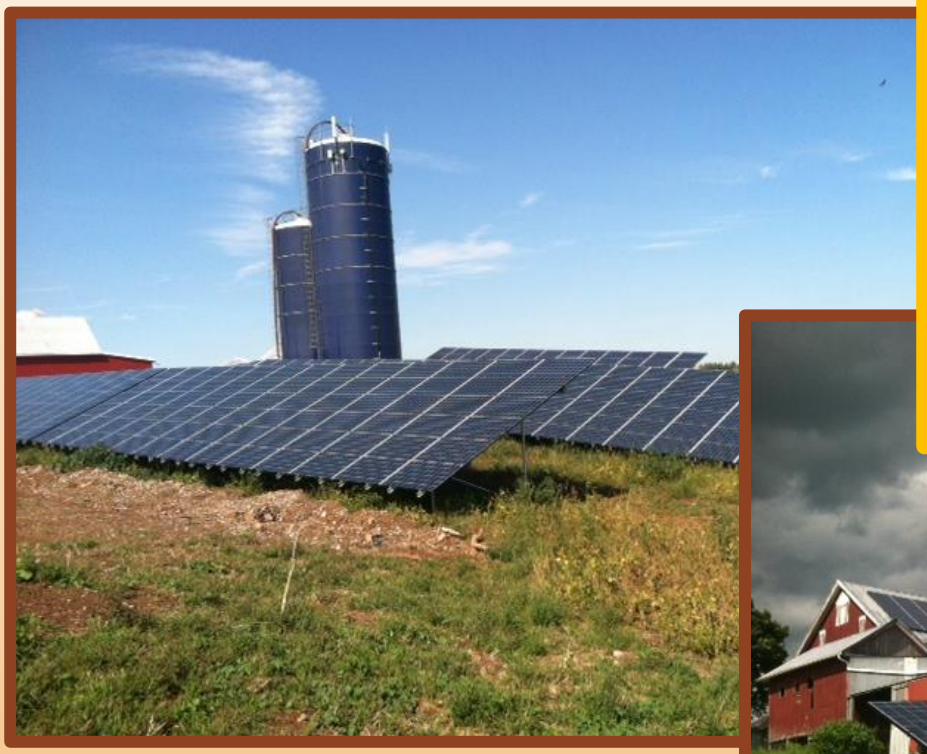
U.S. Department of Agriculture
Rural Energy for America Program (REAP)

- Farm or Rural "Small" Business – 25% grant and/or Loan Guarantees
- Electrons Used to Hedge Electricity Costs for Decades
- Applicant Must Own the System and Have "Site Control"
- Simple Payback
- Investment Tax Credit 30%
- Environmental Review -- Preference for Roofs
- Two Grant Cycles Annually: Ceiling is $500,000 grant

REAP Projects Examples:

- Thomas & Son – Boonsboro – 100% energy cost hedge
- Linganore Winecellars – Mt. Airy – small footprint
- Clear Ridge Nursery – land value too high
- Gravel Springs CSA – Roof (50%) and Soil (50%)
- Keymar – Former Dairy Pit & Benefits Other Locations
- Cedar Knoll -- poor land for grazing/growing

Neighbors Complained…
Project Set Back 100 Feet



Community Wind Energy

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Maryland Energy Administration

Community Wind Energy in Maryland (MEA)
Webinar - December 8th
Outreach Events in 2017

- One or Two Wind Energy Devices (Not a “Wind Farm”)
- Electron User Derives Economic and Environmental Benefit: Farms, Rural Small Businesses, Municipal, University, School, Hospital
- Windswept Grant – Provides $3,000/kw to Project Owner
- Project Owner Does Not NEED to be Electron User (for this grant)
- Diversify Energy Portfolio/Complements Solar Production Cycle
- Locational Specific – Anemometer Loans in Wind-Suitable Areas

Community Wind Energy in Maryland

Examples:

- Crisfield Wind Project at WWTP
- Chesapeake College

Anemometer Loans:

- City of Frostburg
- Garrett County
- Easton Utilities,
- State of Maryland

Community Wind Energy in Maryland

FARMS:

May Qualify for USDA REAP

AND

May Qualify for Windswept Grants

VERY SMALL FOOTPRINT!

Community Solar Energy Generation Systems (CEGS) -- Pilot Projects

Community Solar Energy Generation Systems (CEGS) -- Pilot Projects

State Law: 2015 HB 1087
PSC – Regulations Emerging – RM 56
Does not require PSC Certificate Of Public Necessity

UP TO 2 Megawatts of Production ≈ 12 Acres

Will require Local Permitting, PSC and Interconnection OK's

Requires "Subscribers" who will buy the electricity

MAY qualify for USDA-Rural Energy for America Funding

Community Solar Energy Generation Systems (CEGS) -- Pilot Projects

This has been a major catalyst by out-of-state developers

Some Farms Received Multiple

Investor/Owners Want Investment Tax Credits

Investor/Owners Want Long-Term “Subscriber Revenue” versus “Merchant Revenue”

Community Solar Energy Generation Systems (CEGS) -- Pilot Projects

- Electrons – Primarily to the Grid
- Assets – May Be Third-Party Owned
- **Economic Benefits:**
  - ❑ Project Owner -- May Be Power Purchase Agreement
  - ❑ **Subscribers** – Preference for LMI
  - ❑ Land Owner – May result in Ground Lease Annuity
  - ❑ Taxing Authority
  - ❑ Maintenance/Deconstruction

- Location Control – Inside the Fence -- Maintenance?
- Environmental – Vegetative Buffer – New Options!

Commercial Solar Projects

Commercial Solar Projects

Contentious!!!

- Electrons – *Utility Normally Buys Electrons*
  "Merchant Rate"/Requires Large Scale
  Hybrid = Mt. St. Mary's in Emmitsburg
- Assets – Owned by Third Party Investors
- Economic Benefits – Third Party Tax Equity Investor
  Land Owner – Annuity
- Local Property Tax Increase
- Site Control – Asset-Owner Controls Inside the Fence

Commercial – Washington County

State Prison:

- Largest (today) at 20 Megawatts
- Electricity goes to the Grid – not the Prison
- 132 Acres Out of Ag Production and “Tax Neutral”
- State-Owned Land -- “Bargain Lease” (Unsuitable for Other Uses?)
- Vegetative Buffer not “for pollinators”
- $70 Million and 300,000 panels
- Hundreds of Temporary Jobs
- Prisoners Maintain Grounds

Commercial – Washington County

Landfill Solar

- To be 25 Megawatts – to the Grid
- Public/Private Partnership
- 130 Acres – From Idle Landfill Space
- $515,000 Annual Income to County
- Offsets County Electric Bills
- Hundreds of Temporary Jobs
- Dashboard provided
- Lifetime Carbon Footprint Benefit:

  replaces 7.3 mill pounds of CO2

Commercial – Washington County

"Cearfoss" Solar Project

Planning Started – 2015; Likely Start 2018
Out of State Developer – Bears Development Risks

86 Acres -- Ag Land **– NOT Owner Occupied**

Economic Benefits:

- Lease to Land Owner
- Electrons Sold to Grid
- Tax Income to County

Commercial – Washington County

"Cearfoss" Solar Project

Stakeholder Issues:

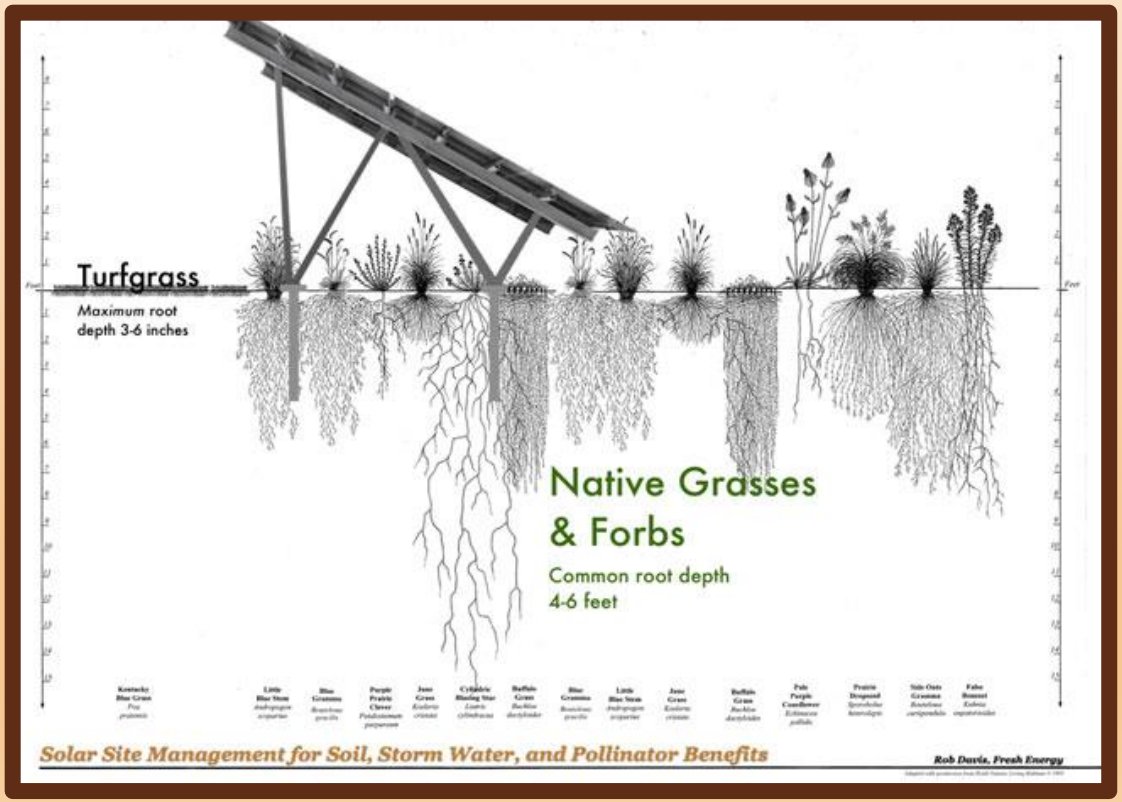
- Setbacks Increased to Benefit Neighbors
- Property Rights vs Neighbor Rights
- Economic Loss to Neighbors?

Add Economic Benefit to Neighbors:

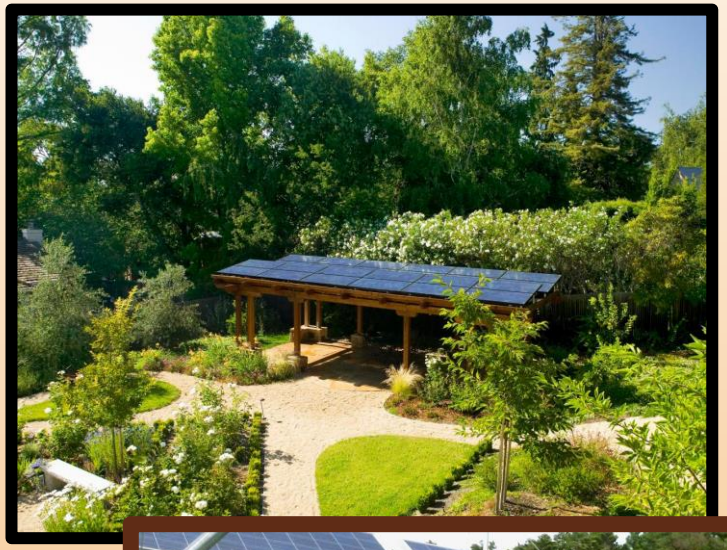
- Potential for Adding Pollinator Plantings?
- Potential for Adding Local Maintenance Services
- Give homeowners a stake in project/free electricity?

New Options for Real "**Solar Gardens**"

- Reduce Stormwater Runoff Risk
- Develop Jobs
- Add Beauty and Pollinator Support
- Use Disturbed Land for Collateral Benefits



New Options – Real "**Solar Gardens**"



New Options for Authentic "**Solar Farms**"

Special Thanks to Rob Davis**, Fresh Energy**, for pollinator + solar photos
www.freshenergy.org

Maryland Energy Administration, Community Wind Programs. Sam Bierne, Program Director, http://energy.maryland.gov/Pages/Info/renewable/windprograms.aspx
And ALPHA Energy, David Murrin, CEO, Community Wind Contractor, dkm@alpha-energy.com

USDA – Maryland/Delaware Office, REAP Grants, Bruce Weaver, State Energy Coordinator, *www.rd.usda.gov/MD*

Earth & Air Technologies, LLC, Ken Donithan**,** www.earthandairtech.com

Millinnium-3 Energy, LLC, Phil Kelly, www.m3-energy.com

Land & Cultural Preservation Fund, Inc., www.l-cpf.org

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Thank You!

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