



The Northern Chesco Clean Energy Future Task Force – CCPC Protect Forum

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Services

PRACTICAL ENERGY SOLUTIONS
a Division of Spotts, Stevens and McCoy
practicalenergy.net | ssmgroup.com





QUALIFICATIONS AND EXPERIENCE

Practical Energy Solutions/Spotts, Stevens and McCoy

- PES founded in 2006
- Joined Spotts Stevens and McCoy in July of 2020, to serve the same clients, with complementary services
 - Energy Audits (ASHRAE I, II, and III)
 - Building Energy Modeling
 - Municipal Energy Engineering Support
 - Technical Support for Rebate, Grant, and Financing Programs
 - Operational/System Assessments and Building Retuning
 - Strategic Energy Planning and Implementation
 - ROI/Feasibility Studies for Renewable Energy Systems
 - Benchmarking Studies
 - HVAC Design and Control Sequence Consulting
 - Carbon and GHG Inventories and Climate Action Plans
 - Tenant, Stakeholder, and Community Engagement





QUALIFICATIONS AND EXPERIENCE

Practical Energy Solutions/Spotts, Stevens and McCoy

- SSM, founded in 1932, provides a wide range of engineering services
 - Building Engineering Design
 - Site Planning and Design
 - Survey and Data Capture
 - Infrastructure Planning, Engineering and Design
 - GIS, Building, Infrastructure and Environmental Modeling
 - Water & Wastewater Planning, Engineering, Design and Operations
 - Construction Phase Services
 - Energy and Sustainability services



MUNICIPAL ENERGY INITIATIVES

PES Relevant Experience

- Municipal Programs
 - DVRPC Circuit Rider Program (Energy services for 12 municipalities)
 - Chester County Municipal Audit Program (38 municipal audits)
 - Delaware County Municipal Energy Toolbox and Efficiency Grant Program (36 municipalities)
 - City of Philadelphia: 11 years as primary energy consultant
- Other municipal energy clients:
 - Radnor Township (Strategic planning for 100% renewable energy)
 - Springfield Township
 - Whitmarsh Township
 - Westtown Township
 - Montgomery Township
 - City of Coatesville
 - West Whiteland Township
 - Uwchlan Township
 - City of Lewes, DE
 - East Whiteland Township (Comprehensive Plan)
 - East Bradford Township (Comprehensive Plan)





COMMUNITY ENERGY INITIATIVES

Chester County Planning Commission - Vision Partnership Program

The Vision Partnership Program (VPP) – Cash Grant is a grant available to Chester County municipalities and multi-municipal groups seeking to improve their planning programs while achieving consistency with and implementation of the goals, objectives, recommendations, and map of Landscapes 3.

There are two VPP cash grant application rounds per year, funding permitting.





COMMUNITY ENERGY INITIATIVES

Northern Chesco Clean Energy Future Task Force

- A group of municipalities that are committed to aggressive clean energy goals, and that are working together to reach them
- Phoenixville Area Clean Energy Alliance (PACEA)
 - Six municipalities
 - Four collaborated on a grant application
 - East Pikeland Township
 - West Pikeland Township
 - West Vincent Township
 - Schuylkill Township
- Primary goals
 - Reach 100% clean energy in municipal operations by 2035
 - 100% clean energy community-wide by 2050



COMMUNITY ENERGY INITIATIVES

Northern Chesco Clean Energy Future Task Force

- Submitted a VPP grant request and won the grant to support their planning and implementation processes.
- Grant used to contract with Practical Energy/SSM Group
- Six elements to the scope
 - Scope 1: Review Clean Energy Transition Plans (CETP)
 - Scope 2: Energy Assessment of Township Facilities
 - Includes buildings and vehicles
 - Scope 3: Assessment of Governing Activities
 - Review ordinances, especially related to renewable energy
 - Scope 4: Community Engagement
 - Scope 5: Create or Provide Access to Educational Materials
 - Scope 6: Facilitate Communication with Communities



COMMUNITY ENERGY INITIATIVES

Northern Chesco Clean Energy Future

- Implementation of energy initiatives in township facilities:
- Buildings
 - Energy conservation/operational changes
 - Building envelope
 - Lighting
 - HVAC and DHW
 - Electrification
 - Solar/renewables
- Vehicles
 - Hybrids
 - Electric vehicles
 - Charging stations





COMMUNITY ENERGY INITIATIVES

Electrification

- Our primary options for renewable energy all involve electricity
- Removing barriers to getting to 100% renewable energy
 - Investing in natural gas or oil fired heating prevents getting to zero carbon emissions for the life of the equipment purchased.
- Our **ONLY** option for getting to net zero carbon emissions is to use electricity for all heating and cooling
- Barriers
 - Cost
 - Capacity



COMMUNITY ENERGY INITIATIVES

Efficient Electric Heating and Cooling Options

- **Geothermal**
 - High efficiency for heating and cooling (highest for cooling)
 - Cooling load and heating load should be close to balanced
 - Highest first cost, but well field has life of 50 – 100 years
- **VRF (Variable Refrigerant Flow)**
 - Nearly as efficient as geothermal – 40% to 50% more efficient than code (heat recovery or heat pump)
 - Heat recovery type can simultaneously heat and cool
- **Air source or water source heat pump**
 - Not as efficient as VRF or geo, but much cheaper to install





A CLEAN ENERGY FUTURE

Reasons to Support Clean Energy Initiatives

- **Environmental impacts**
 - Air and water pollution
 - Climate
- **Health impacts**
 - Asthma and other respiratory ailments
 - COVID
 - Remove combustion gases from your home or workplace
- **Cost savings**
- **Resiliency**
- **Cost certainty – budgeting**
- **Independence/National security**
- **Who do you want to pay your money to?**





Crude Oil Price



Source – US EIA



Natural Gas Price



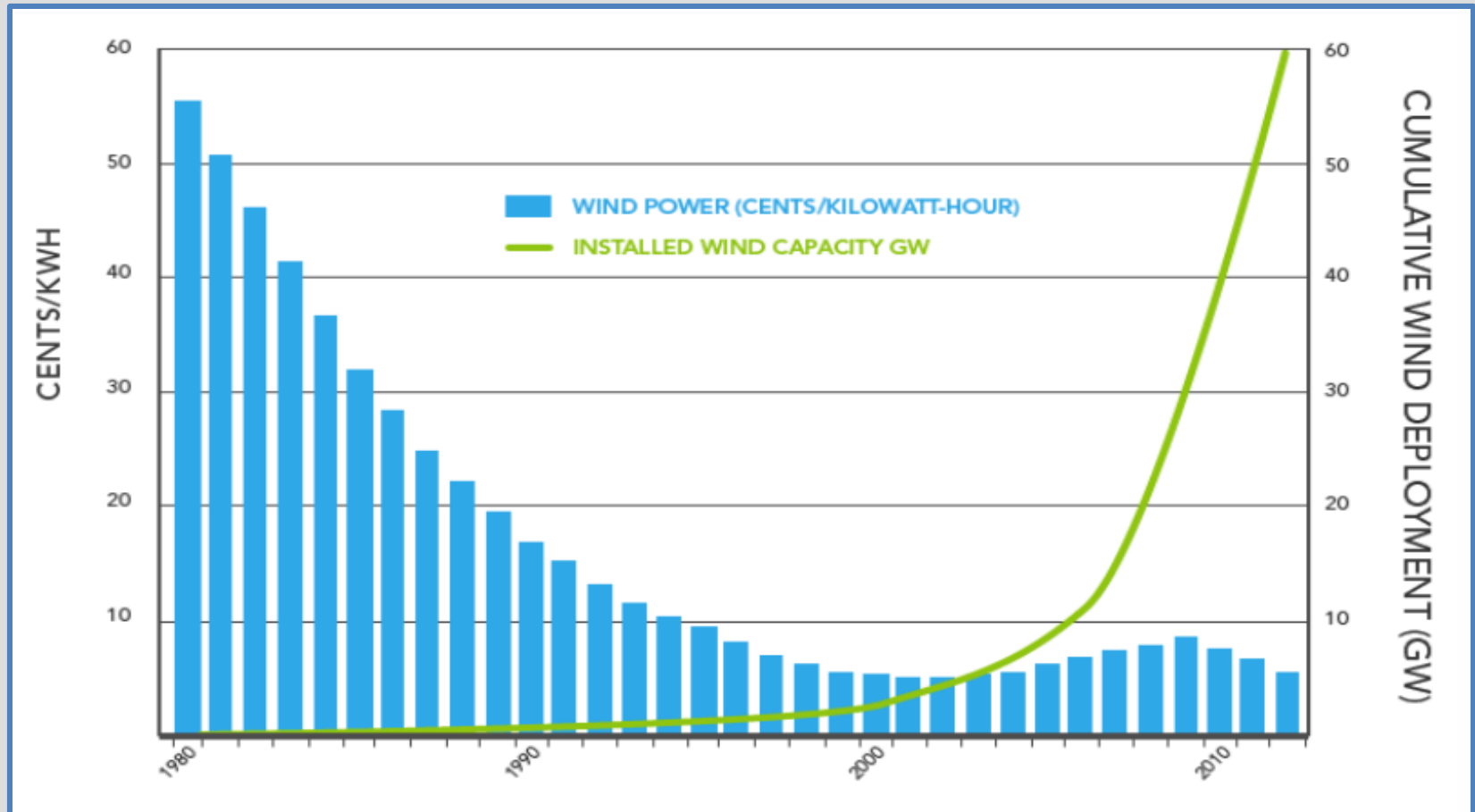
Source – US EIA

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Wind Power Price



Source – US EIA

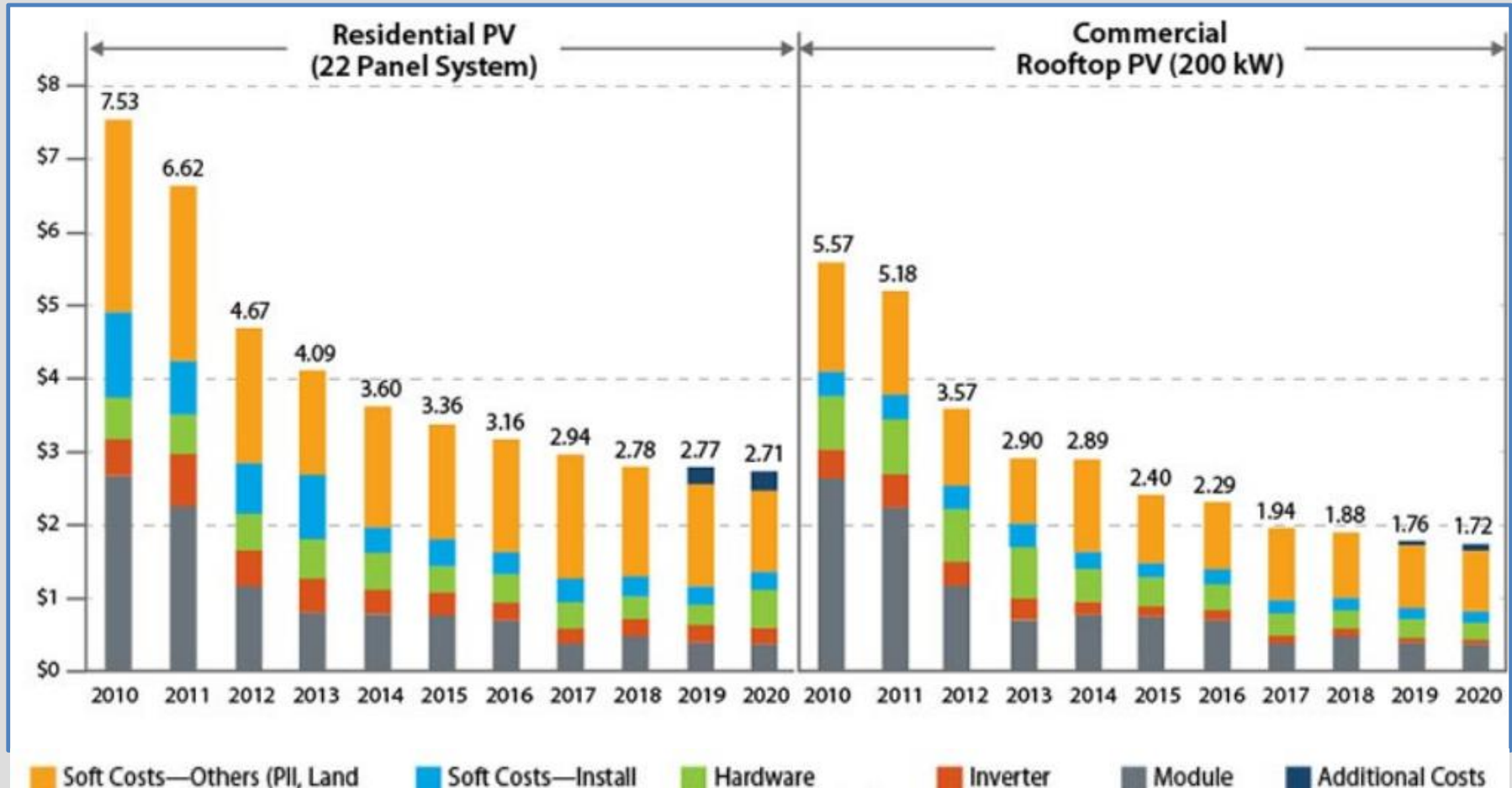
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Solar Cell Price - Installed



Source – US EIA



COMMUNITY ENERGY INITIATIVES

Narrative of Goals/Actions in Each Scope

- Make Clean Energy Transition Plans more accessible to the community
 - Make them available for public review and comment
 - Summarize into “What can I do, how, who, how much \$\$, cost & savings?”
- Establish paths to clean energy in Township operations
 - Energy audit with recommendations for end of life equipment replacements
 - Township examples for others to follow
- Write ordinances that incentivize clean energy and related infrastructure
- Public outreach and engagement – open channels of communication
- Develop guidance documents and educational materials
 - Will likely need to be updated frequently due to technology and market changes
 - Guidance for elected officials, staff, and community
- Track and report results of Township and community leaders’ initiatives
- Hire someone to guide and support community groups, staff, volunteers

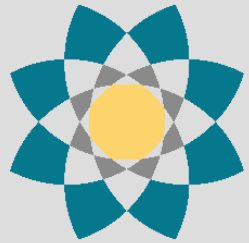


ENERGY INITIATIVES

Final Thoughts

- Reaching clean energy goals will not be easy
 - Extraordinary results require extraordinary action
 - (business as usual will not get you to an extraordinary outcome)
- It really requires a plan to define goals
 - Set goals for short, medium and long term
 - Measure progress, publicize it!
- Make a commitment to move forward every year, and set aside budget every year for your initiative
- In recent years, grassroots level movements exploded
 - Community involvement has grown in a huge way, and will be needed to grow even more
 - Municipal governments are leading the charge in many areas!





We're here to help.



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