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EXHIBIT D

Office of the Town Council  
South Windsor, CT

# MEMO

TO: South Windsor Town Council  
South Windsor Planning & Zoning Commission  
South Windsor Board of Education

FROM: Energy Committee

CC: Scott A. Nolan, Clerk of the Council

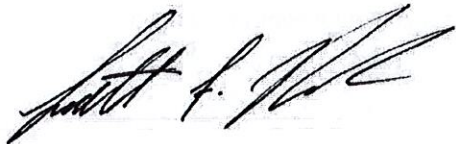
DATE: Friday, May 13, 2022

RE: **COMMUNICATION FROM THE ENERGY COMMITTEE REGARDING  
PA 21-29 INCENTIVES & REQUIREMENTS**

To Whom It May Concern,

On behalf of Councilor Paterna and the Energy Committee, attached, please find communication regarding PA 21-29 incentives and requirements regarding the recommended possible zoning regulation changes for your review.

Should you have any questions, please feel free to reach out to me directly via email at [Scott.Nolan@SouthWindsor-ct.gov](mailto:Scott.Nolan@SouthWindsor-ct.gov) or by calling (860) 644-2511.



**Scott A. Nolan**  
Clerk of the Council

CC: The Hon. Elizabeth Pendleton, Mayor  
Stephen King, Jr., Deputy Mayor  
Michael Maniscalco, Town Manager  
Michele Lip, Town Planner  
Bart Pacekonis, Planning & Zoning, Chairperson  
Dr. Kate Carter, Superintendent of Schools  
Craig Zimmerman, Board of Education, Chairperson  
Darrell Crowley, Board of Education, Director of Facilities  
Andrew Paterna, Energy Committee Chairperson  
South Windsor Town Council, Members

**TOWN OF SOUTH WINDSOR  
ENERGY COMMITTEE**

May 12, 2022

To: South Windsor Town Council  
South Windsor Planning & Zoning Commission  
Cc: South Windsor Board of Education  
Re: Recommendations Regarding PA 21-29 Incentives and Requirements

The South Windsor Planning and Zoning Commission requested the South Windsor Energy Committee to recommend possible zoning regulation changes to implement zoning aspects of Connecticut Public Act PA 21-29 § 4, effective October 1, 2021. This act would allow the PZC to require or incentivize various energy efficiency and renewable energy usage on projects that come before the commission.

**Public Act 21-29**

The office of Legislative Research issued a 2021 version of "Acts Affecting Energy and Utilities," (attached). The text from this document regarding zoning follows:

**"Zoning Regulations**

Prior law allowed municipalities that adopt zoning regulations under statutory authority to encourage certain energy conservation measures, including using solar and other renewable energy. A new law instead allows these regulations to require or promote these measures and expands them to explicitly include distributed generation or freestanding wind and combined heat and power facilities. The new law also expands the conservation measures that municipalities can incentivize developers to use to include any solar and other renewable forms of energy; combined heat and power; water conservation, including demand offsets; and other energy conservation techniques (PA 21-29 § 4, effective October 1, 2021)."

**Summary** Regarding PZC incentives: the Energy Committee has concluded:

- We do not recommend changes to zoning regulations to incentivize energy conservation measures because the PZC has no financial responsibilities and relaxing various bulk requirements (setbacks, parking, coverage, etc.) as an incentive would imply that those bulk requirements were not needed in the first place.
- While the PZC could require certain features, that has the potential of conflicting with upcoming building code changes. We also feel that it is not yet time to disallow further natural gas connections.
- We do recommend strengthening energy efficiency concepts in the POCD and Affordable Housing Plan.



- We also believe the Town Council is able to provide financial incentives that would encourage adoption of energy efficiency measures:
- For new commercial, industrial, and multi-family developments that are considered for tax abatements, a portion of that abatement should be dependent on installation of measures such as rooftop or carport solar, ground source
- For existing multi-family developments (apartments and condos) and certain commercial, industrial projects, token, time limited tax incentives could encourage their respective owners and managers to investigate and participate in new PURA regulations and take advantage of state and federal incentives, to the benefit of their respective occupants.

**PA 21-29**

The act substituted a section of the Connecticut General Statutes, and the relevant text follows [formatting and numbering added here]:

(c) Zoning regulations adopted pursuant to subsection (a) of this section may:

(3) Require or promote

(A) energy-efficient patterns of development

(B) the use of distributed generation or freestanding solar, wind and other renewable forms of energy

(C) combined heat and power

(D) energy conservation

(4) Provide for incentives for developers who use

(A) solar and other renewable forms of energy

(B) combined heat and power

(C) water conservation, including demand offsets; and

(D) energy conservation techniques, including, but not limited to, cluster development, higher density development and performance standards for roads, sidewalks and underground facilities in the subdivision

This act, therefore, provides opportunities for either the PZC or the Town Council to adopt either incentives or requirements to promote the objectives of the act. Let us look at the ways in which each entity can apply either incentives or requirements.



## Technologies of interest in South Windsor

- **Solar photovoltaic (PV)** installations are commonplace in South Windsor businesses and single-family homes but have not been feasible in multi-family residential communities or in certain businesses such as strip malls and business condos. That has changed as of January 1, 2022. The value of energy produced on, say, a condominium or strip mall rooftop, can now be shared with the individual occupants. Rooftop solar projects are reasonably easy to sell because, thanks to federal and state incentives, they almost always lead to savings relative to electricity bought from the utilities.
- **Solar canopies** installed in parking lots are more expensive than rooftop solar projects due to the cost of the supporting structures. Adding solar canopies in existing parking lots is a highly desirable way to add renewable energy to areas nearest to where the energy is used. The advantages of parking lot solar canopies include not displacing farmland, not adding impervious surfaces, shading of vehicles, generation of energy to charge vehicles, removal of heat by converting solar energy to electricity (conservation of energy), and not adding to storm water runoff. Unfortunately, with current incentives, solar canopies barely break even in most situations. In addition, their foundations displace parking area in those same lots.
- **Storage batteries** can now be used to reduce peak demand on the grid, reduce expensive demand charges, and allow customers to take advantage of time-of-day rates. They do this by being charged at night when the electricity is cheaper and other demands are less and then being discharged during the day to supplement the power needed in the facility. The town has already received two proposals for battery installations – one for the Timothy Edwards Middle School in connection with rooftop solar and one for the sewer plant without solar. A typical installation requires dedication of land for the equipment plus land needed for access.
- A **heat pump** is basically an air conditioner that is reversible to provide heat in the winter and cooling in the summer. If the outside unit exchanges heat with the ground instead of outside air, the system becomes dramatically more efficient. Heat pumps, and particularly ground-source (a.k.a. geothermal) heat pumps, provide dramatic reductions in space heating, water heating, and air conditioning costs. It is common for a heat pump to pump four times more heat energy than it consumes as electricity from the utility. Even if that electricity is produced in a power plant that burns natural gas, there are large net carbon savings. Due mainly to the need for wells, ground source heat pumps are more expensive to install, but they provide substantial lifetime cost savings.
- **“Combined heat and power”** refers to the use of waste heat from a generator that produces electricity by burning fuel. We believe that all of South Windsor’s current industry uses electricity from the grid so this technology would not be useful here. Were someone to install an anaerobic digester, which generates electricity from the methane released by organic decay, the waste heat from the generator could be used in the digester or in a neighboring hydroponic food factory.



- **Electric vehicles** will soon become the dominant new car technology. Most owners who live in single-family homes will charge their vehicles in their own garages. But there is a need for charging away from home and for residents of multi-family housing. Current zoning regulations require a certain number of EV chargers in new commercial, industrial and multi-family construction, but there is a need to incentivize managers of existing multi-family developments and workplaces to provide chargers.

### **Potential Incentives and Requirements**

**Incentives available to PZC:** The PZC does not spend or receive money other than its own administrative costs. Hence, we cannot provide direct financial incentives to applicants. On the other hand, we can adjust our regulations to affect the cost of implementing renewable energy and energy efficiency features in a project. In addition, the PZC does not significantly control what happens inside a structure that otherwise meets zoning requirements. For example, we cannot require wiring for electric vehicles inside a single-family home whose lot was approved through a subdivision application.

- Electric vehicle charging facilities, wells for ground source heat pumps, large storage batteries and solar canopies all require land area. An incentive available to the PZC could be to provide a credit to reduce the required number of parking spaces for an industrial, commercial, or multifamily project. Such a credit might be especially useful for allowing existing facilities whose parking areas are already developed to add such facilities. Note that the existing regulations allow a reduction of calculated parking spaces if there is evidence that a smaller amount is sufficient; an applicant could take advantage of that clause.
- PZC regulations impose numerous other requirements such as setbacks and height requirements. In principle, PZC could modify these requirements to, say, allow ground based solar within a setback area, ignore the height addition of rooftop solar facilities, or not require solar panels to be hidden. The Energy Committee does not recommend such changes now.
- **Recommendation:** No relaxation of zoning requirements as an incentive. Other than parking lot requirements, the most effective incentives would come from the Town Council.

**Requirements that PZC could implement:**

- The PZC already requires a certain number of electric vehicle (EV) charging stations or EV Ready parking spaces in a new or substantially renovated commercial, industrial, or multi-family facility. The regulations reduce the parking space requirement if enough EV chargers are installed.
- The PZC could require solar panels on a new site. Requiring solar on new industrial, commercial, or multi-family construction would seem reasonable, but there are potential points of failure, such as inadequate connection points on the grid, inability to qualify for the limited renewable energy credits, and perceived unfriendliness to business.
- The PZC could recommend (through incentives), use of ground source heat pumps for heating and cooling and discouraging gas line connections or oil tanks. Heat pumps add significantly to the initial cost of a project but provide lifetime operating cost savings that readily offset the initial costs.
- The act seems to allow the PZC to add requirements that are not normally in its scope of control, such as requiring energy efficiency features in buildings (e.g., insulation), requiring EV charging capability in single family garages, or requiring solar ready features (conduits, electrical panel space, etc.) in buildings. The committee feels that these options are best left to either the Town Council or to the state when it adopts the 2022 building codes.
- Zoning (and subdivision) changes that implement “energy conservation techniques, including, but not limited to, cluster development, higher density development and performance standards for roads, sidewalks and underground facilities in the subdivision”, should be considered during the upcoming revision to the Plan of Conservation and Development, the Affordable Housing Plan, and the housing moratorium and implemented in zoning regulations as appropriate.
- **Recommendation:** No additional zoning requirements at this time.



**Incentives available to the Town Council:** The council can incentivize desired features of projects in town by reducing taxes or fees.

- The council frequently provides tax abatements to individual commercial, industrial, and multi-family projects to encourage economic development. A portion of the incentive could be conditioned on adoption of desired renewable energy or energy efficiency technologies. This would not reduce revenue further than would the full abatement. **Recommendation: For new commercial, industrial, or multifamily construction, the Council should adopt a policy that conditions the last 1-3% range, of the full value of any tax abatement on**
  - a 1-3% range for connection and activation of rooftop or parking lot canopy solar in a capacity of the lower of (a) the projected annual energy consumption of the facility or (b) the capacity of the unobstructed roof area to hold the most efficient readily available solar panels, regardless of whether the developer used rooftop or canopy solar, and
  - a 1-3% range (TBD) for use of Ground Source Heat Pumps (a.k.a. geothermal) for heating in lieu of natural gas or oil.
- The council could incentivize installation of renewable energy and energy efficiency equipment in existing commercial, industrial, and multi-family projects by providing a time-limited tax reduction or by exempting this equipment from assessments. On the

The following table shows the impact of a 3% tax abatement for a typical commercial facility assessed at \$700K (Appraised at \$1M)

	Year one	7-year
Solar system kWh	125,000	875,000
<b>Buy-all revenue</b>	<b>\$5,000</b>	<b>\$35,000</b>
Assessed value of improvements	\$700,000	
Mil Rate	37.86	
Tax	\$26,502	\$185,514
Abatement %	70%	
Incentive percent	3%	
Abatement % without solar	67%	
Abatement value without solar	\$17,756	\$124,294
Incentive value	\$795	\$5,565
Abatement with solar	\$18,551	\$129,860
Combined value of solar	\$5,795	\$40,565
Percentage boost of tax incentive	16%	16%

The incentive boosts the value of the solar system by 16% during the term of the tax abatement.



other hand, several of the options are already given financial incentives from both the federal and state governments. **Recommendation: To stimulate local management into action in these areas, a token tax abatement, in a range of ½ to 2% for a period of, say, 3 years, might be sufficient to create this movement.**

**Requirements that the Town Council could implement:** The council can implement renewable energy or energy efficiency requirements by ordinance.

- The Town Council could adopt energy efficiency and renewable energy requirements for new buildings in town. However, current building codes adopted by the state require many energy-efficiency features in new or remodeled buildings or with a change of use. In addition, Governor Lamont's Executive Order No. 21-3 charges the State Building Inspector with proposing adoption of the most recent International Building Code and related codes along with features to reduce greenhouse gas emissions. It would potentially be duplicative and counterproductive for the Council to enact requirements on building design and features. **Recommendation: Wait for new building codes.**
- Like the PZC, the Town Council could encourage space heating, water heating and cooking in new construction in favor of electrically powered heat pumps and electric cooking. However, this idea needs time to grow in acceptability. **Recommendation: Wait for state action.**

Sincerely, for the Energy Committee:

Stephen Wagner, (past Chairperson), Energy Committee  
Marek Kozikowski, Deputy Chairperson, Energy Committee  
Andrew Paterna, Chairperson, Energy Committee

Energy Committee members: Stephen Wagner (Resident, Chair WPCA), Hank Cullinane (Resident), Larry Brown (Resident), Athena Loukellis (Resident), James MacPherson (Resident), Sherman Tarr (Resident), Marek Kozikowski, Deputy Chairperson (Town Council), Cesar Lopez (Town Council), Andrew Paterna, Chairperson (Town Council), Jeff Doolittle (Deputy Director Public Works/Town Engineer), Darrell Crowley (Director-Facility Operations-SW Schools)