CHITTENDEN COUNTY RPC
Communities Planning Together

CCRPC Long Range Planning Energy Sub -Committee

AGENDA

*=attached to agenda in the meeting packet

DATE: **Tuesday, September 19, 2017**

TIME: **5:00 p.m. to 7:00 pm**

PLACE: **CCRPC Office, 110 West Canal Street, Suite 202, Winooski, VT.**

Wi-Fi INFO: **Network = CCRPC-Guest; Password = ccrpc$guest**

1. **Welcome + Introductions (5 minutes)**

2. **Review August 15, 2017 Minutes* (5 Minutes)**

3. **Discussion of Siting Policy Statements***
   (1) Staff has edited and reorganized the energy siting policies based on discussion with the Board, the Executive Committee, the PAC, the LRPC and the Energy Subcommittee. The constraints on energy development are now described in Strategies 3.2.3 and 3.2.4, which currently discuss natural resources preservation. Strategy 3.2.2.4 still includes energy plan actions and policies. Siting policies are now split into two sections: "Constraint Policies" and "Suitability Policies". "Constraint Policies" place limits on renewable energy generation development. "Suitability Policies" provide a list of desirable characteristics for energy facilities on unconstrainted lands, which are considered guidelines rather than regulations.
   (2) The known and possible constraints discussed in the text are shown on Map 6 of the current ECOS Plan. Map 6 currently shows "areas with natural, scenic, agricultural and/or recreational value." The revised version included here has been updated to reflect Act 174 standards and now maps known and possible constraints. Known constraints replace the previously mapped protected areas, and possible constraints replace the previously mapped partially protected areas. Additionally, a map of wind potential is provided, because it is referenced in Policy 3.2.2.4.b.vii.
   (3) Staff has developed a methodology for determining which local constraints are "known" versus "possible." Staff will reach out to municipalities in October to reach agreement on the list of known and possible local constraints that will ultimately be included in the ECOS Plan.
4. **Update**
   a. Generation Targets
   b. DPS Comments*

5. **Next Steps** *(5 minutes)*

In accordance with provisions of the Americans with Disabilities Act (ADA) of 1990, the CCRPC will ensure public meeting sites are accessible to all people. Requests for free interpretive or translation services, assistive devices, or other requested accommodations, should be made to Emma Vaughn, CCRPC Title VI Coordinator, at (802) 861-0114 or evaughn@ccrpcvt.org, no later than 3 business days prior to the meeting for which services are requested.

CHITTENDEN COUNTY RPC
Communities Planning Together

CCRPC Long Range Planning Energy Sub -Committee

Minutes

DATE: **Tuesday, August 15, 2017**

TIME: **5:00 p.m. to 7:00 pm**

Attendees:

- Catherine McMains, Jericho (Chair)
- Karen Adams, Colchester
- Matt Burke, Charlotte alternate
- Jim Donovan, Charlotte
- Keith Epstein, South Burlington
- Jeff Forward, Richmond
- Sharon Murray, Bolton
- Irene Renner, Essex

Staff:

- Regina Mahony, Planning Program Manager
- Emily Nosse-Leirer, Planner

1. **Review July 18, 2017 Minutes**
   Staff will attach the language options A, B and C to the minutes, since the three letter options are referenced a few times in the minutes. Keith Epstein made a motion to accept the minute and Karen Adams seconded. Sharon Murray, Jim Donovan and Irene Renner abstained. The minutes were adopted.

2. **Discuss Revised Generation Targets for Municipalities**
   At the last meeting, the committee reviewed high and low county-wide electric generation targets. The high target is 25% of the state's generation goal, and the low target is 15% of the state's generation goal. Staff allocated the targets to the municipal level by averaging the municipal of county population and the municipal share of electricity consumption, and applying that proportion to the county-wide goals. Existing generation in each municipality is subtracted from this share, so municipalities "get credit" for generation already sited in their community. Each municipality then has a net new generation target. This allocation is included in the packet. It was confirmed that generation only "counts" for a municipality if it is *physically located* in that municipality. (There's no consideration of RECs, who owns the facility, etc.) While Burlington Electric Department has argued that they should "get credit" for Georgia Mountain Wind, the solar installation at the Burlington Airport and the Winooski One dam, because they own all the facilities, this argument is contradictory to DPS guidance on the issue. The generation for the turbines at Georgia Mountain that are located in Chittenden County is counted towards Milton's goal, and the airport solar array is counted towards South Burlington's. The dam is located directly on the border of Winooski and Burlington, so this generation is split in half.

Staff let the committee know that there is a discrepancy between the county's total current renewable generation as reported by the Vermont Energy Action Network Energy Dashboard and the Department of Public Service. The current generation as reported by DPS is 556,623 MWh, but the Energy Dashboard reports only 383,053 MWh. The targets reported here are based on the Energy Dashboard statistics. Depending on which number is correct, targets could be lower.

There was substantial discussion on how to report targets for municipalities that already produce more than their annual targets. The consensus was that these targets should be reported as being over 100% met, and the net target will be reported as zero instead of as a negative number.

These targets will likely be updated every 5 years along with the ECOS Plan, which will allow the targets to take into account new generation facilities.

The committee agreed that CCRPC should make a recommendation to the utilities to help update the Energy Dashboard with actual energy generation rather than the permitted or nameplate generation.

3. Screening of Local Constraints

Staff explained the methodology used to categorize requested municipal constraints as "known" and "possible" constraints. This methodology is included in the packet. Staff will work with municipalities individually if there are concerns about the categorization. Sharon Murray suggested looking at both regulations and the Plans because some of the Plans are more restrictive than the bylaws, especially if the plan is newer than the bylaws.

Originally, constraints in draft documents were included as "possible" constraints to give municipalities time to finish their plans and bylaws, but it was determined that we should have a deadline for when they can make local changes that can be incorporated into the Regional Plan. After that, anything still in draft form will not be included at all.

Additionally, a "time stamp" should be added to the discussion of local constraints to make it clear what version of the regulations or town plan was evaluated.

It should be noted that there is a footnote missing from the table included in the packet. A single asterisk means that a municipality requested something to be a known constraint, but staff moved it to a possible constraint.

4. Discussion of Siting Policy Statements*

The committee suggested looking at the Bennington Regional Energy Plan's definition of "suitable sites" for energy, which asks developers to use a checklist to determine whether or not a site is suitable.

The committee reviewed the draft siting policies provided by staff in advance of the meeting. It was determined that saying that renewable energy generation should locate on preferred sites was too broad a statement, because preferred sites don't make sense for wind, just for solar. In addition, preferred sites may not be appropriate for solar development that's not net metered, so the policy should not direct solar development exclusively there—it's basically a first choice, not the only choice.

Saying that energy development is preferred in areas planned for growth if possible also only really applies to solar.

It needs to be added that the criteria are policy *guidance*, and developers should meet as many as possible, but not necessarily all of them.

Sharon Murray suggested, and the committee agreed, that the statements should be reworded to eliminate problem words like "shall" or "should." Instead of "renewable energy generation should be located on…" we will reword as "locate renewal energy generation on…" This language is still aspirational plan language instead of bylaws but it will be given more weight by the PUC because it is clear, consistent and unambiguous. This will also make Policy III more positive by having it describe where we should locate things, not where we shouldn't.

There was extensive discussion about whether we should use the prime and base wind potential map as a siting guideline by saying "Locate large scale wind installation in areas of prime and base wind potential." It was determined that even though some questions remain about the data analysis, wind potential is a useful map and the policy may be useful since it is a guideline, not a requirement.

There was extensive discussion about the policy "Locate renewable energy generation where existing or planned (or will have adequate capacity) transmission or distribution infrastructure exists." Some members felt that every project needs at least a small extension of 3 phase power. However, other members felt that expanding 3 phase power can allow for other kinds of commercial development and therefore may have unanticipated consequences, and therefore projects should only be near existing or planned transmission and distribution facilities. Staff will map a series of buffers around 3-phase power for the committee to consider. Within 1,000 feet of a planned or existing 3-phase power line may be the correct policy.

It was discussed that the plan should mention that local policies that are constraints or preferred sites for energy development may change as local plans change over time.

The committee discussed the fact that other renewable energy generation facilities like biomass plants should also not impact constraints, in keeping with the other policies of the plan.

5. <u>Next Steps</u>

The committee will meet again on September 19.

3.2.2 STRIVE FOR 80% OF NEW DEVELOPMENT IN AREAS PLANNED FOR GROWTH, WHICH AMOUNTS TO 15% OF OUR LAND AREA AND PROTECT NATURAL, CULTURAL, HISTORIC, OR SCENIC RESOURCES

4. Energy – Transform the Region's energy system to meet the goals of Vermont's energy and greenhouse gas reduction goals.

a. Reduce energy consumption and decrease greenhouse gas emissions, to support the State's goals:
   - Reduce greenhouse gas emissions 50% from 1990 levels by 2028,
   - Reduce greenhouse gas emissions 75% from 1990 levels by 2050,
   - Reduce per capita energy use across all sectors (electricity, transportation and heating) 15% by 2025,
   - Reduce per capital energy use across all sectors (electricity, transportation and heating) by more than 1/3 by 2050, and
   - Weatherize 25% of all homes by 2020.

   i. Continue partnerships with Vermont Gas, Burlington Electric Department, Efficiency Vermont and the State Weatherization Assistance Program to facilitate the weatherization and increased energy efficiency of housing stock and other buildings.
   ii. Promote alternatives to fossil fuels for heating by working with partners such as Efficiency Vermont to educate developers and homeowners on the benefits of technology such as cold climate heat pumps, wood heating and geothermal systems, and by supporting alternative forms of heating. Examples of alternative forms of heating include district heating (for example, using waste heat from the McNeil Plant to heat buildings in Burlington) and biogas generation (capturing the methane produced by landfills or farms and using it instead of natural gas).
   iii. Work with partners to establish a consistent energy code for all jurisdictions and geographic areas to avoid disincentives for infill development in areas planned for growth.
   iv. Reduce fossil fuel consumption in the transportation sector, through the Transportation Demand Management and electric vehicle promotion strategies outlined in Part 6c of this section and in the Metropolitan Transportation Plan (MTP) included in this plan.
   v. Collaborate with the State of Vermont and utilities to ensure that state energy policy implementation (i.e. permits for non-renewable fuels) reflect state energy goals.
   vi. Work with partners to increase rooftop solar generation wherever possible, especially net metering on publicly owned buildings to reduce public money spent on energy costs, provided infill development is not precluded.
   vii. Provide assistance to municipalities to enhance town plans to be consistent with Act 174 standards for the purpose of enabling municipalities the ability to gain substantial deference in the Certificate of Public Good Section 248 process. This assistance will include working

with municipalities to identify natural, cultural, historic, or scenic resources to be protected from all development types and identify preferred locations for renewable energy generation facilities.

viii. Use the Vermont Energy Action Network (VEAN) Energy Dashboard to educate residents and municipalities about opportunities to reduce energy use and switch to renewable energy sources.

b. To meet the Vermont Comprehensive Energy Plan's goal of using 90% renewable energy by 2050, xx,xxx MWh of new renewable energy generation will need to be sited in Chittenden County. This energy can be produced through a variety of technologies, including solar, wind, biodigesters, biomass generators, expanded hydroelectric capacity at existing dams. The following statements are CCRPC's energy facility siting policies.

Constraint Policies: Energy generation is constrained in certain areas due to state and local restrictions on development.

i. Site renewable energy generation to avoid state and local known constraints and to minimize impacts to state and local possible constraints, as defined in strategies 3.2.3.1.f, 3.2.4.1.e, 3.2.4.2.e.

ii. Ground-mounted solar development must comply with applicable state regulations, including setback standards as defined in 30 V.S.A. §248(s) and screening requirements as defined in 30 V.S.A. §248(b)(B).

Suitability Policies: Unconstrained areas have different levels of suitability for renewable energy generation. In unconstrained areas, energy generation facilities should meet as many of the following guidelines as possible and relevant.

iii. ~~Site~~Locate solar generation on previously impacted areas (such as existing structures, parking lot canopies, previously developed sites, brownfields, landfills, or the disturbed portion of gravel pits or quarries).

iv. Locate solar generation (and residential scale wind?) in Chittenden County's areas planned for growth, provided infill development is not precluded.

v. Locate ground-mounted solar larger than 15 kW and large-scale wind[1] installations outside of state designated village centers, growth centers, downtowns, new town centers, neighborhood development areas, and historic districts on the State or National Register.

vi. Locate solar and wind generation in areas identified ~~in plan~~ as preferred or suitable sites in a municipal plan or in a joint letter from the municipality and CCPRC, as described in Chapter 4.

[1] Large-Scale Wind means any wind turbine with a hub height of 50m or higher, not including the blade. Commercial-scale wind has a capacity between 100kW and 1MW, and utility scale wind has a capacity of 1MW or more.

vii. Locate wind generation in areas with high wind potential, such as the prime and base wind potential areas shown on Map X.

~~i.~~viii. Locate energy generation where distribution and transmission infrastructure has adequate capacity, where it will not interfere with the reliability of the electric grid, and where needed connections or extensions can be made within 1,000' of existing distribution and transmission lines.

3.2.3 Improve the safety, water quality, and habitat of our rivers, streams, wetlands and lakes in each watershed.

While striving toward all of these ECOS strategies, and particularly Strategy #2 – 80% of growth in 15% of our land area, it is essential to do so in such a way that we do not impair our essential water resources (including potable water) and that we prepare ourselves for the impacts of a changing climate.

1. **River Hazard Protection** – Develop and implement adaptation strategies to reduce flooding and fluvial erosion hazards. While supporting planned growth, ensure that growth is evaluated in terms of preparedness for a changing climate. Chittenden County will continue its efforts, along with the municipalities, to avoid development in particularly vulnerable areas such as floodplains, river corridors, wetlands, lakeshore and steep slopes; protect people, buildings and facilities where development already exists in vulnerable areas to reduce future flooding risk; plan for and encourage new development in areas that are less vulnerable to future flood events (see Section 3.2.2); and implement stormwater management techniques to slow, spread and sink floodwater (see the Non-Point Source Pollution section below).
    a. Identify problem locations - Conduct on the ground inventories and map flow and sediment attenuation locations and problematic infrastructure (undersized culverts, eroding roadways, "vulnerable infrastructure" - infrastructure subject to repeat damage and replacement, etc.).
    b. Revise bridge/culvert designs - Revise public works and zoning ordinances with culvert and bridge design specifications that allow for wildlife passage and movement of floodwater and debris during high intensity events. Implement culvert and bridge designs that produce stable structure in river channels (i.e. fluvial geomorphology).
    c. Protect river corridors– Existing bylaws protect the majority of Fluvial Erosion Hazard (FEH) areas with stream setbacks and floodplain regulations. Work with ANR to get the FEH data incorporated into the River Corridor Protection Area maps. Work with municipalities and ANR to improve bylaws to protect the River Corridor Protection Areas or River Corridors not currently protected and enforce these bylaws. Continue protection of river corridors including non-regulatory protection measures such as stream re-buffering, river corridor easements on agricultural lands, river corridor restoration and culvert and bridge adaptation.
    d. Support non-regulatory conservation and/or preservation of vulnerable areas through public and land trust investments, including identification of repetitively damaged structures and provide assistance to elevate, relocate or buy out structures, and identify where flood storage capacity may be restored and conserved.
    e. Participate in the development and implementation of the Lamoille, Winooski and Direct to Lake Tactical Basin Plans. CCRPC will work with the State, municipalities and other partners to address river hazard protection, flood resiliency and water quality through these Plans – including prioritizing projects for funding.
    f. To protect water quality, locate development to avoid field-verified state and local known constraints, and to minimize impacts to field-verified state and local possible constraints.

i. State and Local Known Constraints, as protected by municipalities and State agencies, are shown on Map 6 and include the following: DEC River Corridors, FEMA Floodways, and Municipal Water Quality Setbacks, Local Known Constraints TBD, as of (date)

~~i.~~ii. State and Local Possible Constraints are shown on Map 6 and include the following: FEMA Special Flood Hazard Areas and hydric soils, Local Possible Constraints TBD, as of (date)

3.2.**4 Increase investment in and decrease subdivision of working lands and significant habitats, and support local food systems.**

1. **Habitat Preservation** - Protect forests~~,~~ and wetlands ~~and agricultural lands from development~~, and promote vegetative landscaping in urban areas in order to maintain natural habitats, natural storm water management and carbon sequestration. This will keep people and infrastructure out of harm's way and allow for natural flood attenuation areas.
   a. Inventory - Conduct on the ground surveys and inventories of significant habitats (include wetlands), connectivity corridors, scenic resources and locations of invasive species and map this information. Incorporate this data into municipal and regional plan text and maps and establish specific policies that address and protect these resources.
   b. Municipal Development Review Regulations - Develop clear definitions of the resources to be protected and establish standards to describe how to protect these resources within zoning and subdivision regulations.
   c. Education - Educate engineers, developers, real estate professionals, planners and the public regarding resources and methods for restoration and protection.
   d. Non-regulatory Protection - Support non-regulatory conservation and/or preservation through public and land trust investments. Establish invasive plant removal management plans, implement the plans and include long-term monitoring.
   e. To protect significant habitats, locate development to avoid field-verified state and local known constraints, and to minimize impacts to field-verified state and local possible constraints
      - State and Local Known Constraints, as protected by municipalities and State agencies, are shown on Map 6 and include the following: State -significant natural communities and rare threatened and endangered species, vernal pools (unconfirmed and confirmed), and Class 1 and Class 2 Wetlands, Local Known Constraints: TBD (as of date)
      - Possible State and Local Constraints, as protected by municipalities and State agencies, are shown on Map 6 and include the following: Protected Lands (state lands in fee simple ownership and privately conserved land), deer wintering areas, the Agency of Natural Resources Vermont Conservation Design

Highest Priority Forest Blocks, Local Possible Constraints: TBD (as of date)

2. **Working Lands Implementation** – To preserve the soul of Vermont, as well as move forward into the future with resiliency, Vermont needs to protect the farmland and forestland we have and support existing and new operations (including, but not limited to, un-intensive urban and suburban home gardens and mini-homesteads). ~~Support implementation of the Farm to Plate Strategic Plan and the VT Working Landscape Partnership Action Plan.~~
    a. Municipal Development Review Regulations - Develop clear definitions of working lands to be protected and establish zoning and subdivision standards to describe how to protect these areas from development so that they may be retained and accessible as "working" lands. Maintain access and scale of working lands to ensure viability after subdivision in the rural landscape (including but not limited to protection of log landings of previously logged forested parcels, zoning techniques such as fixed area ratio zoning to separate lot size from density, conservation zoning and homeowners association bylaws that allow for farming on the open space lots, etc.); while promoting urban agriculture in areas planned for growth. While farming is generally exempt from municipal zoning, some structures such as farm houses, processing facilities, the generation of energy for on-farm use, and on-farm retail and related enterprises may be regulated. The economic viability of farm enterprises can often depend on these facilities so municipal regulation should not impede reasonable farm related improvements.
    b. Infrastructure & Systems – support establishment of food processing industries, value-added product markets, workforce training, etc to help support the viability of these industries.
    c. Support non-regulatory conservation and/or preservation through public and land trust investments (including but not limited to municipal land conservation funds).
    ~~c.~~d. Work with farmers and the Farm to Plate Initiative to balance this plan's goals of a strong local food system and increased production of renewable energy.
    e. To ~~protect~~preserve working lands, locate development to avoid field-verified state and local known constraints, and to minimize impacts to field-verified state and local possible constraints

        - Possible State or Local Constraints, as protected by municipalities and State agencies, are shown on Map 6 and include the following: Agricultural soils and Act 250 agricultural soil mitigation areas. Local Possible Constraints TBD

Constraints and Suitability – Draft August 15, 2017

Constraints Methodology

State Constraints

The Department of Public Service has distributed energy planning standards, which establish known and possible constraints at the state level. Regions and municipalities can make constraints more restrictive (i.e. turn a possible constraint into a known constraint) but not less restrictive (i.e. turn a known constraint into a possible constraint). CCRPC has not made any changes to state constraints.

Local and Regional Constraints

Because one of the purposes of Act 174 is to give local land use policies greater weight in the Public Utilities Commission process, CCRPC's ECOS Plan includes local constraints in the energy siting maps and policies. In late 2016, CCRPC staff discussed the possibility of substantial deference for municipal land use policies with planning commissions and municipal staff, and asked municipalities to provide a list of "constraints" that they would like to see given substantial deference. The CCRPC Long Range Planning Committee Energy Subcommittee (the Subcommittee) asked staff to map the constraints provided by the municipalities. Municipalities requested known constraints (areas in which they wanted no renewable energy development), possible constraints (areas on which they wanted renewable energy development to be limited or impacts to be mitigated or minimized). All requested constraints were mapped in early 2017 and reviewed by the Subcommittee.

Based on feedback from the Department of Public Service, it was determined that for constraints on energy to be consistent with the Act 174 energy planning standards, the constraints had to be restrictive of all development, not just renewable energy development. With this in mind, CCRPC staff screened the constraints originally requested by municipalities and determined that a number of them originally requested as known constraints were not equally restrictive of all development. These constraints were considered possible constraints, based on the description below. If no supporting policies or regulations could be located to support a request for a possible constraint, the constraint was not included at all.

Please note that this is an ongoing process and CCRPC staff will work with municipalities to ensure that constraints are adequately characterized.

These local constraints are included in the ECOS Plan due to their importance at the local level. The ECOS Plan ~~included~~ classified local constraints based on the following methodology~~:~~. However, the description of constraints below is for classification only, and these descriptions are not the definitions of known and possible constraints as discussed in the policies of the ECOS Plan.

> **Known Constraints**: Zoning districts or resource areas where development is prohibited with no exceptions. Typically, phrases such as "development *shall not* take place" are used to denote these areas.
>
> **Possible Constraints**: Zoning districts or resource areas such as those in which: ~~where~~
>
> - Development is not completely prohibited, but impacts of development should be "minimized", "avoided," "limited," "avoided *where possible*," mitigated or similar;
> - Development is allowed only following conditional use review;
> - The goals of the zoning district are such that large scale energy development may not be appropriate, such as scenic overlay districts;
> - ~~The regulation or plan describing the development restriction is in draft format.~~

These constraints are identified in an adopted municipal plan or municipal land use regulation~~s~~ such as zoning regulations or subdivision regulations, in effect as of December 1, 2017(?). ~~-~~Over the next few years CCRPC will be working with municipalities to complete energy planning, and will continue to review municipal plans through

CCRPC's *Guidelines and Standards for Confirmation of Municipal Planning Processes and Approval of Municipal Plans*. CCRPC will check to ensure that any local policies don't preclude municipalities from meeting their energy generation targets and complying with the state energy goals. CCRPC will determine on a case by case basis if an edit is needed to the *ECOS Plan*.

CCRPC staff evaluated constraints based on the requests of the municipality. Not every development constraint in Chittenden County is reflected in the regional energy planning process, because some municipalities did not request any known or possible constraints (no requests from Buel's Gore, Huntington or St. George), or only requested that some of their resource protections ~~a portion of their regulations be~~ considered.

While there was some overlap between the constraints requested by each municipality, no constraints emerged as being universal restrictions to development across the county. Therefore, no region-wide constraints were added.

Constraints are discussed in Strategies 3 and 4 of the ECOS Plan, which address~~es~~ the protection of natural resources.

Suitability Methodology

Constraints represent areas in which development, including energy generation, is restricted. However, areas in which development is generally appropriate still have different levels of *suitability* for different types and scales of renewable energy generation. This may be due to conflicts between energy generation and other types of planned development, or infrastructure capacity issues. Therefore, we have incorporated considerations of scale into our siting policy statements in Chapter 3 to address suitability.

Melanie Needle

From: Potter, Dan <Dan.Potter@vermont.gov>
Sent: Thursday, August 31, 2017 8:44 AM
To: Melanie Needle
Cc: McNamara, Ed; Margolis, Anne
Subject: CCRPC Draft Plan Comments

Hello Melanie,

Please see our comments on CCRPC's draft plan below. I am happy to discuss if you have any questions. I will be away tomorrow and Monday, but back on Tuesday.

Sincerely,
Dan Potter

Overall Comments

Generally speaking, your plan appears to be in pretty good shape. There does not appear to be any major deficiencies that would result in a denial of an Act 174 request for a determination of energy compliance. Having said that, this review was conducted at the staff level of a draft plan, is not a formal review, and the decision ultimately rests with the Commissioner of the Department.
Additionally, when submitting for a determination it is best to check either Yes or N/A. If N/A is selected, it is best to articulate why that particular standard does not apply.

Standard Specific Comments

Standard 4 – Analysis and Targets

- Please document all steps, assumptions, and data sources for current energy use calculations
- Please document any modifications made to the LEAP scenario targets. It looks like changes have been made to the commercial thermal energy targets.
- Current LDV energy consumption is significantly lower than the LEAP scenario starting point. Please provide an explanation, if possible.
- Provide estimates of thermal energy consumption for fuels other than Natural Gas.
- The current kWh consumption number appears to be high. Consider doublechecking this calculation.
- The existing generator capacity figures do not match PSD records for permitted capacity.
- Explain the methodology used for arriving at generation capacity targets and disaggregating to the municipal level.
- The data appendix discusses rooftop solar potential, but it is not mentioned in Section 2.5.5, where it might fit in with the discussion of targets and ability to meet targets (this discussion is just framed in terms of acreage).

Standard 6 – Conservation and Efficiency

- Item 3.2.2.4.a.iii on Page 101 discusses establishing a consistent energy code. The state has statewide energy codes, stretch energy codes, and guidelines that could be adopted by a municipality.

Standard 7 – Transportation

- Consider providing an overview of the projects included in the TIP and how those projects will help meet Standard 7.
- Does increased access automatically lead to increased use? Probably, but the nexus could be discussed.
- The plan states support for an EV charging network and natural gas and biodiesel HDVs, but does not include any implementation actions.

Standard 8 – Land Use

- The Future Land Use Map was not included in the materials sent to the department to review.

Standard 9 – Renewables

- The data appendix contains rooftop and ground-mounted solar potential only (not all generation potential), and does not articulate potential from preferred and potentially suitable areas. It is not clear if there is a relationship between such areas and "prime" and "base" "land available for wind and solar generation." Also, it is not clear if solar and wind generation potential maps are the same thing as the resource areas maps.

Standards 10-12 – Mapping

- In the maps appendix, you should consider cross-referencing with GMP's solar map to show areas with solar saturation, e.g. in Hinesburg.
- If possible, it would be beneficial to map any known preferred locations (e.g. brownfields should be available as a layer through ANR), with the caveat that the default should be the narrative list, not the map.

Dan Potter
Energy Policy and Program Analyst
Department of Public Service
802-828-4081