Central Vermont Regional Planning Commission

CENTRAL VERMONT REGIONAL ENERGY COMMITTEE

February 23, 2017
4:00pm
Central Vermont Medical Center
Board Room

AGENDA

1. CALL TO ORDER & WELCOME

The Chair will call the meeting to order.

2. CHANGES OR AMENDMENTS TO THE AGENDA

The Committee should consider any changes or amendments to the agenda.

3. PUBLIC COMMENTS

Members of the public are encouraged to provide comments related to items not on the agenda.

4. APPROVAL OF MINUTES

The Committee should review and consider approval of the draft minutes from the January 23, 2017 Regional Energy Committee meeting.

5. REGIONAL & MUNICIPAL TARGETS FOR RENEWABLE ENERGY

Staff will provide an overview of the regional targets that have been provided to the Central Vermont Regional Planning Commission for solar and wind resources. Additionally, staff will provide the Committee with an overview of the targets broken down by municipality including the methodology used to establish the municipal targets. The Committee should review the methodology and targets to determine if the process will create a reasonable approach to achieve the regional targets for energy generation. Information regarding the targets and methodology is ***included*** with the agenda.

6. MUNICIPAL INPUT SURVEY

Staff will provide an update on the municipal input survey that was distributed to municipal elected officials, planning commissions, conservation committees, and energy committees including the status of the survey and intended outcome. Additionally, staff will provide an overview of future survey and outreach activities. This effort is being done as part of the public engagement process that was presented at the January 21st Regional Energy Committee Meeting.

7. OTHER BUSINESS

The next meeting of the Regional Energy Committee will be on Thursday, March 30, 2017.

8. ADJOURN

29 Main Street Suite 4 Montpelier Vermont 05602
802-229-0389 E Mail: CVRPC@CVRegion.com

CENTRAL VERMONT REGIONAL PLANNING COMMISSION
REGIONAL ENERGY COMMITTEE
JANUARY 23, 2017
MEETING NOTES

The regular meeting of the Central Vermont Regional Planning Commission's Regional Energy Committee was held on Monday, January 23, 2017 at 4:00PM in Conference Room 1 of the Central Vermont Medical Center.

Committee Members Present:

Jamie Stewart – Central Vermont Economic Development Corporation
Brian Fitzgerald – RPC Representative - Town of Duxbury
Bram Towbin – Town of Plainfield Selectboard
Don LaHaye – RPC Representative - Town of Waitsfield
Alex Bravakis – Novus Energy Development
Barbara Conrey – City of Montpelier Energy Committee
Ron Krauth – RPC Representative - Town of Middlesex
Paul Zabriskie – Capstone Community Action
Steve Fitzhugh – Town of Northfield Planning Commission
Karen Horn – Vermont League of Cities & Towns
Karin McNeill – Agency of Natural Resources
Anne Margolis – Vermont Public Service Department

Committee Members Not Present:

Jackie Cassino – Agency of Transportation
Billy Coster – Agency of Natural Resources
Patty Richards – Washington Electric Coop
Julie Potter – RPC Representative - Town of East Montpelier
Janet Shatney – RPC Representative - Barre City
Robert Dostis – Green Mountain Power
Mark Sousa – Green Mountain Transit

Others Present:

Eric Vorwald – CVRPC Senior Planner
Marian Wolz – CVRPC Assistant Planner

CALL TO ORDER & WELCOME:

The meeting was called to order by Mr. Fitzhugh at 4:04PM.

CHANGES OR AMMENDMENTS TO THE AGENDA:

No changes to the agenda were recommended.

PUBLIC COMMENTS:

No members of the public presented comments.

APPROVAL OF MINUTES

Bram Towbin moved to approve the December 12, 2016 minutes as presented; Ron Krauth seconded. Motion carried.

ACT 174 ENERGY PLANNING STANDARDS & REGIONAL ENERGY PLAN OVERVIEW:

Mr. Vorwald provided an overview of the Act 174 Energy Planning Standards noting that the Regional Energy Plan would be laid out in-line to meet the standards set by Act 174. He noted there are three main components to the standards including Analysis & Targets; Pathways/Implementation Actions; and Energy Resource and Constraint Mapping.

Mr. Towbin asked a question about including hydroelectric activities that a town might undertake in the count of current energy generation and how the plan would discuss regulation of these small scale hydropower projects. Mr. Fitzhugh noted that small scale hydroelectric projects fall under the FERC (Federal Energy Regulation Commission).

Mr. Vorwald noted that hydroelectric and biomass projects will be counted in the current energy generation use for towns. Ms. McNeill asked a question about setting efficiency and energy reduction goals and if those goals are provided. Ms. Wolz noted that while the RPCs are not directly given goals for energy efficiency and reduction like they are for solar and wind renewable energy generation, setting goals for efficiency and reduction will be an important component of the energy planning process and will involve input from the member municipalities. Ms. Horn asked a question about the origin of the renewable energy generation targets from the Department of Public Service.

Ms. Margolis responded with a background of the target setting and that they originate from the Comprehensive Energy Plan and the work on energy planning with the pilot RPCs. Ms. Margolis added that all energy projects permitted by the Department of Public Service up to late December 2016 are already included in the renewable energy generation targets. The targets the RPCs have reflect the new generation needed for the Region.

Mr. Fitzgerald asked about considering the economic feasibility of renewable siting projects. Ms. Wolz noted that while doing in-depth economic feasibility analysis for energy siting projects is not a requirement of the Energy Planning Standards and will not be a component of the Regional Energy Plan, CVRPC is looking to engage municipalities in the conversation of more general economic feasibility (ie. is a site in proximity to transmission lines/consumers). Mr. Zabriskie brought up the importance

of building codes and how municipalities can use them to implement efficiency and reduction requirements such as installing LED lights or toilet flush limits to increase capacity of the municipal water system. He noted the importance of focusing the Regional Energy Plan on efficiency and reduction measures just as much as generation and siting policies.

Mr. Stewart brought up the importance of keeping the focus of this effort at a regional level and that getting into too much detail regarding specific sites or specific economic feasibility will defeat the purpose of the plan. Mr. Fitzhugh followed up with the remark that this plan will look forward 30 years and cannot account for technology advances that may appear in the future.

OVERVIEW OF PUBLIC ENGAGEMENT ACTIVITIES:

Ms. Wolz gave an overview on the public engagement timeline and asked Committee members to provide input on the groups the plan will seek to engage, the mechanisms for engagement and the input that would be most useful to gain from specific groups.

Mr. Towbin noted that Town Meeting Day would be a good way to introduce the work of the Regional Energy Committee to municipalities and to engage interested landowners, business owners etc. It was suggested that materials might be prepared that could be provided at Town Meeting Day or bullet points that could be presented.

In general, the Committee was supportive of the proposed public engagement activities and recommended that staff utilize existing meetings as much as possible to limit the number of new meets that may need to be scheduled.

MUNICIPAL INPUT SURVEY:

Ms. Wolz provided an overview of a survey that will be used to solicit input from municipal organizations including elected officials, planning commissions, energy committees, and conservation commissions. The primary purpose of this survey will be to gather municipal information regarding constraints and preferred sites for possible renewable energy siting. Ms. Wolz noted this would be one of two surveys to be sent out and the expectation is that each entity being targeted would fill out one survey for the group. This was being done in an effort to have each group discuss the issues among themselves and provide one voice moving forward.

Finally, it was noted that comments on the survey should be provided back to staff by the end of the week or beginning of the following week. This was being requested in an effort to have the survey distributed to municipalities so the information could be discussed at their regular meetings in February. It was also noted that responses to the survey would not be due back until the end of February to provide adequate time for municipal discussion.

SCHEDULE FOR FUTURE MEETINGS:

Mr. Vorwald asked about scheduling future Regional Energy Committee meetings. The committee agreed that Wednesdays or Thursdays at 4PM the end of the month would work best. Mr. Vorwald noted he would send out a poll to all committee members to ask about specific future meeting dates.

ADJOURN:

Mr. Towbin moved to adjourn the meeting which was seconded by Mr. Zabriskie. The Committee voted unanimously to adjourn the meeting. With no other business the meeting was adjourned at 5:56PM.

Central Vermont Regional Planning Commission

Renewable Energy Generation – Municipal Target Methodology
Regional Energy Committee
February 23, 2017

The purpose of establishing municipal targets is to show that adequate resources exist region-wide to meet the regional share of renewable energy generation. It is not intended to prescribe a specific amount of renewable resource generation that will be required of each municipality but rather show that sufficient area of prime resources exist within the region to ensure the regional targets can be met. Municipal energy plans will provide additional detail regarding specific locations for renewable energy siting.

The following proposed methodology is similar to the methodology used by other Regional Planning Commissions to develop targets for renewable generation by municipality. All the Regional Planning Commission's in the State have been given targets for wind and solar renewable energy generation that will be used to set guidance to achieve the State's goal of achieving 90% renewable energy by 2050. As outlined in the Regional Energy Planning Standards published by the Department of Public Service, the Regional Planning Commissions must allocate the renewable generation targets to their member municipalities. These municipal targets will be used in the same way as the regional targets, to set the guidance needed to achieve the State's goal of 90% renewable energy by 2050.

In general, the municipal share of wind and solar generation is calculated using the following information and process:

1. The population of each municipality is recorded based on 2010 U.S. Census data. This number is then divided by the regional population total to identify the percent of the regional population for each municipality. While the 2010 U.S. Census information is dated, it still remains the most consistent information on population for the region. Estimates have been done periodically through the American Community Survey, however not all municipalities have information that is updated through this process on a consistent basis, therefore the 2010 U.S. Census is used.

2. Using a GIS analysis, the prime resource areas for renewable energy generation are extracted for each municipality. The percentage of the regional total acres of renewable energy generation is noted for each municipality. This is calculated for both wind and solar resource areas.

3. The regional percentage of a municipality's population and prime resource area is averaged to establish the percentage of the regional renewable energy target that would be assigned to each municipality.

4. The regional targets provided by the Department of Public Service for wind and solar resource are calculated individually for each municipality since the prime resource generation areas will be different throughout the region. Additionally, high and low targets have been provided and are calculated separately.

29 Main Street Suite 4 Montpelier Vermont 05602
802-229-0389 E Mail: CVRPC@CVRegion.com

5. If known, any existing renewable energy generation information related to wind and solar will be removed from the respective municipality therefore reducing the municipal share of the resource allocation.

6. The outcome of the above calculations will determine how much land area would be needed in each municipality to achieve the regional energy targets. This will be compared to the amount of prime resource area that has been identified in each municipality to ensure a "fair share" of renewable energy generation can be accommodated by each municipality.

Prime Renewable Resource Areas

Information on prime renewable resource areas for wind and solar identify where the highest potential for the resource (wind or solar) generation exists. Below is a breakdown that outlines how the prime resource areas are calculated.

Prime Wind: Developed by the Vermont Center for Geographic Information and identifies areas where wind speeds are sufficient and consistent enough to generation of wind energy. The generation capabilities are based on three separate hub heights for wind turbines and include 30 meter, 50 meter, and 70 meter. Wind speed information is from the 2004 Massachusetts Technology Collaborative effort. "Known constraints" have been removed from the generation data while "Possible constraints" remain.

Since three different hub heights are identified, it should be noted that areas that maintain consistent wind speeds to support a 70 meter hub height would also be sufficient to support 50 meter and 30 meter hub heights respectively. However, areas that support a 30 meter hub height would not necessarily support 50 meter and 70 meter hub heights.

Prime Solar: Developed by the Vermont Center for Geographic Information and identifies ground mount solar potential. This data layer was created in a GIS environment using a 30 meter Digital Elevation Model to identify specific slopes (LTE 14%), aspects (90 to 270 degrees), and solar radiation levels (GTE 1,000 kW per square meter) that are necessary to maintain consistent generation of solar energy. "Known constraints" have been removed while "Possible constraints" remain in the data.

High and low range resource targets were provided at the regional level resulting in both a low and high Megawatt target for wind and solar generation by municipality. These Megawatt targets were multiplied by the average Megawatt per acre factor for wind and solar (approximately 4 acres for wind and approximately 8 acres for solar) to determine the number of acres needed to achieve both the low and high range Megawatt targets.

Prime Wind Resource and Targets

Town Name	Population	Regional Share of Population	Prime Wind* (acres)	Prime Wind Resource Share (Percent of Region)	Average Population + Resource Share	Low Range Wind MW	High Range Wind MW	Existing Wind MW (TBD)	Low Range Prime Target (Acres)	High Range Prime Target (Acres)
Barre City	9,052	13.9%	202	0.2%	7.0%	1.56	2.94		6.26	11.76
Barre Town	7,924	12.2%	6,765	5.9%	9.0%	2.01	3.77		8.03	15.09
Berlin	2,887	4.4%	3,027	2.6%	3.5%	0.79	1.48		3.15	5.91
Cabot	1,433	2.2%	11,873	10.4%	6.3%	1.40	2.62		5.58	10.49
Calais	1,607	2.5%	812	0.7%	1.6%	0.35	0.66		1.41	2.65
Duxbury	1,337	2.1%	5,177	4.5%	3.3%	0.73	1.37		2.92	5.49
East Montpelier	2,576	4.0%	91	0.1%	2.0%	0.45	0.84		1.79	3.37
Fayston	1,353	2.1%	1,884	1.6%	1.9%	0.41	0.78		1.65	3.11
Marshfield	1,588	2.4%	5,090	4.4%	3.4%	0.76	1.44		3.06	5.75
Middlesex	1,731	2.7%	709	0.6%	1.6%	0.36	0.68		1.46	2.74
Montpelier	7,855	12.1%	0	0.0%	6.0%	1.34	2.52		5.36	10.07
Moretown	1,658	2.5%	4,711	4.1%	3.3%	0.74	1.39		2.96	5.56
Northfield	6,207	9.5%	7,069	6.2%	7.9%	1.74	3.28		6.98	13.11
Orange	1,072	1.6%	14,154	12.4%	7.0%	1.56	2.92		6.22	11.69
Plainfield	1,243	1.9%	5,357	4.7%	3.3%	0.73	1.37		2.93	5.50
Roxbury	691	1.1%	6,231	5.4%	3.3%	0.72	1.36		2.89	5.43
Waitsfield	1,719	2.6%	2,552	2.2%	2.4%	0.54	1.02		2.16	4.06
Warren	1,705	2.6%	7,440	6.5%	4.6%	1.01	1.90		4.05	7.61
Washington	1,039	1.6%	13,176	11.5%	6.6%	1.46	2.73		5.82	10.93
Waterbury	5,064	7.8%	1,812	1.6%	4.7%	1.04	1.95		4.16	7.81
Williamstown	3,389	5.2%	8,106	7.1%	6.1%	1.36	2.56		5.46	10.25
Woodbury	906	1.4%	7,299	6.4%	3.9%	0.86	1.62		3.45	6.48
Worcester	998	1.5%	915	0.8%	1.2%	0.26	0.49		1.04	1.95
Total	**65,034**	**100%**	**114,450**	**100%**	**100%**	**22.20**	**41.70**	**0.03**	**88.80**	**166.80**

*Prime Wind represents the resource potential at 30 meter hub height.

Prime Solar Resource and Targets										
Town Name	**Population**	**Regional Share of Population**	**Prime Solar (acres)**	**Prime Solar Resource Share (Percent of Region)**	**Average Population + Resource Share**	**Low Range Solar MW**	**High Range Solar MW**	**Existing Solar MW (TBD)**	**Low Range Prime Target (Acres)**	**High Range Prime Target (Acres)**
Barre City	9,052	13.9%	105	0.5%	7.2%	7.83	12.50		62.65	99.96
Barre Town	7,924	12.2%	795	3.6%	7.9%	8.59	13.71		68.74	109.68
Berlin	2,887	4.4%	1,254	5.7%	5.1%	5.51	8.80		44.11	70.38
Cabot	1,433	2.2%	1,388	6.3%	4.3%	4.63	7.39		37.03	59.08
Calais	1,607	2.5%	1,628	7.4%	4.9%	5.37	8.56		42.94	68.51
Duxbury	1,337	2.1%	672	3.1%	2.6%	2.78	4.43		22.23	35.47
East Montpelier	2,576	4.0%	867	3.9%	3.9%	4.30	6.86		34.38	54.85
Fayston	1,353	2.1%	485	2.2%	2.1%	2.33	3.72		18.64	29.74
Marshfield	1,588	2.4%	981	4.5%	3.4%	3.75	5.99		30.02	47.90
Middlesex	1,731	2.7%	1,213	5.5%	4.1%	4.45	7.09		35.56	56.74
Montpelier	7,855	12.1%	240	1.1%	6.6%	7.16	11.43		57.31	91.44
Moretown	1,658	2.5%	1,413	6.4%	4.5%	4.88	7.78		39.03	62.27
Northfield	6,207	9.5%	1,271	5.8%	7.7%	8.33	13.30		66.66	106.37
Orange	1,072	1.6%	896	4.1%	2.9%	3.11	4.96		24.89	39.71
Plainfield	1,243	1.9%	461	2.1%	2.0%	2.18	3.48		17.43	27.81
Roxbury	691	1.1%	916	4.2%	2.6%	2.84	4.53		22.73	36.27
Waitsfield	1,719	2.6%	622	2.8%	2.7%	2.97	4.75		23.80	37.97
Warren	1,705	2.6%	865	3.9%	3.3%	3.56	5.69		28.51	45.49
Washington	1,039	1.6%	1,138	5.2%	3.4%	3.68	5.87		29.45	46.99
Waterbury	5,064	7.8%	1,018	4.6%	6.2%	6.75	10.77		54.01	86.18
Williamstown	3,389	5.2%	1,106	5.0%	5.1%	5.57	8.88		44.54	71.07
Woodbury	906	1.4%	1,562	7.1%	4.2%	4.62	7.37		36.94	58.94
Worcester	998	1.5%	1,119	5.1%	3.3%	3.60	5.74		28.80	45.95
Total	**65,034**	**100%**	**22,015**	**100%**	**100%**	**108.80**	**173.60**	**20.9**	**870.40**	**1,388.80**