

To: Members of the Development Review Board 6/12/20

From: Hinesburg Energy Committee

Re: Haystack Crossing

The Energy Committee has reviewed the energy components of the Haystack Crossing development as presented in the Preliminary Plan Application. Our review is informed by the energy goals of the Hinesburg Town Plan and Hinesburg's share of statewide Comprehensive Energy Plan Goals that have been provided to the Committee by the Chittenden County Regional Planning Commission (CCRPC). Haystack Crossing is a very large development that will impact the long-term trajectory of Hinesburg's energy usage and GHG emissions. We believe it also presents an important opportunity to make significant real progress toward our town's future energy goals.

The Hinesburg Energy Committee feels that it is important that the DRB needs to assess the viability of this application in light of the goals that the town of Hinesburg has established for its sustainable energy future. The town plan clearly states that the town's goal is to transition to renewable energy by 2050. Any proposal that comes before the DRB should be considered in light of these stated goals. These goals are also reflected in the subdivision regulations. For example section 3.6 of the Subdivision Regulations states that development in the Village Northwest district, "*shall be designed, sited, and constructed to take advantage of passive and/or active solar energy resources (e.g., south facing buildings & windows, photo voltaics) as well as other compatible renewables (e.g., wind, geothermal, etc.)*" (Subdivision Regulations p. 23). The town has placed this sentence in our regulations so that developers will be required to consider renewable energy in their project.

Haystack Crossing will significantly increase the number of conditioned units in the village section of Hinesburg when the build out is complete. If we are to have any reasonable hope to reach our energy goals as a town, this project needs to demonstrate how the developers will incorporate renewable energy and show the calculations building by building how they are achieving the town goal of buildings that are reliant on renewable energy.

Our specific comments on the preliminary plan are as follows:

1. It is our recommendation to the DRB to require a site plan that shows the orientation of each conditioned building as required by the Hinesburg Subdivision Regulations referred to above. Each building should also be modeled to show the required energy load, which includes active and passive solar gain, and then show the percent of renewable energy that will meet that load. As a state and town our goal is to be 90% renewable by 2050 and a development as significant as Haystack Crossing could move Hinesburg closer to this goal. It should also be noted that heating systems that are fueled by natural gas have a life time of 20 – 30 years which will more than likely not be transitioned to renewable energy before 2050. Focusing on the efficiency and renewable energy sources for the buildings of Haystack Crossing is an opportunity for the developer and the town to help Hinesburg reach its desired energy goals.
2. Use of Natural Gas: Natural gas is a fossil and emits about 72% as much CO₂ upon combustion as No. 2 heating oil. When the very significant fugitive methane emissions during production and distribution that have been documented in research over the past 10 years are taken into account, total natural gas GHG emissions exceed that of heating oil. The Chittenden County State approved enhanced energy plan (ECOS) provides for a 78% reduction in natural gas usage by 2050. The forecasts simply cannot meet State mandated goals if natural gas usage remains at current levels. Hinesburg requires a similar reduction in natural gas

consumption, which was 24,483 MMBTU in 2015 per data supplied by the Chittenden County Regional Planning Commission. Haystack Crossing energy calculations estimate 900 ccf of gas for heat and hot water per single-family residence. The 87 SF residences would thus use an estimated 7,947 MMBTU of natural gas. This would increase Hinesburg's current total natural gas usage of 24,483 by about 32% and is inconsistent with the Town's goal of shifting from fossil fuels to renewable energy. The Energy Committee would like to see the DRB encourage the use of cold climate heat pumps in the Haystack Crossing single-family and multifamily residences and rely less on natural gas for heating.

3. Heat Pumps: The Renewable Energy section of a 10/4/19 document prepared by T.J. Boyle Associates indicates that heat and hot water for 132 multi-family units will be supplied by cold climate heat pumps and heat pump hot water heaters. We fully support and applaud this but as stated below we are concerned that single family residential units will have heat and hot water provided by natural gas.
4. The renewable energy calculations for the project estimate that achieving the renewable energy density bonus target of 25% of all residential energy use will require 858KW of solar energy. This is to be generated through a combination of roof-top mounted solar, ground mounted solar within the property, and off-site solar net metered to the project. The most recent site plan includes ground mounted solar pv on the south end of the property. Additional solar ground-mounted solar pv is identified as a possibility for lots 14 and 20. While the renewable energy bonus is not required for Phase I, we believe it important to determine the project's total potential and to confirm the feasibility of the 25% required for the density bonus. Such a review process would naturally address the question of solar orientation of the single-family homes while hopefully identifying ways to address any deficiencies. The Energy Committee also feels that the developer should commit a certain number of units to achieving a high percentage of renewable energy in Phase 1 and not wait until Phase 2.
5. The status of the ground mounted solar pv should be determined in advance of DRB approval. Is this electrical solar production going to be made available to each unit in the project? Can individual homes or businesses buy into the community solar system? Will these arrays be a net metered arrangement to benefit the developer or the residents of the Haystack Crossing? This ground mount solar pv system also presents an opportunity for the developer to demonstrate how a significant number of homes can be fueled by renewable energy. There will be undoubtedly be a number of homes that will not have the proper orientation for active solar pv and participation in a community solar field will allow those homes to be renewably powered. The Committee recommends requesting the developer to make a good faith effort to include solar PV within Phase 1. The developer could explore partnering with a solar company who would likely be willing to take on turnkey development and operation of a solar system at no cost to the developer and have this option for the residents of Haystack Crossing.
6. Stretch Code for residential units: We are pleased to note Black Rock's commitment in a October 7, 2019 letter to Alex Weinhagen that "All of our residential homes meet or exceed stretch code requirements as outlined in Section 5 of the zoning regulations and we will have high efficiency packages available for homeowners who wish to strive for top tier efficiency standards." We would be pleased to work with the DRB and Black Rock to explore how this can most efficiently be accomplished and can suggest some analytical tools and software aids in this process. We note that it is a stated goal in the Hinesburg Town Plan to have all new homes be

net zero energy by 2030 and that Haystack Crossing might allow us to take an important first step in that direction.

Efficiency Vermont has a tiered approach to building performance. We would encourage the developers to commit a significant number of units to achieving the high performance standard, which goes well beyond stretch code. Buildings that are high performance also require less thermal energy which will make it easier to achieve net zero energy.

7. Stretch Code for Commercial and Mixed-Use Buildings: We did not see a reference to energy standards for these buildings and hope that the developer intends to meet stretch code requirements for these buildings. We note that this would appear to be a requirement for State approvals under the Act 250 process.
8. Electric Vehicle Charging: We anticipate a significant expansion in EV's over the coming 10 years with accelerating growth in EV market penetration through 2050. The Town Plan calls for all new home to provide for future EV charging, with power preferably supplied by photovoltaics. We would like to see all new homes designed to accommodate charging stations and believe that some public or common charging stations should be provided at several locations within the project.

We also recognize that this is a different framework from the zoning and subdivision regulations that must guide the DRB's decisions. We would like to work with the DRB and the developer to identify any opportunities to improve energy efficiency and increase renewable energy use consistent with your regulatory authority and the developer's willingness to help the Town of Hinesburg reach its energy goals. We do think that focusing to a greater degree on renewable energy and efficiency to complement the other features of Haystack Crossing would make a powerful marketing statement that may accelerate sales for the developer and at the same time help the town reduce its potential carbon load.

Respectfully submitted,

The Hinesburg Energy Committee