

South Mountain: Green technologies becoming 'commonplace'

Desire and cost of technology catches up with the company's long-standing net-zero pillar.

By **Lucas Thors** - February 3, 2021



South Mountain offers green energy technologies and sustainable energy on-Island.

The overarching focus of South Mountain Co.'s work for the past 30 years has been on bolstering environmental sustainability on-Island, while making sure their building projects are positive and uplifting experiences for all participants.

South Mountain, a leading architecture, building, engineering, renewable energy, and interior design firm on the Vineyard, has been offering sustainable energy solutions to the community for decades.

But now, founder and CEO of the company John Abrams told The Times that climate change and technological improvements have accelerated the paradigm shift away from natural gas and fossil fuel building elements on the Vineyard, and toward green electric technologies such as solar panels, air-source heat pumps, and efficient appliances.

“About 20 years ago, the idea of a net-positive energy building was a fringe concept — 10 years ago, it was tough to do. Today, it is really becoming commonplace,” Abrams said. “That is due primarily to the dramatic decrease in the cost of solar, the increase in availability of high efficiency heat pumps, and the increased demand for better building envelopes that are not only more energy-efficient, but more comfortable, more healthy, and more durable.”



In order to build the most efficient and comfortable home, workshop, or office building, South Mountain looks at design holistically, and integrates a variety of green elements into the process.

“For us, most of our projects are net zero,” Abrams said. “And later on, we will get to further developments that we are working on now — one of those being the nascent rise in the effectiveness of battery storage, which allows us to do things that were not feasible even just a few years ago.”

Abrams said South Mountain recently constructed a home situated two miles down a remote dirt road, where power is difficult and “astronomically expensive” to obtain.

At the same time, the clients wanted a substantial home with all the modern conveniences and amenities.

“There was no power there, and we were able to suggest that rather than bring in utility power, through the use of solar and battery storage, we could do an off-grid home and completely eliminate the need for utility power,” Abrams said. “That house is occupied today.”

A few years ago, the ability to go off the grid was limited to small camps, and although this major project is still an outlier, Abrams said it's an example of the possibilities that are rapidly coming to fruition.

Rob Meyers, director of energy technology and co-owner of South Mountain, said living off the grid is like living on a boat — “you are always checking the weather, your fuel supply, making adjustments to ensure you don't run out of energy, because if you do run out, you are adrift until help arrives.”

And for those who don't want or don't have a sailor's vigilance to operate their home on that elevated level, or don't have the money, Meyers said, a grid system allows folks to make and use their energy onsite, and send excess back into the grid to spin their meter backward. “They are putting those metering credits toward their bill, and excess energy goes back into the grid and is used by their neighbors,” he said.

When this energy is produced during a peak load moment, when the demand for electricity and the cost to the utility (and therefore the ratepayers) is highest, that lowers the demand the power company has to respond with. Essentially, more localized energy distribution reduces the cost for everyone.



Apart from being a leader in the photovoltaic solar panel field, South Mountain is always looking at ways to bring new and existing homes into “a whole different place in terms of comfort,” Abrams said.

The company often conducts a deep energy retrofit, which is a renovation that improves a building's thermal efficiency so much as to make heating and cooling free or very low-cost, he said.

These savings are realized through improvements to the building shell, including improved insulation and air sealing, and upgrades to high-efficiency heating, cooling, and hot water systems suited to the new, lower energy demand.

“Maybe 12 years ago, when air-source heat pumps first came from Japan and that technology became available to us, that changed heating and cooling completely. I don't think we have installed anything that runs off fossil fuels since that time,” Abrams said.

He said these types of technologies are the cheapest forms of energy on Martha's Vineyard “by a large measure,” and when he shows clients the potential return on investment and cost savings, they say “Why would I not do this?”

With issues of climate change and energy resilience sitting at the forefront of President Joe Biden's immediate administration goals, there has been a surge in interest in green energy, as public policy begins to shift.

“Now that is exciting, and ultimately that is what we have to head for. It is incredibly gratifying to see this issue, that has been on our minds for the last 30 years, being front and center in the political arena. Without major policy shifts, this doesn't happen,” Abrams stressed.

The local work the Martha's Vineyard Commission Climate Action Task Force is doing, along with municipal energy committees, is getting more focused and more determined with each passing week, he said.

Meyers noted that, over the years, there have been a number of green energy incentive programs that have come and gone. But the driver for localized energy production, Meyers said, has always been making clean, local energy that you can use as a hedge on your future bills.

“Wouldn't it be great if this entire Island was all renewable-powered, with a combination of distributed solar and eventually offshore wind?” Meyers said.

But with new sustainability goals always on the horizon, Abrams said South Mountain's work is continuing at a steady pace.

The next challenge the construction sector must tackle, he said, is moving to low-impact, carbon-zero buildings that use reduced or zero-carbon materials. This change, Abrams said, will move the green energy market “way beyond energy-positive.”



“The mining, the manufacturing, the transportation, everything that is required to bring the raw materials to your jobsite, to your home. This is a more complicated problem than energy,” he said.

At first, adopting these technologies is difficult, complicated, and expensive. But Abrams said that is how the Island will move these types of projects from being outliers to existing in the mainstream.

With so many people wanting to move away from traditional energy sources, South Mountain's objective now is to educate their highly receptive existing and prospective clients, and act as their guides through the process.

“Most people are cognisant that we have to make this transition to renewables in the next 10 to 30 years, and we have to do it in all the sectors,” Abrams said.

Currently, a project is in the works with a local nonprofit where South Mountain is seeking its Living Building Certification (LBC) — a highly rigorous building certification program that conducts in-depth energy audits after a 12-month performance period.

To date, Abrams said only several dozen buildings in the world have been certified.

“The whole idea is moving us from doing less harm, toward development that actually has a positive environmental impact,” Abrams said.

