

Community Solar Survey Results Summary

for
the Town of Montague



Photo Credit: Town of Montague

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Prepared by

Caroline Williams & Victoria Haskins
UMass Clean Energy Extension

209 Agricultural Engineering
250 Natural Resources Way
Amherst, MA 01003-9295
413.545.8510

energyextension@umass.edu
<https://ag.umass.edu/clean-energy>

Completed using the *Community Planning for Solar* Toolkit available at
<https://ag.umass.edu/solarplanning>

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Background

Purpose

Residents in the town of Montague were surveyed regarding their opinions, attitudes, and preferences regarding solar photovoltaic installations, as part of solar planning efforts conducted through the *Community Planning for Solar* process. The survey will inform development of a *Community Solar Action Plan* to guide future solar development in town.

Methodology

A paper version of the survey was distributed via mail to a representative subsample of 640 households (17% of town households). In addition, paper surveys were made available at drop-box locations at all town libraries and the Town Hall. Paper copies at dropboxes and an electronic version of the survey were made available to all residents. A link to an electronic version of the survey was advertised by posting on Next-door, Facebook, the town website, and information was distributed via phone. There was also an article written about it in the *Montague Recorder*.

The electronic survey went live on March 8th, 2023, and was accepting responses until June 12th, 2023. The surveys were sent out by mail the week of April 10th; returned surveys were accepted through June 8th.

Survey Responses

Responses Received

A total of 249 responses were received and analyzed, including 196 electronic responses and 53 paper surveys.

Demographics & Respondent Characteristics

Below is a comparison between the demographics of the town of Montague as a whole (as estimated by the 2020 U.S. Census) and survey respondents. This analysis is important for understanding whether survey responses are representative of town residents as a group.

Age

Age	Percentage of Eligible Survey Takers	Survey Respondents
18-24 years	8%	1%
25-39 years	23%	16%
40-54 years	26%	29%
55-64 years	19%	23%
65-74 years	14%	22%
75-84 years	6%	10%
85+ years	4%	1%

Younger residents (aged 18-39) were somewhat underrepresented in the survey, comprising 31% of adult residents but only 17% of survey respondents. Residents aged 65-84 were overrepresented, comprising 32% of survey respondents, but only 20% of adult town residents.

Gender

Gender	Percentage of Eligible Survey Takers	Survey Respondents
Male	46%	41%
Female	54%	55%
Non-binary	N/A	4%

The gender breakdown of survey respondents matched fairly closely with the town overall, but men were slightly underrepresented. Note that the census does not include a non-binary option.

Race

Race	Percentage of Eligible Survey Takers	Survey Respondents
White alone	92%	93%
Black or African-American alone	<1%	<1%
American Indian and Alaska Native alone	<1%	<1%
Asian alone	1%	0%
Native Hawaiian and Pacific Islander alone	0%	0%
Some other race alone	2%	1%
Two or more races	4%	4%

The race of survey respondents was representative of the town as a whole. In addition to the categories listed above, 2% of survey participants indicated that they were of Hispanic or Latino origin, compared to 6% of the town overall.

Income

Household Income	Percentage of Eligible Survey Takers	Survey Respondents
Less than \$15,000	9%	5%
\$15,000-\$24,999	9%	8%
\$25,000-\$34,999	10%	5%
\$35,000-\$49,999	12%	9%
\$50,000-\$74,999	16%	27%
\$75,000-\$99,999	12%	16%
\$100,000-\$149,999	23%	18%
\$150,000-\$199,999	7%	8%
\$200,000 or more	1%	4%

The household incomes of survey participants matched fairly closely with the town overall, although the \$50,000-\$74,999 demographic was somewhat overrepresented, at the expense of lower-income households.

Employment Status

67% of Montague's working-age population is estimated to be employed, compared to only 55% of survey participants. 29% of survey respondents were retired; retirees have more time to participate in surveys, and so are often overrepresented.

Solar Ownership

Montague has 3,757 households and there are currently 290 residential solar arrays. This means that roughly 7% of households in Montague have solar arrays. However, in the survey 28% of respondents had solar installed on their homes. This suggests that people who have solar installed on their home tend to be more interested in solar and therefore are more likely to fill out this survey.

Summary

Overall, this suggests that older, retired adults were somewhat more likely to answer the survey, which is not particularly surprising, given that they may be more likely to have time available to do so. Those with solar installed, and therefore likely a more positive view of solar, were also more likely to answer the survey. In general, those who feel strongly about solar, whether positively or negatively, were probably more likely to respond to a survey about solar. However, this means that the survey may show stronger viewpoints than residents in the Town of Montague have overall.

It is important to note, therefore, that the findings summarized below may not be entirely representative of the opinions of Montague residents as a whole. (However, those with more time may be more likely to participate in town government, and those with stronger opinions, positive or negative, may be more likely to participate in specific permitting, planning, or zoning processes related to solar – so it is possible that the survey represents well the perspectives of those most likely to participate in solar planning.)

Survey Results

Overview/General Findings

Montague residents in general are strongly motivated to combat climate change and supportive of solar development. Based on the *Community Solar Survey*, 91% of residents are “extremely” or “moderately” concerned about climate change, and 90% reported they have a “positive” or “very positive” attitude towards solar development.

Montague residents are most supportive of solar development on already developed spaces like roofs and parking lots. A majority indicated support for developing all available gravel pits and quarries (59%), parking lots (62%), large rooftops (64%) and landfills and brownfields (70%). A majority of residents were also supportive (69%) or neutral (16%) regarding a goal of solar development sufficient to meet community needs. There was also significant support for solar development to meet anticipated regional (67%) or state (57%) needs. Montague residents are also concerned about conservation of undeveloped natural and agricultural lands within town and showed little support for developing these landscapes for solar – 68% indicated they would prefer to see 10% or less of natural lands developed for solar, and 50% indicated they would prefer to see 10% or less of agricultural land developed for solar.

Municipal Solar

Montague residents showed strong support for solar development on municipal buildings and properties. In the *Community Solar Survey*, 86% of residents indicated they felt the town should invest in solar development on municipal buildings and parking lots to meet municipal needs. An additional 11% of residents were supportive of municipal development, depending on certain factors. Some of the factors cited include where the panels would be located and how much it would cost. Respondents were concerned that the town would not have enough money to finance these projects.

In addition, 76% of residents were supportive of town investment in solar projects to support community electricity needs, with an additional 18% supportive dependent on certain factors, similar to those listed above.

Additional results relevant for municipal solar considerations:

- Most *Solar Survey* respondents are very likely (54%) or likely (35%) to support solar projects that provide back-up power for schools and emergency shelters.
- Most *Solar Survey* respondents support (26%) or strongly support (61%) development on former landfills.

Residential Solar

In the *Community Solar Survey*, Montague residents indicated strong support for residential solar development, with a large majority indicating that they felt “positive” or “very positive” about solar panels on residential roofs (88%) and in residential yards (78%). Only 6-8% felt negative about these types of systems.

Major reasons residents cited for not already having a system installed were upfront cost (45%), not owning the property (23%), the property being too shaded (21%), or not knowing enough about their options (18%). Other reasons cited included taking away from the house appearance/value, having a slate roof, or lacking a south-facing roof.

Of residents who did not currently have a solar array installed at their home, a large percentage were open to the possibility. A majority (53%) of respondents said they were interested in having solar panels installed at their home, 24% were not sure, and only 23% were not interested.

Business/Institutional Solar

Residents expressed strong support for development on developed spaces generally: a majority supported 100% of large roofs and parking lots being developed. Residents were also asked if a business using solar energy would affect their attitude toward the organization: 65% of residents answered that it would make them feel more positive towards the organization, and 29% said it would make them more likely to purchase goods or services from the organization. Less than 1% of people said it would make them feel negatively towards the organization. Overall, people felt very positive towards solar panels on businesses and institutions.

Solar on Farms

Montague residents were generally not supportive of widespread ground-mounted solar development on farmland. In fact, a majority of respondents indicated that they wanted less than 20% of natural or agricultural land developed for solar.

However, they did respond more favorably to certain types of solar facilities installed on farms. These included:

- Solar panels raised above agriculture land to allow farming to continue beneath (50% support/26% neutral)
- The edges of active agricultural land converted to solar (47% support/28% neutral)

Residents expressed strong opposition to traditional solar development on land currently in vegetable production (87% oppose) or hayfields/pasture (71% oppose). There was somewhat less opposition to development of fallow farmland not currently in production (51% oppose/20% neutral/29% support).

Large, Ground-Mounted Solar Development on Private Land

In the *Community Solar Survey*, Montague residents expressed support for solar development on some types of previously disturbed lands. Residents indicated a strong preference for large, ground-mounted solar development on former landfills and brownfields (87% support/9% neutral), former sand/gravel extraction sites (85% support/11% neutral) and electricity transmission line right of ways (78% support, 15% neutral).

For all other types of forested and open natural habitats, 70-93% of residents expressed opposition to development. These habitats included meadows, shrublands, and large and small patches of new growth or mature forest, as well as priority wildlife habitat.

In another portion of the survey, residents did indicate support for development along major roads (64% support/17% neutral), which in Montague could include Routes 63 and 47.

Municipal Bylaw and Permitting Processes

Based on the *Community Solar Survey*, residents provided the following information regarding their preferences for town permitting policies and processes relative to solar:

- 67% of residents believe that the development of large, ground mounted solar energy should be allowed and promoted in appropriate circumstances and an additional 17% believe it should be encouraged and promoted generally.
- Residents are interested in having community involvement in planning for large-scale solar energy projects. A majority of respondents want to have information shared at public meetings, and they want to be able to review and comment on the siting and design. They also want to be involved in deciding the best place in town for the solar project and believe voters should have the right to vote on solar projects before they have been approved. Residents want communication with the solar developer, including being able to express concerns directly to the developer. Finally, residents want the opportunity to be a part-owner of the project.
- Residents were especially interested in supporting solar projects when there were certain community benefits attached. These included reduced electricity rates for residents and reduced property taxes. It also helped if a solar installation could provide jobs for residents or back-up power to a school, emergency shelter, or senior housing.
- Residents expressed that they did not know about the process of solar development. In fact, 56% said they were not sure and/or not aware of the process. However, they did express interest in being more involved in the process and learning more.

Perspectives of Under-Represented Demographics

While a complete analysis of the perspectives of underrepresented demographics is outside the scope of this summary, a few general highlights are noted.

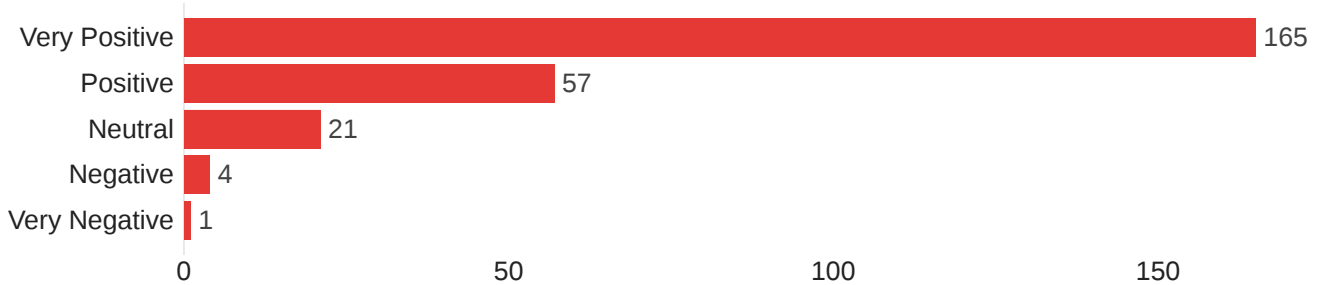
- The groups that were under-represented included men and younger age-groups.
- Men appeared to be a bit more skeptical of solar. For example, when asked the question about their general attitude toward solar energy, 62% of men said very positive, whereas 71% of females answered very positive.
- However, for most of the questions the male and female responses remained similar. Overall, women tended to choose the strongly agree option more, while men tended to have more in support and neutral (although this was not always the case).
- Younger respondents (ages 18-39) had fewer uncertainties about solar. In fact, all respondents under age 35 had a positive view of solar. Throughout, younger respondents rarely choose “negative” or “very negative” regarding solar energy options. Since this age group was underrepresented, it may mean that there was a higher percentage of people choosing negative/very negative options than the general population would choose.

Underrepresented groups show some of the limitations of the survey. Although this is often unavoidable when doing research, it is important to consider.

Appendix A: Complete Survey Results

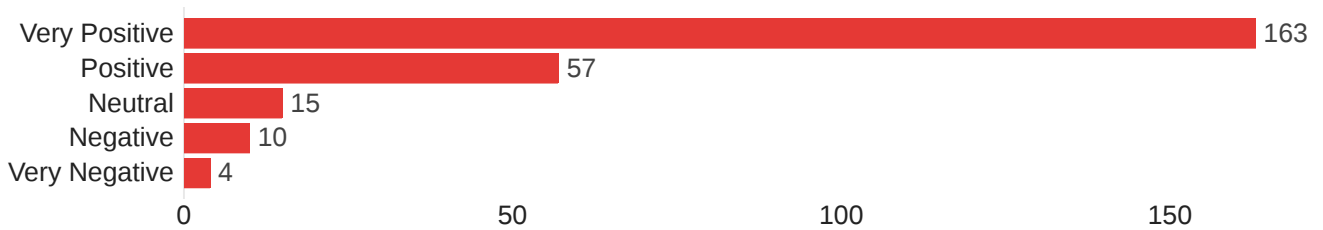
Detailed Survey Responses

Q1 - What is your general attitude toward solar energy?

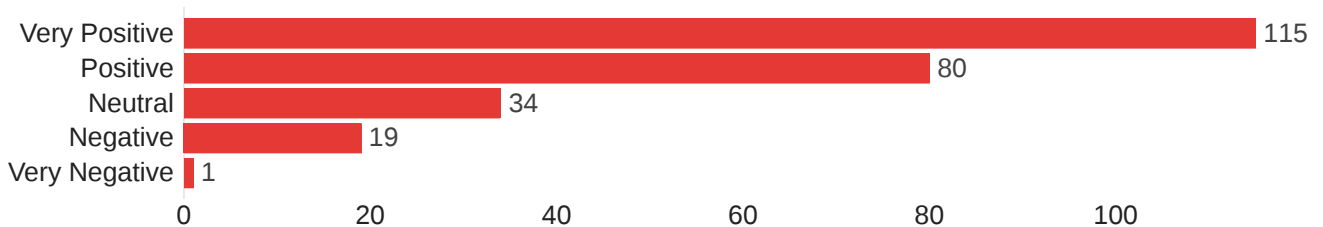


RESIDENTIAL SOLAR

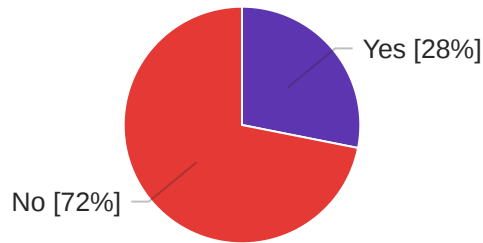
Q2 - What is your attitude toward solar energy that is installed on house rooftops?



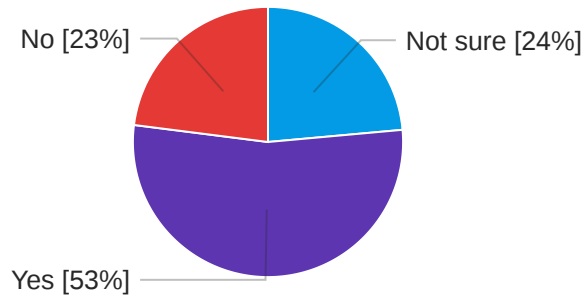
Q3 - What is your attitude toward solar energy that is installed in a residential yard to serve that household's electricity needs?



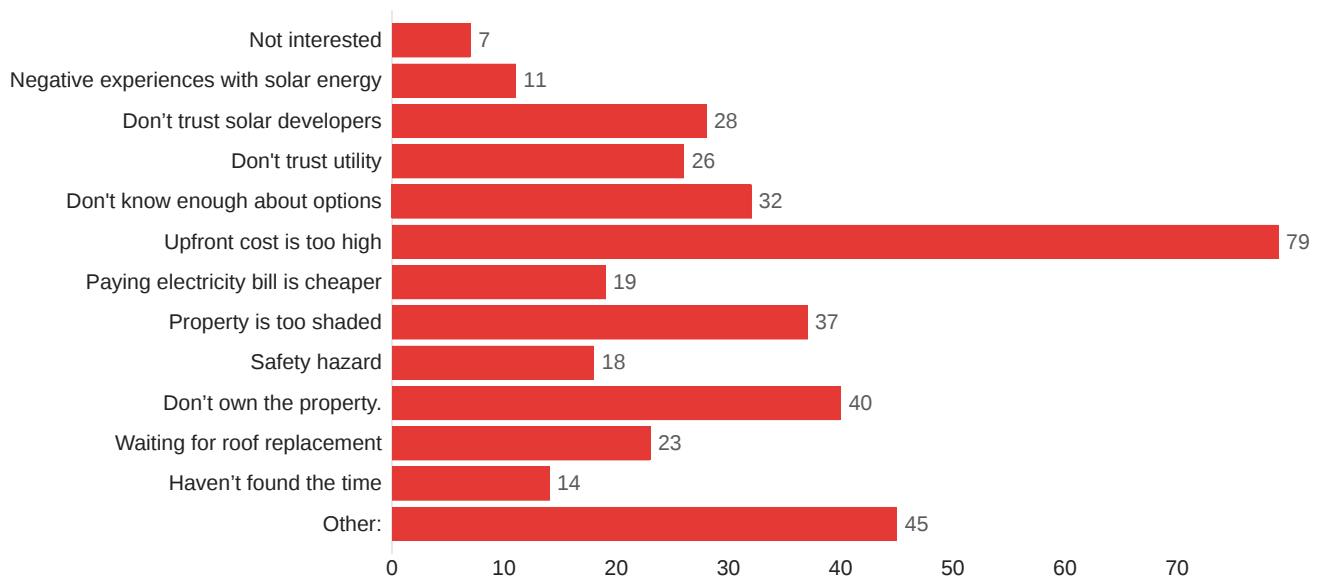
Q4 - Do you have solar panels installed at your home?



Q5 - Are you interested in installing solar at your home?



Q6 - Please indicate the reason(s) you do not have solar installed at your home.



"Other" Responses:

concerns about productions/recycling of panels

condo can't install, condo association would have to agree

I tried - my roof isn't suitable for current solar

was told not enough sun

We have had multiple roof evaluations and we were told that our 250-yr-old roof can't support the panels. We were told our lot is not large enough (as per local ordinances) for a ground array.

Concerned about recyclability of solar panels for the future.

Detracts from the appearance of property.

Don't want panels on our roofs; don't want to give up much yard space

Have a contract to install now

I am beginning to investigate installing panels.

I am in a condo and it's complicated.

I am interested, but need a full roof replacement from slate to asphalt. Upfront costs are too much at this time.

I do not want extra holes drilled into my roof. Ugly conduit out side of house. Ugly outside electric panels and transfer switches. Plus I use a minimal affordable purchased electric power.

I don't like the way that solar panels look on the roof or in the yard. I'm also concerned about the upkeep and what happens when the roof needs to be replaced.

I have a slate roof and heat by heat pump. Need approximately 50 panels to break even.

I have a slate roof on my home, but would be happy to consider the feasibility of panels on the HRA building.

I have a slate roof, and there is a paper road that prevents me from installing ground mount.

I have the perfect south facing house, elderly, up to next owner to make decision

I keep waiting for the technology to get less "clunky"

I live in a condo and can't put solar on the roof

I rent, but if I did own, I would.

I rent.

I think the utility will charge me money for an upgrade to the grid.

Like many houses in Montague, I have a slate roof, which I've been told are not compatible with solar panels.

My roof design may not economically support solar to the degree I want or need.

My roof is not well suited in shape and orientation for solar, ground mounted solar is not permitted. No viable options for solar currently without constructing a new building.

our roof is very high and dangerous

Property is almost totally shaded.

Property is too small for solar on the lawn and I wouldn't ruin my roof with panels.

Roof would need help to hold solar

Rooftop is not aesthetic. Yard has to be placed in the right setting.

We would have to install a new roof and don't want to. Roof is in good shape. We also are planning on moving in a few years.

slate roof

Slate roof

Take away from house!!!

To the question before, they said " If I owned a home, my answer would be "yes"

Unattractive.

Very confusing to evaluate cost-benefit. Negativism re-leased solar made it hard to evaluate

We have a difficult roof shape that minimizes productive area. Likewise a minimal "urban" yard for ground install.

We've been told the direction of our roof plus tree shade means we can't have solar. Hopefully someday better solar options that work with our house will be available.

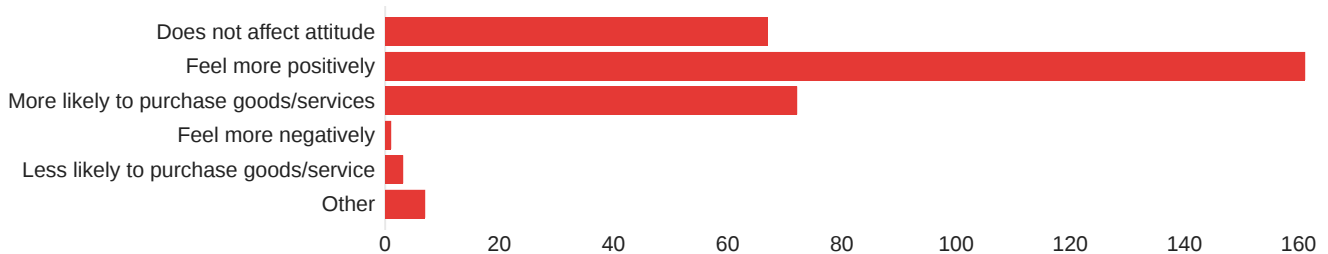
What happens when solar needs to be replaced?

when bad solar panels can be recycled without worry that their components will not pollute the environment AND

when generating these panels and components get to a net zero state, I will then be happy to install but I ask the question, "What do I do with defective panels?" throw them in the dump, how does old ones get recycled? what happens?

BUSINESS/INSTITUTION SOLAR

Q7 - Does knowing a business or institution uses solar energy affect your attitude towards that organization?



"OTHER" Responses:

Because cheer and use that vendor if at all possible!

How long before replacement is necessary??

I have to guess that solar is an important next step for humans. I believe there is only ONE appropriate place for solar - on already existing development - rooftops, parking lots, etc. To destroy more of our natural planet for energy use seems short sighted if not disastrous. So, my opinion of businesses using solar is either very positive and increases my desire to purchase items and services from them if installed on already existing development, or my opinion is worse of the business if they clear land for an installment, and I would actively stop supporting them.

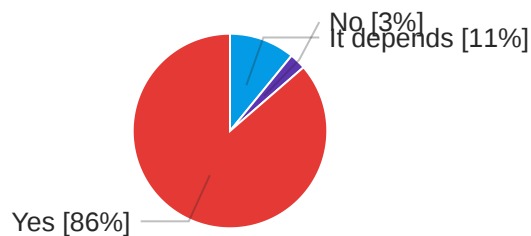
I may ask them , what they do with defective solar panels?

My business has 42 panels on its roof

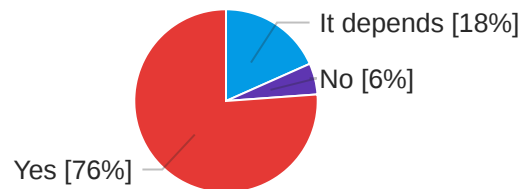
Solar is often used as greenwashing, because businesses ignore the "net" - claiming they use 100% solar while of course actually using natural gas generated electricity at night or on cloudy days.

MUNICIPAL SOLAR

Q22 - I think our town should invest in solar projects on municipal buildings or parking lots to meet municipal electricity needs.



Q23 - I think our town should invest in solar projects to meet community resident electricity needs.



"It Depends" Responses:

Q22:

a cost-benefit analysis, including a payback projection date is in order
COST

Do not want to give up any parking.

How long for the payoff

I also support selling power to support the town budget

I am not able to increase my monthly electric bill; we will end up homeless.

I don't have enough info to answer this.

I think our town should invest in public safety! And stop this solar agenda

If it doesn't increase resident cost

if residents get a break on town bills

location

Only if it's cost effective in the short term.

the town does not have the ability to finance and manage a project of that scope

Who pays for this? Property owners? Not if it increases Taxes.

Q23:

A question was asked earlier about paying more for solar on town buildings. I can barely afford electricity now, and thought solar was supposed to lower energy costs as well as help climate change? Doesn't solar also raise the surrounding temperature though?

Can't we do both?

COST

Depends on size and locations of such solar installations.

How much and how long for payoff

I am not able to increase my monthly electric bill; we will end up homeless.

location

Meeting the other criterion suggested above, yes.

Not in forest or open land near houses

not on farmland or forest, in scenic areas etc.

Only if my taxes do not go up for the project

the town does not have the ability to finance or manage a project of that scope

We don't have the municipal capacity at the moment to manage this - but I'm not opposed to the idea.

We need something. We pay so much in taxes and get nothing. Solar to help with electricity costs would be nice and I'd be willing to pay a tad more in taxes if solar could be available to landowners of Montague

What would happen to residents who already have panels.

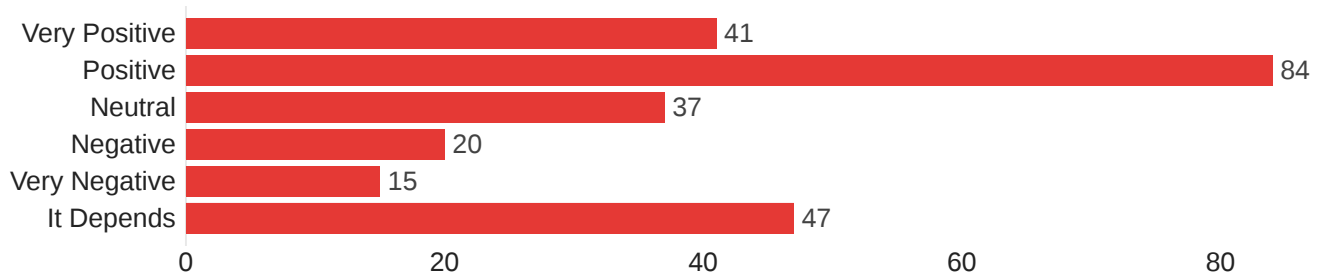
where are panels located?

Who's paying for it?

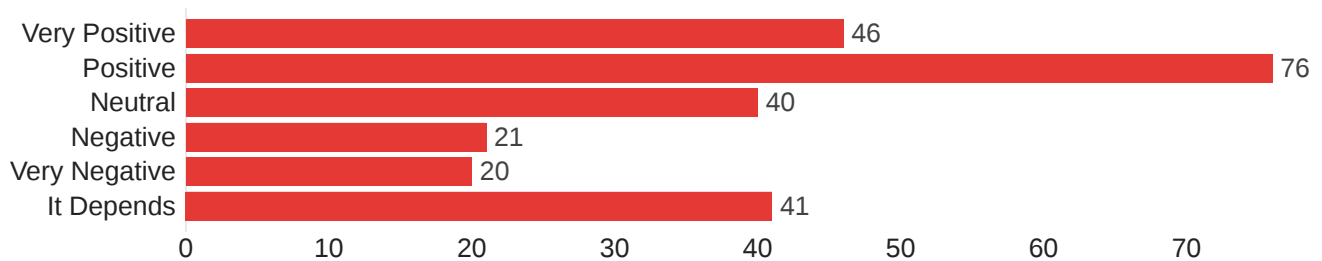
Yes, if sited on disturbed or developed sites, rooftops, etc.

LARGE, GROUND-MOUNTED SOLAR

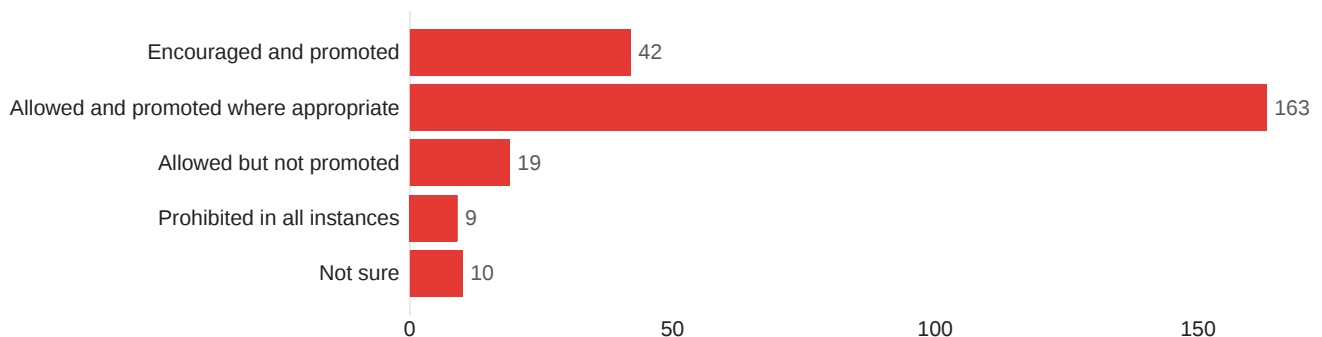
Q8 - What is your attitude toward large, ground-mounted solar energy in general?



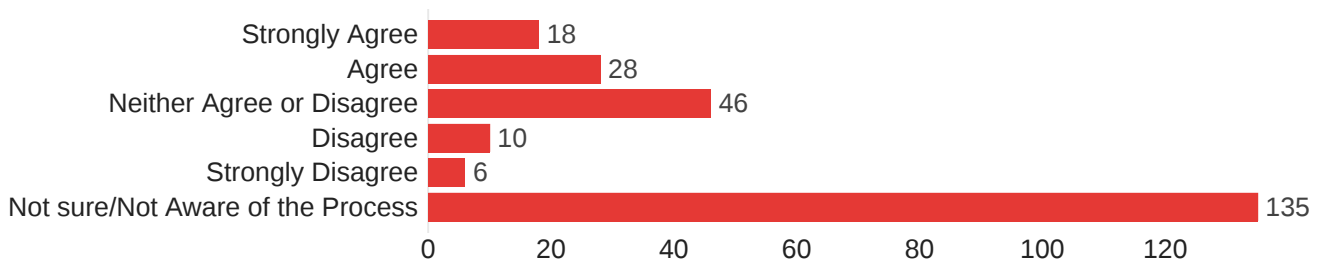
Q9 - What is your attitude toward large, ground-mounted solar energy in your town?



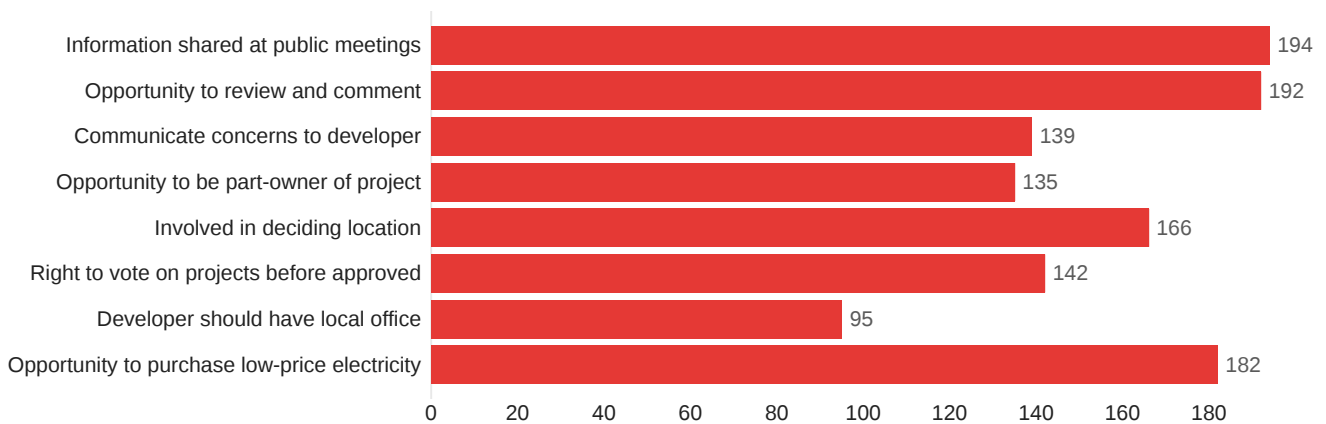
Q10 - In general, do you believe development of large, ground-mounted solar energy should be:



Q11 - To what extent do you agree or disagree that the process of large, ground-mounted solar energy development in your town has been fair?



Q12 - Which of the following types of community involvement would you like to see if a large-scale solar energy project was being planned in your town?



FUTURE SOLAR CAPACITY

Solar Capacity Options

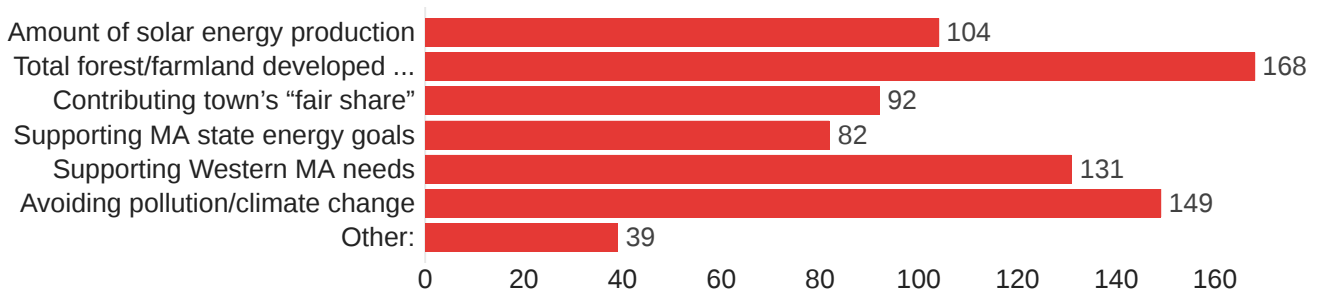
Here are some different options for how much solar development could be planned for your town in the future.

- Status Quo: “Ad-hoc” development, town does not plan for an increase in solar; individual landowners may choose to develop solar.
- Developed Spaces: Moderate increase: roofs, parking lots and disturbed land would be developed.
- Community Self-Sufficiency: Town generates 100% of community energy needs from solar.
- Regional Energy Goal: All Western MA municipalities develop 1.25% of their land area for solar to meet the four-county regional energy needs.
- Statewide Energy Goal: All MA municipalities develop 4% of their land area for solar to meet statewide solar energy goals.

Q14 - What is your attitude towards the capacity options described above?

Field	Very Positive	Positive	Neutral	Negative	Very Negative
Status Quo	34	32	66	56	24
Developed Spaces	99	64	36	10	4
Community Self-Sufficiency	76	72	35	19	11
Regional Energy Goal	65	79	36	20	14
Statewide Energy Goal	55	68	40	33	20

Q15 - Which attributes were most important in considering your attitude towards each solar capacity option?



"OTHER" Responses:

prioritize roofs, parking lots, already disturbed or developed land

Any project that cut down forest or disturbed natural habitat should be a total no go. However, allowing solar on pasture or cool weather crop fields can improve returns for farmers and could be encouraged. I think there should be

greater distinction made between these two totally different options for large scale solar. Further, MA could be 100% plus self sufficient from offshore wind and this is also not reflected in this survey. Because these distinctions are unclear it is difficult for me to answer the questions below. But I did my best.

concern over eastern mass treating us like lungs, water sources and solar sources without doing any of the work to produce their own resources

Concern that we not develop solar at the expense of other land available/most suitable for economic development.

With substantial amounts of land under some form of preservation restriction, our seemingly abundant land is actually quite limited. I would prefer not to see more large scale solar in developable location that are served by or in close proximity to full utilities, as we will need this for housing and commercial development.

contributes to the investment in transmission and grid coordination needed to have a truly renewable system.

Do not want to see forests cut or agricultural production lands used.

focusing on developed sites!

meadow limited to along highways and similar sites

how much prime farmland is unusable due to panels in fields

I do not support solar

I have seen solar projects fail in other states because they are not well cited or well regulated. I am very hesitant to clear forested land when so much developed and disturbed land is available and rooftops (especially of large buildings) provide opportunities.

If we don't do it 100% ASAP, our world as we know it won't exist.

I'm in favor of as much solar as possible but NEVER on agricultura or wooded land. We are going to need to grow more of our own food on that land, instead.

In general, I support 100% of solar and wind (not Northfield Mountain - ecological disaster for fish) but minimize on forest and agricultural land, unless compatible with agriculture.

land mounted solar panels coexisting with agriculture (eg cattle graze underneath) is positie. Covering parking areas is positive.

minimal disturbance of existing farms and wildlife habitat

Montague already produces more sustainably produced energy than it needs, and most of that energy is sold to other municipalities. We are already more than self-sufficient and it is absurd that we pay so much for energy. If we build as much solar capacity as we already have hydro capacity, I have no reason to expect that this would actually reduce our electricity costs. I would support a local energy co-op, not having a business come and sell a renewable resource back to me at extortionate rates.

My support depends on how and where the projects are placed. For example, I would not support destruction of our forests/ fields etc but would support installations in parking lots, bldgs, and certain land areas.

No undeveloped farm land will be used for solar.

Instead it should be implemented on businesses, in parking lots and in already developed land.

Statewide - " Western Ma should not have to sacrificed more undeveloped farm land to meet Bostons energy needs. Instead develop solar on businesses/buildings/parking lots in already developed areas.

Not converting productive agricultural land or forest to solar production. Parking lots, roofs, along roadways, railyards, under power lines

Not doing more harm than good; for example, ensuring that production and life cycle of the facility promotes sustainability over the long term.

not sure I understand

Not using agricultural land or forests those areas being covered over does NOT help the climate issues. over my head

Preserving forested and undeveloped land, and land for agricultural use

Protecting TREES and minimizing herbicide use. . .

Should only be installed on rooftop, parking lot development, etc. It seems the above graph is saying that 'development refers to forest or farm land still, maybe which is cleared of trees, but not paved in some manner.

Supporting the town residents who are, otherwise unable to participate in Status Quo option.

There are other forms of renewables and storage that should be deployed. PV is not the only answer. In addition, not all

Ag siting is equal, and you make no allowance for combined ag/solar use.

There is no "one size fits all" here. I don't think that the towns can all agree on one solution

This amount of forestry, along with Eversource's land clearing to protect their precious wires - we will have no trees. Just because some new wave of business is attractive doesn't make it right

This survey is misleading in that it presents solar as if it were the only clean energy option. If it were, we should of course devote forest and farmland to avert climate catastrophe. But it isn't. We have the option of building one nuclear power plant on one small set of industrial acres and leaving 100% of natural spaces intact. Wind, geothermal, and transmission from offshore wind or other nuclear/geothermal/hydro plants are also options. The merits and downsides of solar can only sensibly and should only ever be considered in direct comparison to actual alternatives.

Type of land developed.

Use of already developed sites.

We need more production, but I don't know that 'fair share' is an appropriate way to think about it. We need a holistic approach that recognizes different land use patterns throughout the state and differing regional energy needs (and support regional resilience, load balancing etc, not just bulk energy need). For example, putting solar in place of healthy forest to meet a town's 'fair share' when another town has miles of big box store roof and parking lots is poor planning and poor carbon accounting. We need to be considering as best we can the climate change impacts of land use patterns and soil health in addition to solar.

We need to be looking at energy conservation in addition to generation. Using farm/forest land should be a last resort after energy needs have been minimized to the fullest extent (efficiency and conservation).

we should be getting more of our energy needs from the hydroelectric in town!

While I am strongly opposed to clearcutting, after seeing the 4% figure, that seemed to lessen my concern... though I do believe that already developed/disturbed sites should be prioritized.

Would be very positive toward regional, state goals IF primarily built on developed or disturbed land, rooftops, parking lots

Q16 - Indicate the percentage (of the maximum possible) solar energy you would choose to be installed on various sites in your town, the technical potential is listed.

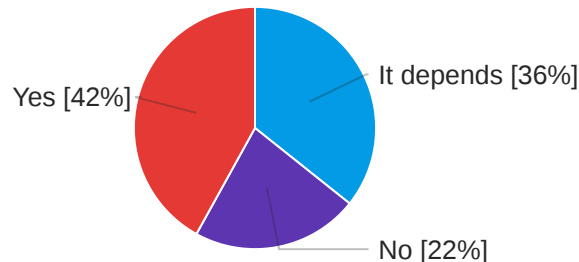
Field	Min	Max	Mean	Median	Responses
Residential roofs and yards (up to 18.5 MW)	0	100	71	80	202
Large rooftops (barns, schools, businesses) (up to 21 MW)	0	100	84	100	209
Parking lots (up to 8 MW)	0	100	82	100	199
Landfills & Brownfields* (up to 1 MW) [Note that a brownfield is a previously disturbed site which has been contaminated with a hazardous substance or other pollutant.]	0	100	86	100	205
Gravel Pits & Quarries (up to 6.5 MW)	0	100	79	100	188
Agricultural land (up to 240 MW)	0	100	23	15	126
Natural lands (forests, meadow) (up to 750 MW)	0	100	17	10	102

ECONOMIC QUESTIONS

Q13 - How likely would you be to support large, ground mounted solar energy in your town if the project provided the following benefits to your community?

Field	Very Likely	Somewhat Likely	Not Very Likely	Not Likely at All
Reduced electricity rates for residents	139	81	18	4
Reduced electricity rates for low-income residents	140	68	22	11
Direct payments that reduced property taxes	113	88	26	9
Direct payments that supported town budget needs (e.g. school funding, fire or police vehicles)	106	83	33	14
Jobs for local residents	121	80	28	7
Back-up power to the school, emergency shelter, or senior housing in case of power outage	127	84	20	6
Offered local ownership for residents who can't put it on their houses	116	86	23	11

Q20 - Would you be willing to pay more on your monthly electricity bill for solar energy projects located on roofs, parking lots, and landfills/brownfields rather than on farmland and forests?



"It Depends" Responses:

more than I pay now or more than I would pay if generated on [illegible]
on why farmland can't be used

only if the cost of electricity is not as expensive as it has been

1st choice is agrivoltaics in situations where the crops/livestock/pollinators using the land are the best fit for the partial shade and added complexity. Then parking lots, municipal buildings, etc., then power line corridors, then brownfields/landfills. The health of those installing and maintaining is important. Maybe a more thorough assessment leaves them out. I would rather use as little forest and meadow as feasible.

Again this is a stupid comparison. I would gladly pay more to both solve climate change and avoid clearing forests or farmlands. But that isn't the tradeoff we face. We could pay (probably, once scaled) less total and also avoid both of the above if we chose a mix of a small amount of solar with mostly nuclear, geothermal, and offshore wind power for New England.

as long as no one is getting rich off of it

Can I afford it?

Depends how much it goes up

Depends on HOW much more. Electricity is already a big expense.

Depends on increase

Do not understand

How much more?

I would if it were guaranteed that the money would go back into the town instead of some company.

I'd have to know more about why the costs are more, besides what is listed above. Generally I would, but I would also want to have the details of why the cost is higher. For instance, is there a monopoly on the service? This should be a project developed and owned by the state and staffed/maintained by union workers. If I knew this was union work, I would gladly pay more. But if it's just profiteering, I'd be much more skeptical.

If it's not for the purpose of increasing shareholder profits for utilities and developers, then ok... but it's not uncommon for the "savings" associated with ag-land developments and clear-cut forest developments to actually not be passed on to rate payers.

In other words, we're almost guaranteed to pay more in the future anyway. We should not be sacrificing farmland and forested land so developers can get rich.

If there can be a reduction in Electric costs for low-income families

In another record year, Eversource Energy reported \$1.4 billion in profits in 2022, an increase of about 15 percent from 2021 and the third consecutive year the multistate-energy company has reported revenues of more than \$1.2

billion.

The company has faced renewed scrutiny as the cost of electric supply it offers its customers doubled in January. Eversource passes through the cost of electric supply to its customers, so it doesn't make or lose money from that spiking price.

Why should the customer absorb the price of solar??

Isn't the whole point of solar energy to decrease monthly cost as well as protecting the environment. I don't think this survey is even viable if it doesn't at least lower costs.

It's very difficult to have solar on farmlands when we also need food, and removing the ability to farm is shortsighted. I worry about solar being placed on contaminated land and posing potential harm to those who would service the installations.

more than now? I thought this was to reduce our elec. bills. Are you talking about rates after solar is up + running or what it costs NOW?

Needs farm and forest equality scale, ie impact on food production, habitat etc

No no. No!

on how much more, and what the scale of disturbance/trade off with agriculture is

On location

only a few bucks a month would be ok but no more that

Our future depends on protecting our agricultural and forests.

Technically yes, but it is absurd that I'm being asked to pay more for a renewable resource whether it's on brownfield or greenfield

this is an embarrassingly shit question.

This last fact (about solar energy being cheaper to install on undeveloped land) is new to me, and MIGHT make me change previous answers. It seems like important info to make public. Even knowing this info, my priority would be to develop solar on already developed land like parking lots, rooftops, schools/barns, under power lines, etc.

Up to and no more than a 30% increase of the final bill amount.

We have our own solar panels. The price per kilowatt is very high for what we don't produce. Still, we can afford to pay more for leaving our farmlands and forests alone. But many others cannot.

We need to be taking a holistic view of the health of our lands and climate. We should be paying the real social and environmental cost of energy. If we did, fossil fuel energy would be much more expensive, and I believe electricity that removed farm and forest from ecological and recreational use would be as well. So yes, I'm willing to pay more for preferably sited projects, but I think the pricing signals are off. That makes for problematic tradeoffs for people with fewer financial resources. There are other ways to do this.

We need to figure out how to use less energy. If energy is expensive we'll develop technologies to be more efficient and conservative in our use. Otherwise we'll just keep growing our use.

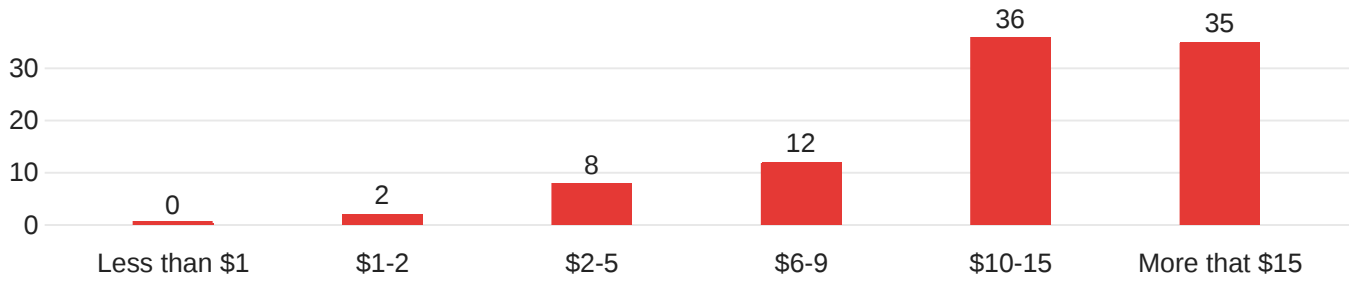
Why would it have to cost more?

why would it have to cost more? Solar is supposed to save money

Why wouldn't I pay more on my taxes and not on my electric bill? You can sneak in another town's charges on me. I might be OK with my taxes being raised but not my electric bill.

Yes, but low income residents should not pay more

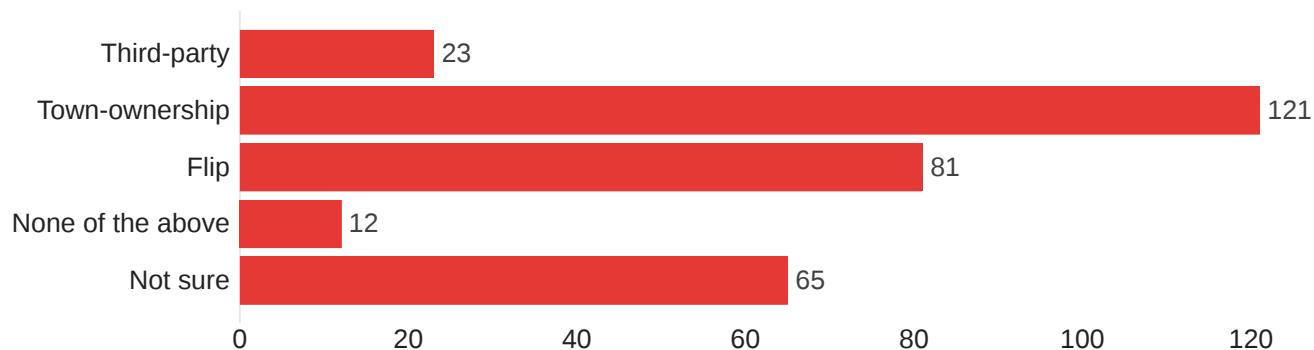
Q22 - How much more would you be willing to pay per month on your electricity bill?



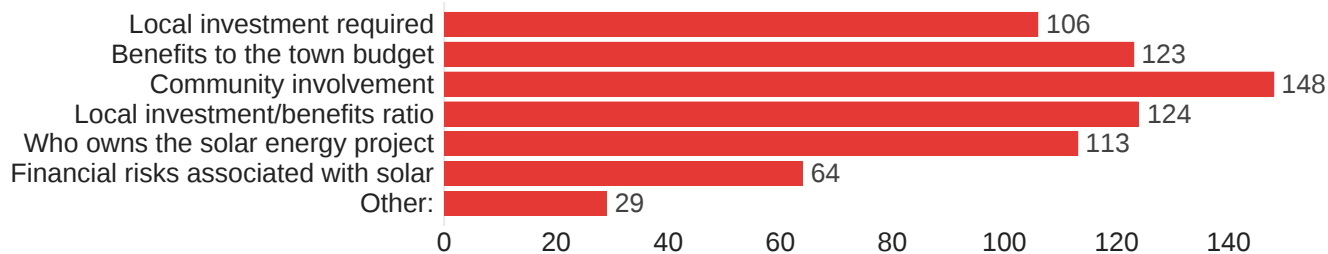
Q24 - Which ownership approaches to large, ground-mounted solar do you think could be appropriate for your community?

There are different levels of financial involvement and ownership that towns can consider taking in large, ground-mounted solar energy projects. Each has its own set of economic benefits and risks.

- **In the third-party development approach** an out-of-town company finances, develops, and owns the project for its entire lifespan. All investments, risks, and maintenance are the responsibility of this developer. The local community receives some revenue in the form of PILOT payments to the town and lease payments to the landowner but most revenue (90%) flows to the developer. This approach is simple for the town but involves relatively little community involvement in decision-making.
- **In the town-ownership approach** the town finances, develops, and owns the project for the entire 30 years. The town must invest significant funds (at least \$1.5 million) to install the project. All investments, risks, and ongoing costs are the responsibility of the town. 100% of project revenues flow to the town, roughly equal to double the investment (\$3 million). Decision-making is local.
- **In the "flip" model approach** an out-of-town company finances, develops, and owns the project for the first 6 years. The town then purchases the project at fair market value (at least \$500,000). Responsibility for any costs and risks switches from the developer to the town at the time of sale. Local revenues are approximately \$2 million. There is a greater role for the community in decision-making.



Q25 - Which attributes were most important in considering your attitude towards solar ownership approaches?



"Other" Responses:

establish an oversight committee (town)

Ability of citizens to protect trees and other natural features.

Again, recycle end of life panels and next generation system.

concerns about agricultural and natural land

Direct (negative) environmental and biodiversity impact

Disposal of Panels!

I do not believe energy production should ever be owned by corporations

I hate thinking about some big-name third-party developer making money that doesn't go to our community, but I don't want to put our community in the position of managing something unless we have the capacity to manage it, and that is an unknown to me.

I wanted to check most but it would not let me choose more than one.

I would be open to third-party development if they were regional and worker-owned.

LARGE solar projects are not needed for town municipal electric needs

Location of solar project development

Long term financials and life of solar equip

Loss of local autonomy.

Need more time to decide how I feel about this

no solar on quality farm land!

No town owned solar

Not in favor of any approach that uses agricultural or wooded land.

opportunities for local / community ownership

siting concerns are paramount

Sub regional municipal partnerships

Taxes and cost to residents

the town does not have the ability to manage a project of this scope, pretending otherwise will leave it open to exploitation by either the state acting for private interests or private interests directly

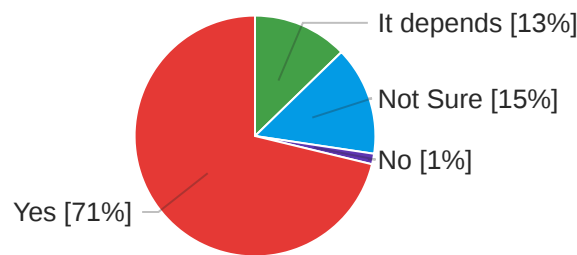
Town ownership is ideal, Flip CAN be good or a poor deal depending on process & outcomes, which led to my 'not sure' response. Creating some kind of state level revolving loan fund (green bank?) where towns could have help with upfront costs and risk management could ensure more projects get built in ways that keeps more of decisionmaking and revenue within the town

Very important to not lose anymore farmland and natural forests /watersheds/meadowa

Whether it actually reduces emissions or is simply feel-good greenwashing

ENERGY STORAGE

Q26 - In an earlier section, you indicated your preferences for siting solar energy projects in various places in your community, including previously disturbed land, undeveloped land, parking areas, agricultural land, etc. When considering the siting of large energy storage projects (1 acre or more in size), are your preferences for location similar to the preferences you identified regarding locations of large solar energy facilities?



● It depends ● Not Sure ● No ● Yes

"It Depends" Responses:

on what the storage infrastructure looks like + needs. We can picture a large, ground-mounted array, but cannot visualize a storage facility.

Are there noise issues with cooling the batteries?

I favor small distributed energy storage

I imagine the storage facilities are much smaller, if there was significant cost savings that outweighed land lost, I would be in favor.

If it catches on fire, how hard is it to put out? Is there lithium involved?

It should NOT take up farm land or much recreational land. I don't know enough about battery size, potential toxicity, longevity, pollution potentials, and locations.

Neighborhood sited battery storage an option

probably

safety of energy-dense facilities

Storage of this kind, sort of like volatile liquids should not be stored in residential areas

Such facilities should only be located in previously developed locations, zoned for industrial use

What are safety considerations for locating storage?

Yes, except where siting makes a difference for possibilities of micro-grid and load balancing that improve local/regional resilience and energy/climate impacts. Then I'd be willing to consider more flexibility re: siting if needed.

Q27 - What questions, concerns, or preferences do you have about

energy storage that you would like your local and state representatives to know?

I would not be upset if the local farmer or landowner agreed to a large solar array on their property, but would want it to benefit not only the landowner, but also the local community. However, I would always prefer arrays like the UMASS covered parking lots, school rooftops, + other large, already developed or disturbed lands

I think we need more incentives for commercial rooftops

like to keep local if generated locally

understand communities financial position, [illegible] of projects, commitment to clean energy available community properties

would folks be able to purchase/ install solar at any point after moving to Montague or is it only at the initial stage? It would be helpful to have an idea of the dynamics of solar for the future needs.

Aesthetics, noise

all about recycling. And I don't mean taking bad panels to the recycle station. What actually happens to them? Are they shipped off to India to pollute their land and water, is there a viable reuse plan for the materials, etc.

All of what I noted above as well as reducing our military budget to help pay for these needed public projects that our small towns can afford, yet we pay excessively into the military budget with no say on their spending or activities.

Am concerned with 1) who gets the \$ benefits of peak shaving, 2) how we can be sure to avoid further environmental racism in siting

Are the materials used safe; is there any possibility of soil and water contamination?

Are there any safety concerns with having storage close to homes and businesses?

Are there benefits of battery storage compared to the pumped water reservoir energy storage facility in Northfield?

As land lords we own properties that would be better suited to solar than our primary residence but the incentives only are for the primary residence. Can we change that?

As per above. Preference is to bring more storage into the mix where helpful from an energy and/or resilience perspective. And consider creative ways to expand storage (electric school bus 2-way grid connection, etc?)

Battery technologies, ability to shift battery tech if needed, wondering about water and sand energy reserve systems in concert with more traditional Li-ion, nicad, iron based battery tech.

Can "mini" neighborhood grids of roof top and ground mounted panels linked with storage work in village / urbanized cores?

Can the storage be setup right under the solar panels as to not require additional space?

Consider using Tesla

cost

Dangers of fire, releasing chemicals. Batteries should not be near rivers.

Don't know

Don't make deals with Tesla. Elon Musk is a union buster and a fraud.

Don't think that current forms of energy storage can balance solar's year-long intermittency and unpredictability.

Backup baseload power is always needed and until we mass-deploy nuclear and/or geothermal, we will be stuck on natural gas power plants.

Effective longevity of batteries.

Eversource delivery charges are way too expensive!!

Fire safety and security

For Eversource install solar to homes free. No cost to the homeowner.

General storage. Distribution. Costs.

High priority for me is to avoid disturbing prime agricultural land, wildlife habitat, natural recreation spaces, and other undeveloped and minimally disturbed land.

how can we promote residence energy storage solutions?

How do we decide between investing in existing technology vs waiting for new technology.

I

I agree using solar energy is beneficial. I do not agree with using large areas lands for these projects. I would rather see panels in places that are already being used for something else such as roofs or parking lots.

I am all for it- needs to happen- and we need to find a way to make it happen.

I am concerned about the danger batteries pose to health. Many people, especially with chronic health problems, cannot be close to batteries.

I am concerned about the disposal of these units after their useful lifespan is complete.

I am especially concerned about the disturbance of the Connecticut River by the Northfield Water Storage, and I would like to see more investment in so-called "smart grid" technologies being proposed such as allowing owners of electric vehicles to use the EV batteries to store energy for use in power outages, and to even out demand.

I am for solar energy storage. I am opposed to Northfield Mountain as a storage solution.

I am more concerned about affordable housing than installing solar, by far.

I am concerned about the impact on wildlife that large ground mounted solar can have. I want more research and public education about habitat disturbance and the impact on air quality that deforestation and installation would have.

I don't have enough info about implications of energy storage - how would it affect the surrounding environment, what are the alternatives, maintenance costs, etc

I don't know anything about energy storage to have an opinion about its placement

I really don't know anything about energy storage facilities and would need to learn more before forming an opinion

I support small homeowner storage systems

I would like more information about storage: what it is and what it entails

I would want legally required full disclosure of battery types, materials used, and potential environmental and safety hazards, as well as support for municipal emergency services to handle disasters at these facilities.

I'm concerned about battery leakage, and the ability of regional fire fighting forces to manage any disasters with batteries

Increases to property taxes

Is there ANY NOISE associated with energy storage sites? I don't want these facilities near residences if there is NOISE associated with them.

Less familiar with storage issues

Life-span and disposal of the panels is a concern. Where do the panels go and are they safe to go there when they no longer operate?

Like solar generation, I am concerned about the quantity of what in the future may be hazardous waste we are installing

Long term impacts on environment

Montague needs to rewrite their solar bylaws, as it cost the homeowner lots more money or the contractor will not build in Montague. A small driveway pv system is no longer affordable because of these bylaws that may be in violation of state energy mandated.

More incentives for off peak usage could help communities lower the storage needs

My concern is disturbing natural habitats for solar development. I think we should be using areas that are already concrete areas that have already been previously developed on and could not be farmed, or optimal habitats for wildlife

my only concern would be potential safety risks for nearby structures and forest lands.

NIMBY

No fossil fuels, less hydro, more solar is best

No to Northfield Mt pumped storage. Or any other wasteful, environmentally destructive methods.

NONE

None-do it

Not ANYWHERE near water, nor in community centers. Small battery storage for home sites should be allowed/supported.

Over ALL Cost and taxed increases without benefits

Please don't put blinders on just because the earth needs renewable resources. Removing trees growing forest is counterproductive. I can't say that enough destroying our forest is counter productive. We will destroy our planet just as much if we stay with our energy sources currently.

Possible soil/water contamination, as well as disposal of old or damaged batteries requiring bonds to pay for removal of obsolete or nonfunctioning solar equipment? since its a new technology, safety, environmental risks and aging is a concern Sound or other polluting considerations.

Start by getting storage and solar for emergency facilities throughout town.

the best "energy storage" for buildings is insulation/weatherization AND solar thermal domestic hot water systems
 " LOWER our energy loads FIRST!

The cutting of the forested areas. Where does the timber that was felled go. The horrible "selecting" cut in the plains is ugly-perfect placement. If you are concerned about the wild life conservation area, no need, all the equipment used to mow those thousands of trees down scared it all away. I used to have bear and deer wandering in our backyard.

there needs i be a coordinated, at national and regional levels, reform of ISO NE in order to actually build a renewable electrical grid. town and even county scale planning is a scam and will ultimately result in a waste of money and, more importantly, time.

There needs to be a discussion about batteries used for storage in smaller systems, and the availability of recycling them locally.

There should be more financing options available to small businesses. PACE loans do not meet the needs mom+pop businesses when they have \$2mil minimums.

They would be best in industrial areas.

This needs to benefit the citizens!!!

transmission lines and switching stations, poles and the infrastructure are really ugly. Every effort should be made to ensure that these projects do not affect the visual aesthetic of our town.

unsure what energy STORAGE means

Ways to mitigate the visual ugliness of electric infrastructure, i.e., switching stations, utility poles & lines, etc.

What are the downsides to large energy storage? (i.e damage to area, noise, distance from neighbors)

What is the lifespan of these solar panels? What happens to them at the end of their service life? How do these facilities affect the operation of the electric grid?

Where is storage equipment mined and manufactured?

Where is storage facility located? we should not sacrifice forest or farmland for solar energy

Who is manufacturing the batteries? Are these guaranteed? Are the storage facilities safe?

ADDITIONAL COMMENTS

Q28 - Are there any additional questions, concerns, or preferences about solar energy that you would like your local and state representatives to know?

(1) Solar panels, batteries &c (those already made as well as those to come) need to be 100% recyclable so they do not end up in landfills and become toxic. (2) Likewise, the manufacture of solar panels and batteries should be without harmful chemicals, toxic metals &c that are harmful to the land where they are mined and the people who work with them. This should be true for any energy source we use.

Don't want to turn Western MA into generator for all of MA at our expense

Have community involvement with meeting (educational discussion) panels, pro + con, debate, Timed when working folks can attend, local community TV coverage for elderly + disabled folk, public voting on projects

please don't make solar go through new/different permitting or review process if the project is a private development on private property

Solar energy needs more development before being considered for either residential or commercial. Properties with solar are either deficient to [illegible] or developers will have issues with roof issues, never [illegible], after have rental attached to them creating a burden for new homebuyers. I find more progress needs to be made before the [illegible] are to be considered

Absolutely do not put solar panels on undisturbed or wild land, or on agricultural land. There is no going back once panels are installed and farm land is diminishing.

Adamantly opposed to siting solar in forests, meadows, farmland UNTIL ALL appropriate buildings, parking lots, brownfields and disrupted lands have solar.

Again, I cannot stress enough that destroying our forest is not the solution

Bonus, benefits, tax advantages, something monetary for towns, cities that do at least or better than their fair share Every pot on its own bottom. Every town, city and state should meet their own electric needs.

Farmland is so important to this area that I would not want to support a project that was going to the livelihoods of the farmers. I feel like I don't know enough about the potential tradeoffs needed to meet everyone's needs and I would support some sort of compromise.

Forcing people to pay for one more thing is NOT the way to go.

From my limited knowledge, it sounds like solar panels have a shelf life. Once they are no longer usable, what is done with them? Is there a sustainable way to dispose of them?

I am concerned that the rise in renewable energy has done nothing to decrease energy prices. I am concerned that municipalities absorb the negative externalities of energy development even as local residents do not see meaningful reductions in energy cost.

I am concerned that there is so little emphasis on solar hot water systems which could dramatically reduce the energy needed for water heating. heating

I am still waiting for my heat pump hot water & whole house heat pumps rebates.

I am vehemently opposed to construction of solar fields in woodlands and other natural areas. Parking lots and rooftops should be used to the maximum allowed

I didn't see much about how the average homeowner, renter benefits by this process.

I don't think the energy grid should be owned by and maximized for for profit entities.. We should shift to 100% renewable energy as soon as possible.

I have grave concerns about Western Mass being asked to shoulder the burdens of using land to generate solar (as we do with fresh air and water) with an unfair PILOT program. Boston must not get cheap water, energy and clean air while Western Mass is underrepresented in government and bears a greater tax burden.

I think the hydro power generated in town should be considered when looking at amount of alternative energy

generated in town. The hydropower has impacts on our river, riverbanks, fisheries etc. that most other towns do not have to deal with.

I would have already installed ground mounted solar at my home if zoning allowed for it.

I would like any tax credits/subsidies to go only to small scale projects, and not to the benefit of large landowners.

I would like free solar installed in houses owned by anyone over 60, low income households and any new house would be required to install solar as part of the overall design unless they have less than 40% sunlight 60% of the year

I would love to add micro-community solar along the roadside of my property but current rules make it a poor financial decision. I'd love to see rules changed so that small and midsized community solar is supported, rather than benefits going to only home-scale or large commercial scale. I also am curious if there are ways to allow grid-disconnect for operation of a grid-tied residential system if the power goes down (for example, storage right now is too expensive for me, but if I could disconnect when the grid was down I could at least power the refrigerator/freezer and water pump when the sun was out w/o turning to a diesel generator.

I would love to see more off-shore wind as well. :)

If there is any way to install grid to battery power on each installation

I'm extremely concerned about the need to address our climate crisis, which includes protecting and nourishing our trees, green spaces, and wild places! Accordingly, I find chart about Solar Capacity Options confusing as to why Community Self-Sufficiency requires so much more development of land than does a Regional Energy Goal?? Also my responses to the previous chart regarding possible benefits to our town would all depend on potential LOCATIONS of solar installations.

I'm particularly concerned with solar being incentivized for ag land that has been protected for ag use with public dollars! (And similar for protected forest)

keep it off farm, forest and meadow land

Large scale solar should not be allowed in rare & endangered species habitat.

No parking lot should be without solar panels

NOT ANY MORE. ALL GONE DUE TO THE FORESTS BEING CLEARCUT!!

Please no solar installations on agricultural, pasture, nor forest land!

please offer free solar for residents to put on their homes

Price of electricity is already going up. All electric is not feasible for retired persons. Certainly can not afford an electric car. To work, electricity needs to be affordable to low income also.

put solar panels on school and hospital roofs. They can be used for back-up power

Questions about rebates/tax breaks for adding solar to my residence

Right to veto a project.

So many things that are currently unknown and that I don't know to ask about.

solar projects on forest and agricultural land is counterproductive to dealing with climate change

Solar should go in roofs and parking lots only

S-RECS (Solar, renewable energy credits) should be continued as a way for homeowners to spread the cost of their initial investment. How do we make solar more equitable? Low income households need options too

That solar panels go on already built areas not unbuilt land

The fundamental science and reasons why conversion to solar is be promoted and subsidized by taxpayers

The only way this works and is equitable, is if the utilities are actually accountable. The utilities should be publicly owned, not shareholder owned.

The projections for necessary acreage for self sufficiency are untenable, in that they would cause irreparable damage to local food production, biodiversity, water quality, heat island effect, etc. For a proposal like this to make any sense, we need to radically reduce electricity needs (by 10x-100x). This means public transit, electric bikes, retrofit/green build, and a big shift in behavior. You can't discuss or plan for this stuff in isolation.

These must be union jobs

They should be non-profit.

Use of rooftops first. Town-owned is preferred. Don't developed agricultural and conservation. Don't cut down forests and woodlots. Use the Rt. 63 corridor where open. Hide poles and infrastructure

We must stop building solar, housing, or commercial buildings on agricultural or wooded lands. We need these lands for

growing food and preserving the climate. Please bring in lots of solar but on rooftops and disturbed land only.

We need to be investing and researching efficiency and conservation techniques as heavily as renewable energy. This is so important!

We should FIRST be looking at factor 10 reductions in energy use/increases in energy efficiency. It's STUPID to invest in renewables without reducing demand first. We should also prepare for other class 1 renewables, especially in the long term.

What are the safety and security concerns for residents? How will this affect wildlife?

What happens to the solar panels once they wear out or are broken? As of now, there's no real plan or way to recycle. The panels contain chemicals that leach out of them? How hazardous are they and will they contaminate the land? We can't destroy good farm land.

What measure are being taken to address the future recycling of solar projects?

Where are the solar panels manufactured

Where will the waste go when these assets age out. Does the state have a plan for support disposal of decommissioned equipment

While the idea is good, government implementation would need to be good/well researched and maintained

Work hard and work fast to get transitioning to green energy as fast as you can

Would love to see solar become an affordable option! As a non-homeowner, not really something I currently have access to. So solar at a town level sounds great.

Q29 - Are there solar energy topics that you would like to see your town learn more about?

Benefits to community

Questions to be anymore would be - who is responsible for repair/replacement of panels and equipment? My understanding is that when a residential property has a problem to the repair/replace the homeowner pays to have the replacement, then pays to have it reinstalled. Are often not experienced,

Aesthetic impact for our lovely town.

Agriculture is poorly understood by most folks; would be useful to have a seminar on that.

All the pros and cons. The best solutions for the least amount of sacrifice to taxpayers

Battery storage and off-grid options for all homes

Community solar with tax benefits for residents

Cost

education on residential options that are cost efficient. I do not trust the companies selling and pushing their products without education

Efficiency and conservation incentives

equity issues

everything you have mentioned in this survey

Help building owners understand solar incentives and how to tap them.

I don't believe the space usage for the energy generated is an efficient use of the land

I feel like I am not completely educated enough on the options and tradeoffs. I do want to act to fight climate change, and want to learn more about what that needs to look like. Thanks!

I think large scale is a important topic, but this survey focuses too much on it and ignores other big issues and obstacles.

I want a cradle to grave roadmap for the solar panel, batter storage, etc published.

I would like government to provide incentive monetarily, for towns, cities across the state of Massachusetts to utilize abandoned building lots for solar farms. Depending on where they are, of course, but please consider this before,

considering trying more of our forest, our wildlife. Our birds in our lives, depend on what the trees provide to the planet and put a human, thank you

I would like the town to look beyond solar, to wind and small scale hydro.

I'm sure that each and every resident has concerns about costs, distribution, advantages, safety.

I'd like a clearinghouse for solar contractors organized and supported by the state for residents to access. I don't know where to begin or who to trust.

If community solar is available, is community battery available?

If solar panels are installed on municipal buildings could the town qualify for a volume discount? (multiple buildings mean multiple solar panels)

Installation of rooftop solar that looks like a regular roof as opposed to panels - if it even exists.

Integrated approaches taking into consideration closed-loop/circular economy and living systems/regenerative approaches.

is there possibility of locating solar along or over the canal?

Large subsidies for home owners to purchase home solar and storage batteries.

Local funded, locally owned solar that benefits the community. I would hate to see the town allow a third party to come disrupt the local landscape, to make profit selling power outside the community, with no ongoing direct benefit for residents

Local ownership of renewable resources

long term impact on farmland viability, habitat, etc, and opportunities for community ownership, etc

Maintenance and Repairs costs- who pays????

Maintenance of solar projects for the future.

more about our current solar farms; how they are doing and how the electricity they generate is used.

Neighborhood battery storage for mini grids during power disruption

neighborhood solar cooperatives

Other options for localized electric generation. How much energy is lost through conversion and transmission?

Please come up with a way to take a picture of a home's heat loss, as mice ect. eat the insulation. I should be able to do a no cost for energy at my home.

Programs that provide grants to private homeowners to install their own solar array, like many other towns in the Valley have done. (What's one example).

read above

Recycling of used solar equipment. Hazardous waste run off from panels.

resident incentives

Smart Grid and potential distributed battery storage such as using EVs when they are not being driven.

Solar panel manufacturing and waste disposal

Solar shingles

Stop solar, preserve our wild life habitat

Storing community solar energy generated to benefit residential customers

Thank you for this survey!!

The town should have the full financial info presented in a clear and concise way-solar companies can be confusing. Town residents should understand clearly what is going on

Trade offs, esp. forest vs. solar arrays

We should be group buying renewable energy for residents like Greenfield is doing.

What are the current thoughts, what is this survey designed to determine?

Q30 - Use this space to share additional comments or questions.

'- I am glad that the Town of Montague is looking at and considering these issues. - Let's do this in the smartest way

possible without destroying our beautiful natural surroundings. [Note for analysts: this was a paper survey entered into Qualtrics]

I support the goal of our state achieving 100% energy through renewable (solar and wind) and efficiency. Hydro has many negative impacts to river systems. I support the state requiring all new construction to be oriented for solar panels, that all commercial centers have parking areas with overhead solar panels, and the roofs of commercial buildings if flat, be retrofitted with solar. I support offshore wind energy development akin to Denmark. Interstate highways have immense land bordering them which can be used to site solar and wind.

(was going to ask to see the survey results, but I see you will already publicize them when they are ready)

Development of solar arrays doesn't HAVE to be so ugly if its situated correctly. The town should approach the owners of the old Sirum Equipment on Rte. 63- marqinal soils, already open, not suited for agriculture. On Question 16: for agricultural land said bad move and natural land said do not do that. Then for question 17 for areas hidden by forest or other low elevation sites not visible, she said: This would be site specific case-by-case reviews enough said.

If I were not "old" and probably not able to remain in my home (cost of maintenance) If I have already taken advantage of current enticements (insulation, etc.) If I am dubious about state supported plans and the reliability of companies associated with them. If I could afford to purchase my own panels AND I would wait for next generation of panels that appear to have significant improved appearance, productivity, etc. Good luck! This took some time and thought. The people who do not respond will scream the loudest when plans are put forward. Reference mascot change a couple of years ago

It would be helpful to offer incentives. we have a meadow on our land, rooftop (barns and house), but can't afford to install with personal funds, Question 21 - willing to pay \$15 more

This survey had zero introduction. Who is collecting this information and for what purpose? obviously, I want to contribute, but a little orientation WOULD have been nice. Also did not understand Question 16

(1) Solar should not be considered alone. Montague, for example, has considerable water power. (2) Destroying land for solar is not better than destroying it for fossil fuels. The Connecticut River Valley, for example, has some of the richest agricultural land on the planet. Disturbing that releases carbon. In the face of climate change we also need all the good local agricultral land we can keep. "Undeveloped" land is land in its natural state, which is what we need to protect and increase. (3) Likewise, we need more trees, not fewer. Cutting down trees to build solar panels will intensify climate change as well as destroying our remaining bits of natural habitat. (4) Solar power cannot be simply a replacement for fossil fuels. We need to eliminate waste everywhere in the system " to use less energy overall and more efficiently. (5) Decisions about the survival of life on earth cannot be based on monetary cost. If only the rich can afford the solutions, then we will fail. Consider the example of Ithaca, New York, which appropriated a large amount of money to subsidizing energy-saving appliances like solar panels, induction cookers, EVs &c so that everyone could get them with the goal of making the whole city net-zero by 2030 I believe. Communities too small should band together, or the state should act communally. (6) Developers should have no control over the situation as their primary motive is profit not the general well-being.

(Note to data analyst: This is a paper survey)

[Public]

As noted several times earlier, this survey is misleading and narrowminded. See two comments on earlier questions.

Do we have a plan for reuse and recycling of solar panels and associated hardware in 25 years or however long these items will last?

Efficiency, Efficiency, Efficiency! Use it up, wear it out, fix it or do without. REDUCED demand is key to making wise choices in RE deployment/scale.

Energy efficiency and conservation should be our highest priority.

feel free to contact me anytime about this survey @ jrpeters25r7@gmail.com. I have lived in Montague all my 60+ years.

<https://www.theguardian.com/us-news/2023/may/21/solar-farms-energy-power-california-mojave-desert> "There are so many other places we should be putting solar," says Clarke, of the National Parks Conservation Association, from homes to warehouses to parking lots and industrial zones. He describes the current model of large-scale, centralised power generation, hundreds of miles from where the power is actually needed, as "a 20th-century business plan for a 21st-century problem". "The conversion of intact wildlife habitat should be the absolute last resort, but it's

become our first resort " just because it's the easy fix."

I am disturbed when I see solar arrays on agricultural land or when folks talk about cutting down forests. There are many sites that could hold these arrays without destroying our natural spaces.

I see solar becoming another platform for corporate greed. This survey, I hope, helps solar energy help all, rather than just the few money hungry.

I would install on my roof, but it is slate. I was told they can't install on slate. Is that as true?

Is geothermal energy a possibility locally?

I've had thoughts about installing solar at my property in Turners Falls. Each time I send an inquiry to a website I get bombarded with emails, texts, phone calls. And not one of these companies can even give a guess about costs unless they come to the property and take a half day of our time and then we never hear from them again. Everyone seems to be able to go on line and get as much info as they need when it comes to buying or selling something related to any property. So the process needs to be easier for the average homeowner. Similar to replacing a roof, I would think.

Keep in mind that the visual aspects of any installation are of prime importance.

My main issue is that the whole debate over leasing versus purchase has ignored people who may not be able to purchase. The solar community is so hostile to leasing (and the leasing companies aggressive and often dishonest) It is hard to evaluate the options. Also solar is VERY COMPLEX and hard to figure out if you have TENANTS.

Our town needs to focus more on public safety and less in solar. We have high crime and under staffed police fire and EMS.

Politicians need to extract themselves from the politics of climate change and understand the science of climate change. This science is not settled. Read Koonan's book Unsettled.

questions 27-30: I think solar installed in parking lots in general is great. No problem w/ roofs or individual's yards. Stay out of the forest + leave recreation views clear from site of solar installations.

Regarding large solar installations near various community features, I would oppose these in "areas hidden by forests" if this means taking down trees in any section of the forest!

Some of the general questions did not offer enough nuances in the answers for preferences to be clearly made. For example, How likely would you be to support large, ground mounted solar energy in your town if the project provided the following benefits to your town? I'd strongly support solar that reduces low-income electricity rates IF it is located on developed/disturbed land or rooftops. Also, I wonder how you came up with the total electricity demands projected for MA and related questions about how much space for solar will be needed.

Thank you for doing this

Thank you for doing this, I hope that you consider creative win-win-win ways to bring more solar to our town, region, state.

Thank you for giving us this opportunity.

Thank you for putting together this thorough survey!

Thank you for the survey! it got long but contained alot of good info and good questions. I wonder if there could be a shorter version for people who might not have the time or energy to go thru all these questions.

Thank you.

thanks for a comprehensive survey

Thanks for asking

Thanks for the opportunity to participate. Your site crashed on me twice while I was filling it out.

This survey was too long. What is the most efficient way to run air source heat pumps?

Until we change to municipal owned power and distributed renewable energy and storage " we can't make the change with Private for Profit Monopolies whose sole purpose is profit! Also (after question 21), my house generates all the electricity I need for all energy needs (all Electric house). So " is it fair that I don't have an electric bill??

paper survey

We are not big communities, and have very limited coffers as it stands. How will all of this be able to happen? At what cost monetarily, socially, physically, and any others ways that may be a current blindspot in the name of 'progress'?

We can't put all of our eggs in the solar energy basket! We need more hydro, natural gas, atomic energy also! Where do all the panels go? How much energy, environmental destruction, etc. per megawatt? Backup storage needed for the big hurricane as we rely more on solar. Priority should be on upgrading the infrastructure + distribution of the grid!!! [PAPER

SURVEY COPY]

What about wind power? Have we given up on wind power & if so why?

Why aren't we using the hydro power we generate ourselves, rather than selling it? Solar is great and I think we should invest in some but has anyone done a recent cost/benefit and environmental impact survey between solar and another hydro generator? (Is there space for another hydro generator?)

You may not have wanted to give me an extra comment back. Again, stop destroying our forest and our tree not just a quart or treat that enough ever source is destroying acres in acres of trees for the precious line because God for bid the human feet go a day or two or seven without electricity in the event of power outages.

LOCATIONS

Q17 - To what extent do you support or oppose large, ground-mounted solar energy near various types of community features?

Field	Strongly Support	Support	Neutral	Oppose	Strongly Oppose
Alongside waterbodies – streams, rivers, ponds, lakes, wetlands (e.g., the Millers River, Lake Pleasant)	11	22	45	69	69
Adjacent to public recreation areas	33	60	57	36	32
Adjacent to the town center	33	67	49	38	28
Adjacent to historic buildings or properties	15	41	54	64	41
Adjacent to residences	29	68	59	28	30
Along rural roads	20	67	59	42	28
Along major roads (e.g., Route 63)	48	88	37	19	22
Areas visible from scenic vistas or other high elevation locations	14	40	62	50	52
Areas hidden by forest or other low elevation sites not visible	41	75	52	20	26

Q18 - To what extent do you support or oppose large, ground-mounted solar energy projects in these various configurations on agricultural land?

Field	Strongly Support	Support	Neutral	Oppose	Strongly Oppose
Active hayfields or pastureland converted to solar	7	16	39	75	80
Agricultural land currently used for vegetable or fruit production converted to solar	5	0	23	82	107
Solar panels raised above agriculture land to allow farming to continue beneath (sometimes called "agrivoltaics")	41	70	58	20	31
The edges of active agricultural land converted to solar	35	68	62	22	32
Agricultural land not currently being farmed converted to solar	20	43	43	59	52

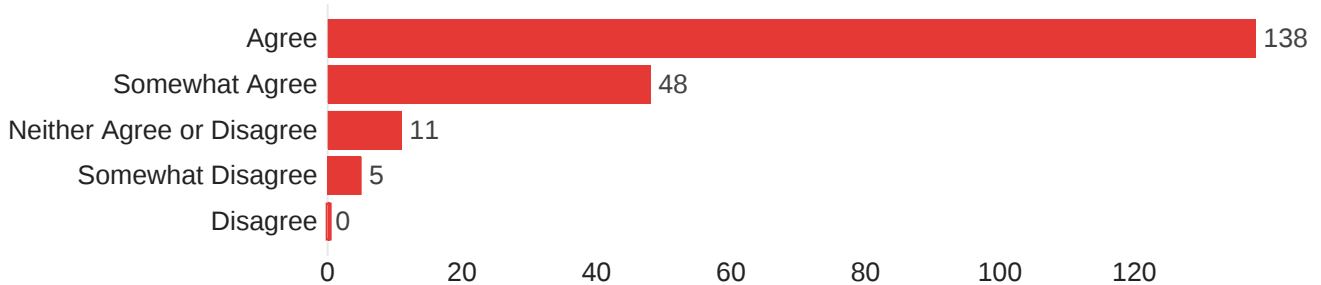
Q19 - To what extent do you support or oppose large, ground-mounted solar energy projects on various types of non-agricultural land?

Field	Strongly Support	Support	Neutral	Oppose	Strongly Oppose
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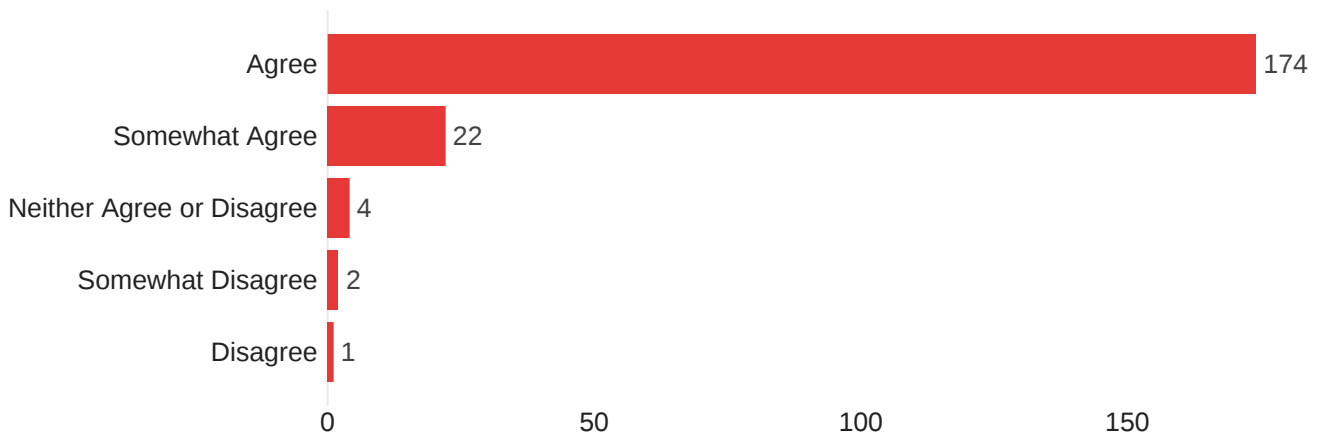
Former landfills and brownfields	136	58	20	5	3
Former sand/gravel extraction sites and quarries	124	63	24	8	2
Priority wildlife habitat	3	0	19	48	148
Large tracts of mature forest	3	4	9	50	152
Large tracts of forest regularly harvested for timber	5	21	29	75	88
Small patches of mature forest	2	14	26	53	123
Small patches of new growth forest, small trees and saplings	4	19	36	71	88
Meadows or Shrublands	3	24	37	64	89
Electricity transmission line corridors/powerline right-of-ways	103	70	34	9	5

GENERAL OPINION/DEMOGRAPHIC QUESTIONS

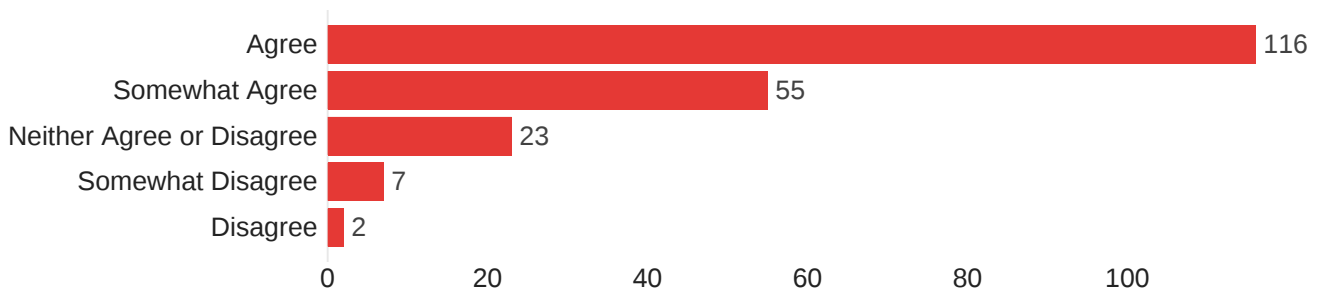
Q35 - I feel attached to my town



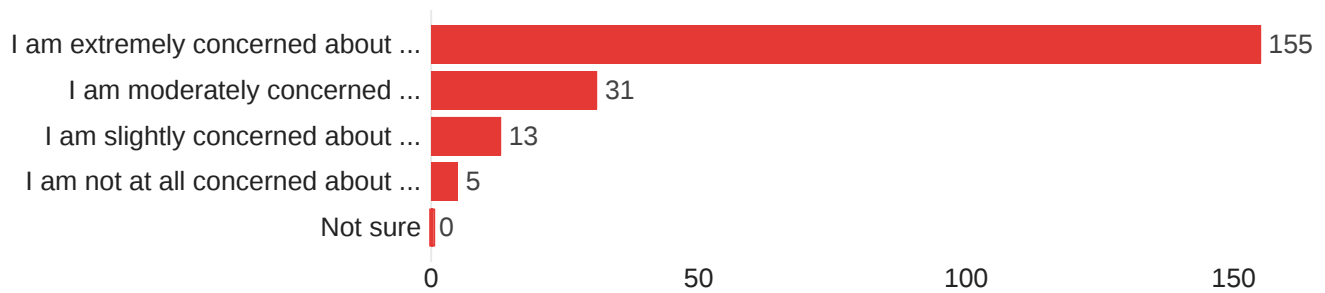
Q36 - I feel attached to Western Massachusetts.



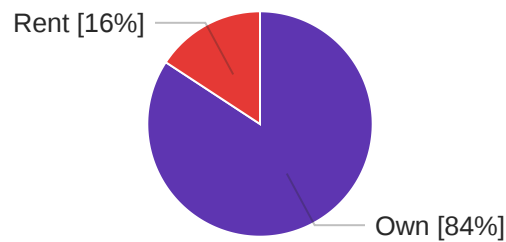
Q37 - I feel attached to the Commonwealth of Massachusetts.



Q38 - What is your personal level of concern about climate change?



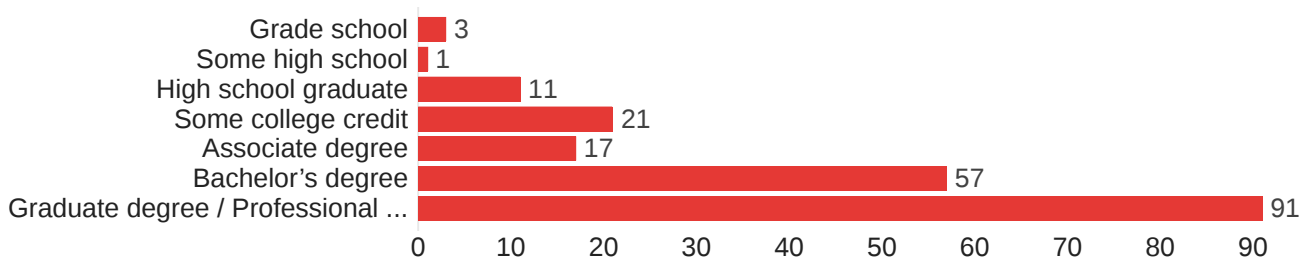
Q39 - Do you rent or own your current residence?



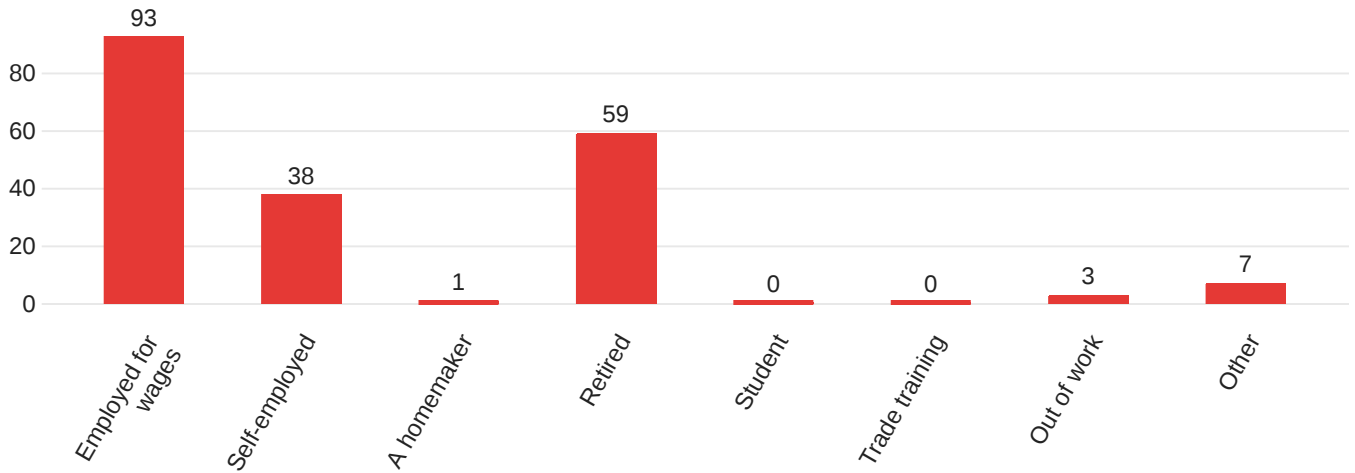
Q40 - What is your age?

Field	Min	Max	Mean	Median	Standard Deviation	Responses
What is your age?	22	90	55	57	15	200

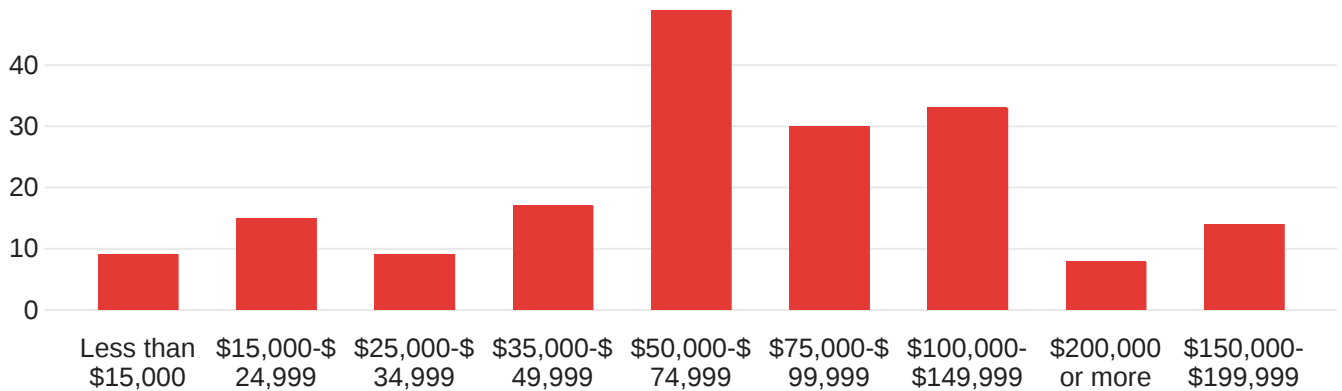
Q42 - What is the highest degree or level of school that you have completed?



Q43 - What is your current employment status?



Q44 - Which category best describes your household income (before taxes) in 2022?



Field	Choice Count
Less than \$15,000	9
\$15,000-\$24,999	15
\$25,000-\$34,999	9
\$35,000-\$49,999	17
\$50,000-\$74,999	49
\$75,000-\$99,999	30
\$100,000-\$149,999	33
\$200,000 or more	8
\$150,000-\$199,999	14

Q45 - What is your race/origin? Check as many as apply. - Selected Choice

