# Report on the Deliberative Poll® on "Vermont's Energy Future"*

**Center for Deliberative Opinion Research**
**University of Texas at Austin**

**Report prepared by**

**Robert C. Luskin**
**David B. Crow**
**James S. Fishkin**
**Will Guild**
**Dennis Thomas**

*Deliberative Polling® is a trade mark of James S. Fishkin. Any fees from the trade mark (waived in this case) are used to support research at the Center for Deliberative Democracy at Stanford University.

Nicholas Hundley, Matt Vandenbroek, and Alice Siu provided invaluable assistance in assembling this report.

## Executive Summary

This report describes the results of the Vermont-wide Deliberative Poll conducted by the Center for Deliberative Opinion Research at the University of Texas at Austin for the Vermont Department of Public Service in Burlington November 3-4, 2007. The Deliberative Poll questioned a random sample of Vermonters, recruited them to spend a weekend deliberating the issues of how Vermont should meet its future electricity needs, and then questioned them again. The post-deliberation distribution of opinion gives a picture of what Vermonters *would* think about these issues if they knew, thought, and talked more about them. The contrast with the pre-deliberation distribution suggests how such more considered opinions differ from the less considered ones visible in ordinary surveys.

The results address a large number of policy issues: for example, what reliance should be placed on energy efficiency and on energy from various sources like wind, nuclear, and hydro in meeting Vermont's future electricity needs, whether the state should continue to buy energy from existing suppliers like Vermont Yankee and Hydro Quebec, and whether the state should rely more on a few large central facilities or a larger number of smaller and more geographically distributed ones.

After deliberating, the participants' considered opinions on these matters included the following:

*****They wanted to see almost a quarter of the state's electricity come from hydro, about 18% come from wind, and a bit under 15% come from solar, wood, and nuclear, in that order. They wanted almost none of it, however, to come from oil or, especially, coal.

*****86% of them agreed (49% of them strongly) that Vermont should continue buying electricity from Hydro Quebec, and 97% agreed (76% strongly) that it should continue buying electricity from the Vermont based independent Power Producers, while a slender plurality (50% versus 48%, with 2% in the middle) agreed that it should continue buying electricity from the Vermont Yankee nuclear plant.

*****90% supported (74% strongly) a wind farm's being built if it were visible from where they live.

*****69% wanted to see the electricity used by Vermonters produced mostly or entirely (13% entirely) inside Vermont.

*****70% preferred seeing Vermont's electricity produced by smaller facilities, spread across the state, compared to 10% who preferred seeing it produced by a few large, centralized plants (20% in the middle).

In many cases the deliberative experience shifted the participants' policy attitudes to a statistically significant degree. For example:

*****The support for continuing to buy from Quebec Hydro increased by 20%, and the support for continuing to buy from the Independent Power contracts by 8%, although the support for continuing to buy from Vermont Yankee nuclear plant did not change significantly in either direction.

*****The percentages of the state's electricity the participants wanted to see come from hydro and wood increased, while the percentages they wanted to see come from coal and oil decreased.

*****The support for increasing efficiency as much as possible versus buying or generating power increased.

The results also address many of the empirical premises (for example, how much reduction in usage can be gained by energy efficiency, what percentage of the state's power *could* be supplied by each of various sources) and values or goals (for example, reducing greenhouse gas emissions, ensuring a reliable electricity supply, avoiding facilities that detract from the scenic beauty of Vermont, or keeping electric rates stable) that may underlie these policy attitudes. Knowing what goals the public wants energy choices to achieve and how well (before and after deliberation) it thinks given choices serve given goals sheds light on why it holds the policy preferences it does (before and after deliberation).

Some examples of the sample's post-deliberation opinions on relevant empirical premises are:

*****Majorities of 55% and 64% considered that power not purchased from Hydro-Quebec or from Vermont Yankee would *not* have to be replaced by natural gas, coal, out of state nuclear, or oil.

*****The participants thought that increased efficiency in the use of electricity could reduce the Vermont's need for electricity by an average of 22% over the next 10 years.

*****Wind, solar, and efficiency were seen as extremely friendly to the environment; methane, hydro, and wood, as lightly less but still very friendly; nuclear and natural gas as somewhat unfriendly; and coal and oil, in that order, as extremely unfriendly.

*****Majorities thought that cleaner energy will cost more in the short run but not that it will do so in the long run.

Here too deliberation brought some significant changes, among them the following:

*****The percentage by which the participants thought the need for electricity could be reduced over the next ten years declined by 9%.

*****The percentages thinking that power not purchased from Hydro-Quebec or from Vermont Yankee would *not* have to be replaced by natural gas, coal, out of state nuclear, or oil increased.

*****Wood and methane came to be seen as significantly friendlier, and oil, coal, and natural gas as significantly unfriendlier to the environment.

*****The percentage thinking that cleaner energy would cost more in the short run increased.

Some examples of relevant values held by the participants include:

*****"Minimizing air pollution," "getting electricity from resources that will never be used up," "reducing the emission of gases that may contribute to climate change," and "ensuring a reliable supply of electricity" were regarded as the most important of a series of possible goals to be

considered in deciding how Vermont might meet its future electricity needs, "keeping electric rates stable for consumers" and, especially, "avoiding facilities that detract from the scenic beauty of Vermont" as the least important.

*****As among several possible “threats,” the level of concern was highest for "greenhouse gases produced by burning fuel to make electricity" and for "other air pollution produced by burning fuel to make electricity," somewhat lower but still high for "radioactive waste from nuclear power plants” and "damage to river habitats from building hydro power facilities," and much lower for “the visual impact of wind farms on the scenery of Vermont."

Unlike policy attitudes and empirical premises, values are not expected to change much from deliberation, and by and large these didn’t, although the importance attached to "getting electricity from resources that will never be used up" and “minimizing air pollution” did increase.

The participants learned a great deal, improving their average score on a series of factual knowledge questions by a whopping 39.5%. They also expressed appreciation for the process, overwhelmingly regarding it as valuable and fair. They came to care (still) more about how the electricity they use is produced.

We stress that the foregoing are only examples. The data speak to many additional questions. We leave further details to the discussion, bar graphs, and appendices below. Additional questions should be directed to Professor Robert C. Luskin, Director, Center for Deliberative Opinion Research, University of Texas at Austin, Austin, TX 78712 (rluskin@mail.utexas.edu, 512-471-7209). .

# Table of Contents

This is a report on the results of the statewide Deliberative Poll on "Vermont's Energy Future," held in Burlington on November 3-4, 2007. The Deliberative Poll was conducted for the Vermont Department of Public Service by the Center for Deliberative Opinion Research (CDOR) at the University of Texas at Austin, in collaboration with personnel from Public Decision Partnership (PDP) in Austin and the Center for Deliberative Democracy (CDD) at Stanford University.

## The Vermont Deliberative Poll

The idea of Deliberative Polling is to provide a picture of what people would think about given policy issues or electoral choices if they knew or thought more about them. As matters stand, most people know and have thought very little about most policy issues—certainly including those of energy alternatives. This poses a problem for decision makers seeking meaningful public input. Public forums like town meetings tend to draw sparse attendance and to be dominated by vocal, unrepresentative minorities. Conventional surveys elicit views that are more representative but largely uninformed. Deliberative Polling, which draws a random sample, gets them to deliberate, and *then* harvests their opinions, is designed to provide public input that is *both* representative, unlike that from town meetings, focus groups, and the like, and informed, unlike that from conventional surveys.

### Sampling and Recruitment

In the Vermont Deliberative Poll, a random sample of telephone numbers (an "RDD" sample") was drawn by two survey houses: first, the Office of Survey Research (OSR) at the University of Texas at Austin and then the private survey firm NSON in Salt Lake City. We had to switch survey houses because OSR would not have interviewed enough respondents in time. In all 750 respondents were interviewed and invited to the Deliberative Poll. Of these, 243 were interviewed by OSR and 507 by NSON. By and large, despite some period of overlap, the earlier interviews were conducted by OSR, the later ones by NSON.

Once someone was reached at one of the designated telephone numbers, the interviewer asked to speak with the adult household member with the most recent birthday, a method that closely approximates random selection. If the person with the most recent birthday was not available, the interviewer would call back to reach him or her later, making several attempts if necessary. No substitutions were allowed. Nobody but the household member with the most recent birthday could take the survey. This is important to preserve the integrity of the random sample. A total of 5-7 calls (attempts to reach either the household or the person with the most recent birthday within the household) could be made before abandoning the attempt to obtain an interview from a given household (5 for calls made by OSR, 7 for calls made by NSON).

In the calls made by OSR, the respondent was first given the questionnaire, then invited to the deliberations. Shortly after switching survey houses, however, we changed this procedure. Instead of administering the full questionnaire, then issuing the invitation, we began first issuing the invitation, then administering an abbreviated version of the questionnaire to those who said yes or maybe to the invitation. We made this change in the interest of recruiting an adequately large sample in time for the deliberative weekend. We shall refer to these two interview-invitation modes as *LF* for "long form" and *SF* "for short form" (although, again, it is not just the length of questionnaire but the sequence of the invitation and the interview that distinguishes them).

Subsequent calls were made by OSR, several University of Texas at Austin and Stanford graduate students (Mary Slosar, Alice Siu, David Crow, and Nuri Kim), and Robert Luskin to follow up on this initial invitation—to convert maybes to yeses and ensure that the yeses stayed aboard. These calls provided additional information (about location and lodging, etc.), reassured respondents that they didn't need to know a lot about these issues already to participate, and answered any other questions they had.

The incentives to participate, sketched in the initial interview, and then elaborated on in the subsequent recruiting calls, included the opportunity of having a voice in an important policy issue, the opportunity of meeting fellow Vermonters from all parts of the state and all walks of life, the possibility of being seen on television or mentioned in the newspaper, an all-expenses paid weekend in a good hotel, and an honorarium of $150. The last two were particularly important for attracting the less well educated and less well off, who are normally hard to recruit for policy discussions. In all, 152 sample members showed up in Burlington. We say more about them below.

**The Briefing Document**

Everyone agreeing to attend the deliberations was sent a carefully balanced briefing document laying out the major arguments for and against the major policy proposals. The document was also available on line at the DPS website.

This document, available separately, was the work of a combined Advisory Committee and Resource Panel consisting of Steve Blair (IBM), Steve Costello (Central Vermont Public Service), Robert Griffin (Green Mountain Power), Patrick Haller (Vermont's New Residential Construction Market Manager), John Irving (Burlington Electric Department at the McNeil Generating Plant), Kerrick Johnson (Vermont Electric Power Company (VELCO)), David Lamont (Department of Public Service), James Matteau (Windham Regional Commission), Sandra Louis (Hydro-Québec), David McElwee (Entergy), James Moore (Vermont Public Interest Research Group), Andrew Perchlik (Renewable Energy Vermont), Sylvie Racine (Hydro-Québec), Patricia H. Richards (Vermont Public Power Supply Authority), Richard Sedano (Regulatory Assistance Project and a past Commissioner of the Department of Public Service), Eileen Simolardes (Vermont Gas), and John Zimmerman (Vermont Environmental Research Association). The panel was co-chaired by Dennis Thomas of PDP and Jonathan Raab of Raab Associates. Robert Luskin of CDOR, Will Guild of PDP, Patrick Field of Raab

Associates, and Stephen Wark and Robert Ide of DPS also participated and played important roles.

Some participants, interviewed relatively soon before the event, did not receive the briefing document beforehand. They were urged to attend anyway, and copies were available on-site, both for anyone who had never received one and for those who had left theirs at home.

**The Deliberative Weekend**

The participants arrived Saturday Morning, November 3, and left late Sunday afternoon, November 4, all but a few staying the Saturday night at the Sheraton Hotel in Burlington and the remainder in Hampton Inn in nearby Colchester. Local participants had the option of spending the night at home if they wished but were encouraged to stay at the hotel to maximize their opportunities to interact with their fellow participants.

The formal on-site activities alternated between small group discussions led by trained moderators and plenary sessions in which they put questions composed in the small groups to carefully balanced panels of policy experts and policy makers. Appendix A gives a detailed schedule of the weekend.

There were 13 small groups, averaging between 11 and 12 participants apiece. The participants were randomly assigned to the groups. The combination of random sampling and random assignment helped maximize the average heterogeneity of both the participants and the views expressed in each group.

The aim of the small group discussions was to give the participants the opportunity of sharing their views and of listening to and learning from one another—and thus of refining their own individual thinking about these issues. There was no collective decision to be reached, requirement or expectation of their reaching consensus. No votes were taken, and we discouraged shows of hands. The only recommendations are purely aggregative, consisting of

the post-deliberation distribution of opinions (and the change from the pre-deliberation distribution). We present these results below.

The moderators were selected for their ability to be neutral and their skill at leading small group discussions. We steered away from choosing moderators who seemed too committed to one perspective or other, too expert about energy issues, or too experienced at leading small group discussions aimed at achieving consensus, something Deliberative Polling tries not to encourage (or discourage). Their charge was to keep the discussion flowing, to encourage everyone to take part, to keep anyone from hogging the floor, to keep the discussion balanced and civil, and to see to it that all the major policy positions and arguments in the briefing document were considered.

The moderators were trained, in an all-day session on November 2, by Robert Luskin of CDOR, James Fishkin of CDD, and Will Guild of PDP. Among other things, we trained them to see to it that everybody contributed to the discussion, that nobody dominated it, and that everybody respected others' opinions and to get the participants to think clearly about the issues: What was it about the alternatives for Vermont's energy future that mattered to them? Cost? Reliability? The production of greenhouse gases or other pollutants? And how do the alternatives affect those things? What, therefore, from participant's perspective, would be the pluses and minuses of each alternative?

The plenary sessions were chaired by Ron Lehr of PDP, who kept each comment by a given panelist to a minute or so, in the interest of enabling as many questions as possible to be asked, as many panelists as possible to address them, and there to be as much opportunity as possible for probes by participants and follow-ups by panelists. Each panel had on average eight panelists, representing a wide range of interests and views. Many of the Advisory Committee and Resource Panel members listed above also served as plenary panelists. A complete list can be found in Appendix B.

**Measurements**

The questionnaire posed questions of several sorts, concerning policy attitudes (toward proposals to do this versus that), empirical premises (beliefs about states of the world or cause-and-effect relationships that may underlie policy attitudes), values or goals that energy policies might serve, interest in these issues, relevant factual knowledge, evaluations of the process at T3 only), and the participant's sociodemographic characteristics. From a policy perspective, it is of course the policy attitudes that are most immediately relevant, but the other variables help illuminate them.

We administered (slightly different versions of) the questionnaire at three points: the initial interview (T1), on arrival (T2), and just prior to departure (T3). The T1 questionnaire is thus pre-deliberation; the T2 questionnaire also pre, though a little less so, as the participants typically begin discussing the issues with family, friends, and coworkers, as well as paying heightened attention to media coverage of them, during the interval between the initial interview and their arrival on site. The T3 questionnaire is post-deliberation. The T3 questionnaire was comprehensive, including every question we asked at any time, excepting only a few sociodemographic items it was unnecessary to repeat. The T3 questionnaire is provided in Appendix C.

While the T1 questionnaire was administered by an interviewer over the telephone, the T2 and T3 questionnaires were self-completion, filled in by the respondents using pen or pencil and paper. The questions were constructed so as to work, in some cases with some trivial modification, equally well in both formats. We have found in the past, and the literature on the subject suggests, that differences attributable to the difference between these two modes are small.

**The Participants**

In all, 154 people showed up for the deliberations. Two—a local activist who pretended to have been interviewed and invited but had not and a woman who was not the household member with the most recent birthday—were not actually part of the sample and were therefore turned away. (You can't volunteer into a random sample.) Of the 152 actual sample members, one left early, after the first day, and one fell, was hospitalized, and remained in the hospital (for other problems discovered once she got there). Of the remaining 150, four did not complete a questionnaire at one point or other. That leaves us with data at all three points on 146 participants, to whom we confine the ensuing analyses.

These 146 constituted a reasonably representative cross-section of the state. The table in Appendix D compares these 146 with the other 604 initial interviewees who did not attend the event. We confine the comparisons to those questions on which we have data on all 146 (i.e., only the SF questions) and to T1 responses, given before the on-site (or anticipatory, at-home) deliberations could have changed opinions. The one exception to this last clause is that we do include one or two sociodemograhic items measured at T2 or T3, on the grounds that these are not opinions but invariant characteristics. Here statements about statistical significance refer to the differences between participants and nonparticipant—to the probability that we would see as much difference as we do if the two groups were really divided randomly.

The results do show some differences, particularly with respect to knowledge of and interest in electricity issues. Averaging across eight factual knowledge questions (excluding one whose response categories made the right answer unclear), the participants answered correctly 7.5% more often. They also said they cared more about how the electricity they consume is produced, by roughly two-thirds of a point on a 0-to-10 scale. Differences on these variables are inevitable. People already interested and knowledgeable about a topic are likelier to be willing to spend a weekend discussing it. Note that this makes the results conservative, in the sense of underestimating change. People who have already thought and know a lot about the

issues are less likely to change their views as a result of a weekend of deliberation. If the sample were not somewhat more interested and knowledgeable than average, deliberation should produce still bigger changes.

Correspondingly, the participants were also slightly better educated than the nonparticipants: 31.7% of the former were (just) college graduates, and another 37.3% had at least some graduate education, versus 23.4% and 28.7% of the latter. The participants were also somewhat likelier to be self-employed and less likely to work in a large company. Somewhat fewer than half (46.4%) were female. They were less frequently Republican and more frequently independent.

There were also some statistically significant differences in opinion. Compared to the nonparticipants, the participants leant more toward increasing efficiency versus buying or generating power (by .474 on a 1-to-7 scale), were more inclined to support a wind farm visible from where they live (by .316 on a 1-to-5 scale), were more in favor of increasing finding for the state's efficiency program (by .118 on a 1-to-3 scale), saw the weather of the past few decades more as part of a lasting climate change versus normal variation (by .504 on a 1-to-7 scale), tended to attribute any climate change more to human activity versus natural causes (by .708 on a 1-to-7 scale), saw methane and energy efficiency as environmentally friendlier (by .490 and .480, respectively, on a 0-to-10 scale), and disagreed more that cleaner energy will cost more in the long run (by .376 on a 1-to-5 scale).

Thee differences were hardly night-and-day, however, and a distinctly larger number of other sociodemographic characteristics and opinions—age; working part-time; being unemployed; being a student; being a government employee; being a Democrat; being liberal versus conservative; all seven brackets of household income; monthly utility bill; perceptions of the environmental friendliness versus unfriendliness of wind, oil, natural gas, coal, nuclear, solar, hydro, and wood; seeing cleaner energy as costing more in the short run—showed no significant difference. On the whole, it seems fair to describe the participants as a reasonably

good representation of the state (not to mention, a far better one than "samples" consisting of the people who show up for town meetings and the like).

## Overview of Results

For the policy attitudes, empirical premises, and values, two aspects of the results are important: where the participants wound up (the post-deliberation distribution of opinion) and how they changed (the difference between the pre- and post-deliberation distributions). The first is important because it represents our best estimate of what a more deliberative public—more informed, more thoughtful, having talked more about the issues, having talked about them with a wider variety of their fellow citizens, and having considered a wider variety of arguments—would think. That would be important even if nobody actually changed his or her mind, if deliberation merely enriched people's thinking without changing their opinions. The second is important because it estimates deliberation's effects: how would such more considered opinions differ from those people currently hold? The observed changes may well be *under*estimates—after all, the participants have had only a weekend (and, to a lesser degree, the preceding few days or weeks) to deliberate, as against, in most cases, a lifetime's previous inattention—but they suggest the directions in which further deliberation could be expected to move opinions further.

### How to Read the Figures

We present the results, based on the 146 participants from whom we have a completed questionnaire at all three measurements, in a series of bar charts in Figures 1-103. For the questions asked both pre- and post-deliberation (almost everything, save the sociodemographics and the evaluations of the process), the pre- and post-deliberation distributions are presented side by side.

The graphs vary in what measurement is taken as pre-deliberation. Where the question is one that was asked of the full sample at T1 (an *SF* question), it is T1. The T1 distribution

shows the responses at the moment the participants were first interviewed and invited to participate, before they could start paying more attention to electricity issues in the media or start talking more about them with family, friends, or coworkers. Where the question is one that was asked only of the 40 LF respondents at T1, however, we instead take the pre-deliberation measurement to be T2, enabling us to estimate the change for all 146 participants. The T2 distribution shows the responses at the moment the participants arrive on-site, after any anticipatory learning and casual discussion at home but still before the more intensive and balanced deliberations on site.

The blue bars give the pre-deliberation distribution, the green bars the post-deliberation distribution. The number at the top of each bar is the percentage of respondents giving that response. The text box gives the pre-and post deliberation means and the statistical significance of both the post-deliberation mean (how certainly it differs from neutrality) and the pre-post difference (how certainly it differs from zero).

This last is what the *p* values here are about. They, and our accompanying statements about “statistical significance,” refer to what would happen if we could have put the entire population of Vermont through this same process. They tell us about our ability to generalize from this sample of 146 Vermonters to the whole state. The *p* for T3 - T1, for example, refers to the probability of getting a T3 - T1 change as big as what we see among our participants if there would actually be no change in the population if it went through the same process. If the T3 – T1 among our participants is sufficiently *im*probable if there would be no change in the population, we describe the observed change as "statistically significant.” By convention, "sufficiently improbable" is taken to be $p < .05$. Roughly put, the *p*’s thus tell us how sure we can be that any change we see is “real.” The lower the *p*, the more certain we can be. For economy and clarity, the word “significance” (and its associated adjectives and adverbs) will hereafter always refer to *statistical* significance.

For the T3 distribution, the *p* is also a probability, but in this case of getting a T3 mean as far from "neutrality" as the one we obtain if the mean in the whole population, if it experienced the same process, would really be "neutral." For 1-to-5, 1-to-7, and 0-to-10 attitude scales, "neutrality" means the midpoint (3, 4, and 5, respectively). For percentage allocations, neutrality means an even share ( = 100/*K*, where *K* is the number of items asked about). E.g., in the question about asking what percentage of Vermont's electricity the respondent would like to see come from each of 9 sources, a neutral allocation would be 100/9 = 11.1%. For the T3 distributions, *p* tells us how certain we can be that any overall leaning in post-deliberation public opinion is "real." Again the lower the *p*, the more certain we can be.

The magnitude of change will generally be smaller when we only have the T2 data as an adequate baseline (when we are looking at T3 – T2 rather than T3 – T1, because we only have 40 responses at T1). On all these items, the magnitude of the observed change is probably an underestimate, because the T3 – T2 contrast misses the change that occurred from T1 to T2, over the interval between the initial interview and the beginning of the weekend. In this sense, the change results on these items are conservative.

The following sections present the results. A still more detailed account can be found in the table in Appendix E, which gives all the means (T1, T2, and T3) and differences of means (T3 – T1 and T3 – T2) for which we have data on all 146 participants. This restriction means that means we omit the T1 means and T3 – T1 differences for questions present only on the LF questionnaire at T1.

**Policy Attitudes**

These are the bottom-line results: the participant's opinions about what the state should do, and to what extent, in meeting its future electricity needs.

**How Much Electricity from Which Sources?** The participants were asked what percentage of Vermont's electricity they would like to see come from each of a list of possible

sources: wind, oil, natural gas, coal, nuclear, solar, hydro, wood, and methane. After deliberation, the participants averaged wanting to see 24% from hydro, 18% from wind, 14% each from solar and wood, 12% nuclear, 10% from methane, 8% from natural gas, and only trace quantities from oil and coal. Deliberation produced significant increases in the percentages for hydro and wood and a significant drop (from an already low level) in the percentages for oil and coal. See Figures 1-9.

Note that these are "normed" percentages (in Appendix F). The raw responses often summed to more (or occasionally less) than 100% across the nine sources. The "norming" divides the percentage each respondent assigns a given source by the sum of all the percentages he or she assigns, making each respondent's percentages sum, across the nine sources, to 100%. This adjustment does not affect the burden of the results, as can be seen by comparing Appendices E and F. The patterns of priorities and of changes are the same, whether one uses the normed or raw percentages. The levels of statistical significance are generally somewhat greater (the *p*'s generally somewhat smaller) with the normed percentages, but the only change crossing the conventional .05 threshold is the decline in the average percentage assigned to coal, which is statistically significant with the normed but not the raw percentages.

**Current Supply Contracts.** There was overwhelming (96%) support for Vermont's continuing to buy power from the Independent Power contracts, negotiated by the state with woodchip and hydro projects, and to a somewhat lesser degree (86%), for its continuing to buy power from Hydro-Quebec. Deliberation, in these cases, made already strong support still stronger. There was a very big increase in support for continuing to buy from Quebec Hydro, a smaller but still sizable one in support for continuing to buy from the Independent Power contracts. Both effects were highly significant. Opinions were evenly divided, on the other hand, on whether the state should continue to buy power from Vermont Yankee. A very slight

and statistically insignificant majority (50% to 48%, with 2% in the middle) favored continuing to do so. Here deliberation had no noticeable effect. See Figures 10-12.

**The Role of Efficiency.** The vast majority of the sample (84%), after deliberating, believed that believe funding for efficiency should be increased. Deliberation had no significant effect on this. Deliberation did, however, significantly increase support for increasing efficiency as much as possible versus buying or generating power. The participants leant that way before deliberating and leant still more that way after. See Figures 13-14.

**The Role of Renewables.** There was overwhelming support, increasing significantly, from a very high level before deliberation to a still higher level after, for requiring that the state obtain a certain minimum percentage of its electricity from renewable resources. On average, after deliberation, the participants thought this minimum should be 57.5%, a significant increase from what they thought it should be beforehand. Fully 98% of the sample wanted, post-deliberation, to see the proportion of Vermont's electricity obtained from renewables increased rather than decreased. This too represented a significant shift in the direction of renewables, compared with the pre-deliberation responses. See Figures 15-17.

**Paying for Renewables.** Lopsidedly, the participants believed, both before and after deliberating, that "the cost of additional renewable resources should be divided among all customers" versus asking "individual customers … how much electricity from renewable resources they would like to buy and … *only* acquir[ing] enough renewable energy to meet that demand even though all would benefit. Deliberation brought no significant change on this question. See Figure 18.

**Visible Wind Farms.** A large majority, neither swollen nor shrunken by deliberation, supported the building of a wind farm visible from where they live. See Figure 19.

**Generating Inside vs. Outside Vermont.** Post-deliberation, most (68%) participants want to see electricity used by Vermonters produced entirely (13%) or mostly (55%) in Vermont. Deliberation did produce a slight, nearly significant change in the direction of production outside the state. See Figure 20.

**Building vs. Buying.** A large majority of the participants (more than 70%) preferred that utilities build their own facilities, as opposed to buying electricity from other providers. This did not change with deliberation. See Figure 21.

**What Facilities to build in Vermont.** We asked participants how much they favored or opposed having facilities using each of six different resources (oil, natural gas, biomass like wood chips, oil, hydro power, and landfill or farm methane) built in Vermont. After deliberating, the participants strongly favored building facilities using wind, biomass, hydro, and farm methane, opposed building facilities using oil, and were closely divided on building facilities using natural gas. Deliberation brought significant increases in the already high levels of support for building facilities using wind, biomass, and farm methane and a significant decrease in the already low level of support for building facilities using oil. See Figures 22-27.

**Smaller vs. Larger Facilities.** Both before and after deliberation, a large majority of participants preferred having smaller facilities spread across the state to a few large centralized facilities. See Figure 28.

**Pricing.** A substantial majority, essentially unchanged by deliberation, believed that price of electricity should be related to the cost of generating it. At the same time, the participants were closely divided over the choice between bills that do not change much from year to year and bills geared to market prices. Deliberation did move them slightly but insignificantly in the direction of market pricing. See Figures 29-30.

**How Much More Would You Pay for …?** We asked the participants how much extra per month they would be willing to pay for each of several purposes. Setting aside a small number of extreme responses (of $100 or more), which we take as a measure of devotion to the purpose, rather than actual willingness to spend, they indicated, on average, after deliberation, that they would be willing to pay an extra $20 a month, if necessary, for electricity that came entirely from sources that produced no greenhouse gases, other pollutants, or nuclear wastes," an extra $10 a month, if necessary, to "get Hydro Quebec to provide power exclusively from their wind resources," an extra $12 a month, if necessary, to "ensure that all [their] electricity was generated by in-state resources," and an extra $12 a month, if necessary, to "ensure that all their electricity was generated by smaller, decentralized plants." Appendix E shows the mean responses with and without the unrealistic responses of $100 or more. Deliberation reduced the unrealistic responses of $100 but did not otherwise alter the mean amounts. See Figures 31-34.

**Empirical Premises**

These are debatable propositions about states of the world (e.g., that the weather of the past few decades has been part of a lasting climate change) or causal connections (e.g., that climate change is a result of human activity). They resemble factual questions in being empirical but are more debatable. The responses to these questions help shed light on the responses to the policy attitude questions.

**Replacing power from existing contracts.** A slender majority (55%) *dis*agreed, after deliberation, that power not purchased from Hydro-Quebec would have to be replaced by natural gas, coal, out of state nuclear, or oil, and somewhat bigger majority (64%) *dis*agreed that power not purchased from Vermont Yankee would have to be replaced by natural gas, coal, out of state nuclear, or oil. In both cases, deliberation significantly increased disagreement with these premises. See Figures 35-36.

**Savings from Efficiency.** On average the participants thought, after deliberation, that increased efficiency in Vermonters' use of electricity could reduce the state's need for electricity by 22% over the next 10 years. This represented a significant decline, however, from the 31% reduction they thought could be achieved before they deliberated. See Figure 37.

**Environmental Friendliness vs. Unfriendliness.** We asked the participants to rate the environmental friendliness versus unfriendliness of wind, oil, natural gas, coal, nuclear, solar, hydro, wood, methane from farms or landfill, and energy efficiency. After deliberation, the rated wind, solar, and efficiency as extremely friendly to the environment; methane, hydro, and wood, in that order, as nearly as friendly; nuclear and natural gas as somewhat unfriendly; and coal and oil, in that order, as extremely unfriendly. Wood and methane were seen as significantly friendlier, and oil, coal, and natural gas as significantly unfriendlier, after deliberation than before. These effects were large for coal and oil in the one direction and for wood and methane in the other. See Figures 38-47.

**The Cost of Cleaner Energy.** A very large majority of the participants thought, even before deliberating, that "cleaner energy will cost more in the *short* run," and a still larger majority did so after deliberating. On the other hand cleaner, only an essentially unchanged minority thought, either before or after deliberating, that "cleaner energy will cost more in the *long* run." See Figures 48-49.

**How Much to Expect from Given Sources.** We asked "what percentage of the electricity consumed by Vermonters … *could p*ossibly be *provided* by" wind, oil, natural gas, coal, nuclear, solar, hydro, wood, methane from farms or landfill by 2017? (This paralleled the question about the percentage the participant would *like* to see come from each of these source.) After deliberation, the estimates averaged 36% for hydro, 26% for nuclear, 24% for wind at 24%, 20% for natural gas, 18% for wood, 15% for solar, 12% each for oil and coal, and

10% for methane. Deliberation significantly increased the average estimate for hydro and significantly decreased the average estimate for solar. See Figures 50-58.

**Climate Change.** After deliberating, large majorities thought that the weather of the past few decades was "part of a lasting climate change" rather than "just an example of normal variation over time" and that "human activity is responsible for any climate change that may be occurring" rather than that "any climate change that may be occurring is due to natural causes." Deliberation had no great effect on the belief that recent weather is part of lasting climate change but significantly increased the belief that human activity is responsible. See Figures 59-60.

**Threats to Vermont's Scenic Beauty.** The participants, after deliberating, saw a major threat to Vermont's scenic beauty in a coal-fired power plant, some considerable threat in a natural gas power plant, some moderate threat in transmission lines, and not much threat in a utility scale wind farm or (especially) a residential scale wind farm. Deliberation accentuated the perception of the scenic threat from coal. See Figures 61-65.

**Values**

These are the goals that energy policies might serve, for example the stability of the electricity supply, the price of electricity, the minimization of greenhouse gases, the preservation of Vermont's scenic beauty, etc. Different people value these goals differently. We do not generally expect these values to change much as a result of deliberation (not at any rate over the course of a mere weekend), but, like and in combination with empirical premises, they can help shed light on the participants' policy attitudes.

**Goals.** We asked the participants to say how important or unimportant they considered eleven goals in meeting Vermont's future energy needs. The list consisted of: "Keeping electricity rates low for consumers," "Keeping electric rates stable for consumers," "Reducing

dependence on foreign energy sources," "Minimizing air pollution," "using power produced in Vermont," "Avoiding facilities that detract from the scenic beauty of Vermont," "Reducing the emission of gases that may contribute to climate change," "Ensuring a reliable supply of electricity," "Reducing radioactive wastes," "Creating jobs in Vermont," and "Getting electricity from resources that will never be used up." All these goals, after deliberation, were rated as at least moderately important, though some distinctly more important than others. The highest rated (in declining order) were "minimizing air pollution," "getting electricity from resources that will never be used up," "reducing the emission of gases that may contribute to climate change," and "ensuring a reliable supply of electricity." The least highly rated were "keeping electric rates stable for consumers" and—a distant last—"avoiding facilities that detract from the scenic beauty of Vermont." Deliberation significantly increased the average importance attached to "getting electricity from resources that will never be used up" and "minimizing air pollution." See Figures 66-76.

**Concerns.** The participants were asked how concerned or unconcerned they were about "radioactive waste from nuclear power plants, "greenhouse gases produced by burning fuel to make electricity," "other air pollution produced by burning fuel to make electricity," "damage to river habitats from building hydro power facilities," and "the visual impact of wind farms on the scenery of Vermont." The average levels of concern were high to very high for all these items except for the visual impact of wind farms. The items eliciting the greatest concern were greenhouse gases and other air pollution. Deliberation did not greatly alter these concerns, but again it would not be expected to. See Figures 77-81.

**Taking Account of Indirect Costs.** Both before and after deliberating, the participants that "in choosing a source for electricity" not only the direct costs, "like those of building and operating the power generation facility and the power lines," but also the indirect costs, "like

those associated with pollution, greenhouse gas emissions, or nuclear wastes," should be considered. See Figure 82.

**Factual Knowledge**

The participants clearly learned a lot, which is important as evidence that the deliberative process was doing what is was supposed to do and corroboration that the post-deliberation opinions were indeed more considered.

We asked a series of eight factual knowledge items (setting aside one flawed item about the impact of VTs efficiency program). These asked about the surcharge on Vermont electric bills "for programs to reduce the need for electricity," the percentage of its electricity Vermont currently gets from renewable resources, the percentage of its electricity Vermont currently gets from the Vermont Yankee nuclear plant, the percentage of its electricity Vermont currently gets from Hydro Quebec, the percentage of Vermont's electricity that is currently generated within Vermont, how Vermont's electricity rates compare with the rest of New England's, the average electric bill for the typical Vermonter, and when Vermont's contract with the Vermont Yankee nuclear power plant expires. Every one of these eight items showed statistically significant knowledge gains. After deliberating, the participants answered gave the right answers at rates significantly above what would be expected from random guessing, the meaning of the T3 *p*'s in this connection.

The pre- to post-deliberation gains, moreover, were huge (as well as hugely significant): On average the participants answered 39.5% more of the questions correctly after deliberating than before, the equivalent of improving from a rock bottom F (50%) to the highest possible B+ (89.5%) on a school exam. See Figures 83-90.

**Interest in the Issues**

Even before deliberating, the participants indicated that they cared quite a lot about how Vermont's electricity is produced; after deliberating, they cared still more. See Figure 91.

**Experience of the Process**

One side benefit of Deliberative Polling is that it engages and enthuses the participants. They emerge eager to tackle the issues they have been discussing back home—and grateful to the sponsoring agency for having organized the event. The Vermont Deliberative Poll was no exception. The participants were asked to rate the value of the event in helping them clarify their positions on the issues. On a scale of 0 to 10, the average rating was 9.16. Fully 68% gave the event a perfect 10, and 90% gave it at least an 8. A parallel question about the value of the small group discussions produced almost identical responses. The average was 9.08, 66% gave a perfect 10, and 87% gave at least an 8. A third parallel question, about talking outside the formal discussions, produced somewhat less, but still enthusiastic responses. There the average was "only" 7.99, with "only" 42% giving a perfect 10, and "only" 64% giving at least an 8. See Figures 92-94.

The participants also felt the process was fair and worked well: 83% agreed (59% strongly) that their "small group moderator provided the opportunity for everyone to participate in the discussion"; 71% agreed (33% strongly) that that the members of their small group did in fact participate "relatively equally in the discussions"; 83% agreed (59% strongly) that "the important aspects of the issues were covered in the small group discussions"; 76% agreed (43% strongly) that "the briefing document presented competing arguments fairly"; 78% agreed (58% strongly) that their small group moderator tried to make sure that opposing arguments were considered"; and 91% *dis*agreed (86% strongly) that their small group moderator "sometimes tried to influence the group with his or her own views." See Figures 95-100.

The participants appear to have taken the process very seriously. 58% had read more than half of the briefing document (26% all or nearly all) before arriving, and 72% had read at least some of it. These numbers would doubtless have been still higher, were it not that delays caused by the switching of survey houses caused many participants to receive the briefing document only a few days before the event, and some not to receive it before the event at all.

By the end of the event, 92% had read more than half of it (66% all or nearly all), and 99% had read at least some of it. See Figures 101-102.

The heterogeneity of discussion partners and points of view in the small groups plays an important role in enriching and sometimes changing the participants' opinions. Thus one last question about the process asked how strongly the participant agreed or disagreed with the statement that "I learned a lot about people very different from me—about what they and their lives are like." 67% agreed (36% strongly); only 12% disagreed. See Figure 103.

# Appendix A

## Schedule of the Weekend

Saturday, November 3rd

| | | |
|---|---|---|
| Registration and light breakfast | | 8:00 – 9:00 |
| Opening Session: Vermont Needs to Make Some Decisions about its Energy Future. | 30 min | 9:00 – 9:30 |
| *Locate your small group* | 15 min | 9:30 – 9:45 |
| Arrival Questionnaire | 30 min | 9:45 – 10:15 |
| Small Group #1: Natural Gas, Coal, Nuclear, and Oil | 1 hr 15 min | 10:15 – 11:30 |
| *Break for refreshments & move to the auditorium* | 20 min | 11:30 – 11:50 |
| Large Group #1: Natural Gas, Coal, Nuclear, and Oil | 1 hr | 11:50 – 12:50 |
| *Move to the lunch room* | 10 min | 12:50 – 1:00 |
| Lunch (sandwich buffet) | 1 hr | 1:00 – 2:00 |
| *Move to small group* | 5 min | 2:00 – 2:05 |
| Small Group #2: Biomass, Hydro, Wind, Solar, and CHP | 1 hr | 2:05 – 3:05 |
| *Move to auditorium* | 15 min | 3:05 – 3:20 |
| Large Group #2: Biomass, Hydro, Wind, Solar, and CHP | 1 hr | 3:20 – 4:20 |
| *Break for refreshments & move to small group* | 25 min | 4:20 – 4:45 |
| Small Group #3: Efficiency, Demand Reduction, and Dynamic Pricing | 1 hr | 4:45 – 5:45 |
| *Move to auditorium* | 15 min | 5:45 – 6:00 |
| Large Group #3: Efficiency, Demand Reduction, and Dynamic Pricing | 1 hr | 6:00 – 7:00 |
| Dinner | | 7:00 – 8:00 |

Schedule – Sunday, November 4th

| | | |
|---|---|---|
| Light Breakfast | 50 min | 8:00 – 8:50 |
| Small Group #4: Issues that Cut Across all the Options | 1 hr | 8:50 – 9:50 |
| *Move to auditorium* | 15 min | 9:50 – 10:05 |
| Large Group #4: Issues that Cut Across all the Options | 1 hr | 10:05 – 11:05 |
| *Pick up box lunches move to small groups* | 25 min | 11:05 – 11:30 |
| Lunch in small groups | 20 min | 11:30 – 11:50 |
| Small Group #5: Putting it all Together and Making Recommendations | 1 hr | 11:50 – 12:50 |
| *Move to auditorium* | 15 min | 12:50 – 1:05 |
| Large Group #5: Putting it all Together and Making Recommendations (panel of decision makers and public officials) | 1 hr | 1:05 – 2:05 |
| Closing Comments | 15 min | 2:05 – 2:20 |
| *Break for refreshments and move to small group* | 25 min | 2:20 – 2:45 |
| Summary Discussion | 30 min | 2:45 – 3:15 |
| Survey (taken in Small Group room) | Individual pace, usually around 30 min | 3:15 – 3:45 |
| *Turn in survey and receive Honorarium* | Individual pace | 3:45 – 4:15 |

## Appendix B

## Plenary Panels

Panel 1: Natural Gas, Coal, Nuclear, and Oil

Richard Sedano
Eileen Simolardes, VT Gas
David McElwee, Vermont Yankee
Dave Lamont, DPS
Bob Griffin, Green Mountain Power
James Moore, VPIRG
Kevin Dorn, Secretary of Commerce

Panel 2: Biomass, Hydro, Wind, Solar, and Combined Heat and Power

David Dunn, CVPS
John Irving, BED
John Zimmerman
Andy Perchlik, Go Solar
Sylvie Racine, Hydro Quebec
Jeff Wallin, Vermont Energy Partnership
Dave Lamont, DPS
Patty Richards, VPPSA
Kevin Dorn, Secretary of Commerce

Panel 3: Energy Efficiency Demand Reduction

Pat Haller, EVT
Ted Wimpy, CVOEO
Riley Allen, DPS
Steve Costello, CVPS
Sean Foley, DPS
Andy Leach, Leach Construction
Kevin Dorn, Secretary of Commerce

Panel 4: Crosscutting issues

Dean LaForrest, VELCO
Bob Griffin, GMP
Sylvie Racine, Hydro Quebec
Bruce Bentley, CVPS
James Moore, VPIRG
Kevin Dorn, Secretary of Commerce
David McElwee, Vermont Yankee

Panel 5: Bringing it all together

Commissioner David O'Brien
Representative Robert Dostis
Reilly Allen, DPS
Chris Dutton, GMP
Barb Grimes, BED
Avram Patt, Washington Electric Coop
Environmental – James Moore, VPIRG

**PARTICIPANT NUMBER** _____

## Appendix C

**GROUP NUMBER** _____

# "Vermont's Energy Future"
# Final Survey

**We'd like get your views on these issues one last time. We'd just like to know what you think about them now, after this weekend of discussion. If you come to a question you don't have much opinion about, just say so and move on to the next one.**

1. On a 0 to 10 scale, where 0 is "not at all", 10 is "a great deal," and 5 is exactly in the middle, how much would you say you care about how the electricity you use is produced?

**Please circle the appropriate number**

| Not at all | | | | | Exactly in the middle | | | | | A great deal |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

2. Some people think Vermont should meet as much of its electricity needs as possible by increasing the efficiency with which Vermont consumers use electricity. Suppose these people are at one end of a 1-to-7 scale, at point 1. Other people think Vermont should meet its electricity needs entirely by generating or buying more electricity. Suppose these people are at the other end of the scale, at point 7. People who are exactly in-between are at point 4, and of course other people have opinions at other points between 1 and 7. Where would you place yourself on this scale, or wouldn't you have any opinion about that?

**Please circle the appropriate number**

| As much as possible by increasing efficiency | | | Exactly in-between | | | Entirely by generating or buying more electricity | | No opinion |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 99 |

3. And what percentage of the electricity Vermont consumes would you *like* to see come from each of the following generation related sources over the next 10 years?

**Please enter numbers between 0 and 100**

| | Percentage |
|---|---|
| a. Wind | |
| b. Oil | |
| c. Natural gas | |
| d. Coal | |
| e. Nuclear | |
| f. Solar | |

| | |
|---|---|
| g. Hydro | |
| | |
| h. Wood | |
| | |
| i. Methane from farms or landfill | |

4. Now think about people who would answer that last question very differently—who would enter very different percentages from you just did. How strongly would you agree or disagree that even if they are wrong they often have good reason for their views.

**Please circle the appropriate number**

| Agree strongly | Agree somewhat | Neither agree nor disagree | Disagree somewhat | Disagree strongly | | No opinion |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | | 99 |

5. Some people think Vermont's electric utilities should meet the state's future energy needs by contracting to buy electricity from other providers. Suppose these people are at one end of a 1-to-7 scale, at point 1. Other people think Vermont's electric utilities should meet the state's future electricity needs by building their own facilities. Suppose these people are at the other end of the scale, at point 7. Again people who are exactly in-between are at point 4, and again of course other people have opinions at other points between 1 and 7. Where would you place yourself on this scale, or wouldn't you have any opinion about that?

**Please circle the appropriate number**

| Buy from other providers | | | Exactly in-between | | | Build own facilities | | No opinion |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 99 |

6. Next we'd like know how strongly you agree or disagree with each of the following statements.

**Please circle the appropriate number**

| | Agree strongly | Agree somewhat | Neither agree nor disagree | Disagree somewhat | Disagree strongly | | No opinion |
|---|---|---|---|---|---|---|---|
| a. Vermont should continue to purchase electricity from Hydro Quebec. | 1 | 2 | 3 | 4 | 5 | | 99 |
| | | | | | | | |
| b. Vermont should continue to purchase electricity from the Vermont Yankee nuclear power plant. | 1 | 2 | 3 | 4 | 5 | | 99 |
| | | | | | | | |
| c. Vermont should continue to purchase electricity from the Vermont based independent Power Producers, producing electricity from hydro and wood chips. | 1 | 2 | 3 | 4 | 5 | | 99 |
| | | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| d. The price Vermonters pay for electricity should be higher when the cost of generating it is higher and lower when the cost of generating it is lower. | 1 | 2 | 3 | 4 | 5 | 99 |
| e. Vermont should require that a minimum percentage of the electricity sold to Vermonters come from renewable sources. | 1 | 2 | 3 | 4 | 5 | 99 |

7. If Vermont *were* to require that a minimum percentage of the electricity sold to Vermonters come from renewable sources, what percentage should that be? **(Please enter a number between 0 and 100.)**

_____%

8. And would you like to see the electricity used by Vermonters produced …?

**Please circle the appropriate number**

| | |
|---|---|
| Entirely inside Vermont | 1 |
| Mostly inside Vermont | 2 |
| About half and half, inside and outside Vermont | 3 |
| Mostly outside Vermont | 4 |
| Entirely outside Vermont | 5 |
| No opinion | 99 |

9. Here are some questions about the locations of electric generation facilities that could conceivably be built in Vermont. On a scale of 0 to 10, where 0 is "strongly opposed," 10 is "strongly in favor," and 5 is exactly in the middle, how would you say you feel about having each of these types of facilities built in Vermont?

**Please circle the appropriate number**

| | Strongly opposed | | | | | Exactly in the middle | | | | | Strongly in favor | | No opinion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Facilities that produce electricity … | | | | | | | | | | | | | |
| a. Using wind | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| b. Using natural gas | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| c. Using biomass, like woodchips | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| d. From hydropower | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| e. From oil | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| | | | | | | | | | | | | | |
| f. From landfill or farm methane | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |

10. Some people would like to have electric bills that don't change too much from year to year, even if their electricity may wind up costing quite a bit more than the market price. Suppose these people are at one end of a 1-to-7 scale, at point 1. Other people would like to get their electricity at the market price, even if their bills may go up and down by quite a bit from year to year. Suppose these people are at the other end of the scale, at point 7. People who are exactly in-between are at point 4. Where would you place yourself on this scale, or wouldn't you have any opinion about that?

**Please circle the appropriate number**

| Bills that don't change too much from year to year | | | Exactly in-between | | | Getting electricity at he market price | | No opinion |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 99 |

11. Some people think that Vermont's electricity should be produced by a few large, centralized plants. Suppose these people are at one end of a 1-to-7 scale, at point 1. Other people think that it should be produced by smaller facilities, spread across the state. Suppose these people are at the other end of the scale, at point 7. Where would you place yourself on this scale, or wouldn't you have any opinion about that?

**Please circle the appropriate number**

| A few large, centralized plants | | | Exactly in-between | | | Smaller facilities, spread across the state | | No opinion |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 99 |

12. How strongly would you support or oppose a wind farm being built if it were visible from where you live, or wouldn't you have any opinion about that?

**Please circle the appropriate number**

| | |
|---|---|
| Support it strongly | 1 |
| | |
| Support it somewhat | 2 |
| | |
| Neither support nor oppose it | 3 |
| | |
| Oppose it somewhat | 4 |
| | |
| Oppose it strongly | 5 |
| | |
| No opinion | 9 |

13. Over the next ten years would you like to see Vermont increase the funding for its energy efficiency program, decrease it, or keep it about the same level, or wouldn't you have any opinion about that?

**Please circle the appropriate number**

| | |
|---|---|
| Increase it | 1 |
| Keep it about the same | 2 |
| Decrease it | 3 |
| No opinion | 9 |

14. And over the next ten years would you like to see Vermont increase the percentage of electricity it uses that comes from renewable resources, decrease the percentage or keep it at about the same level?

**Please circle the appropriate number**

| | |
|---|---|
| Increase it | 1 |
| Keep it about the same | 2 |
| Decrease it | 3 |
| No opinion | 9 |

15. How many dollars more per month would you be willing to pay, if necessary, for electricity that came entirely from sources that produced no greenhouse gases, other pollutants, or nuclear wastes? **(Enter a number of dollars; if you wouldn't be willing to pay any more for this, just enter 0.)**

$ _____

16. How many dollars more per month would you be willing to pay, if necessary, to get Hydro Quebec to provide power exclusively from their wind resources? **(Enter a number of dollars; if you wouldn't be willing to pay any more for this, just enter 0.)**

$ _____

17. How many dollars more per month would you be willing to pay, if necessary, to ensure that all your electricity was generated by in-state resources? **(Enter a number of dollars; if you wouldn't be willing to pay any more for this, just enter 0.)**

$ _____

18. How many dollars extra in your monthly utility bill would you be willing to pay, if necessary, to ensure that all your electricity was generated by smaller, decentralized plants? **(Enter a number of dollars; if you wouldn't be willing to pay any more for this, just enter 0.)**

$ _____

19. Now a question about *how* Vermont should invest in additional renewable resources, to the extent that it decides to do that. Some people think that the cost of additional renewable resources should be divided among all customers. Suppose these people are at one end of a 1-to-7 scale, at point 1. Other people think individual customers should be asked how much electricity from renewable resources they would like to buy and that Vermont should *only* acquire enough renewable energy to meet that demand even though all would benefit. Suppose these people are at the other end of the scale, at point 7. Where would you place yourself on this scale, or wouldn't you have any opinion about that?

**Please circle the appropriate number**

| Divide costs among all customers | | | Exactly in-between | | | Only acquire enough renewable energy to meet the demand customers express | | No opinion |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 99 |

20. On a scale of a scale of 0 to 10, where 0 is extremely *un*friendly to the environment, 10 is extremely friendly to it, and 5 is exactly in the middle, how environmentally friendly or unfriendly would you say each of the following sources is?

**Please circle the appropriate number**

| | Extremely unfriendly | | | | | Exactly in the middle | | | | | Extremely friendly | | No opinion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a. Wind | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| b. Oil | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| c. Natural gas | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| d. Coal | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| e. Nuclear | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| f. Solar | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| g. Hydro | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| h. Wood | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| i. Methane from farms or landfill | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| j. Energy efficiency | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |

21. On another scale of 0 to 10, where 0 is extremely *un*concerned, 10 is extremely concerned, and 5 is exactly in the middle, how concerned do you are you about each of the following?

**Please circle the appropriate number**

| | Extremely unconcerned | | | | | Exactly in the middle | | | | | Extremely concerned | | No opinion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a. Radioactive waste from nuclear power plants | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| b. Greenhouse gases produced by burning fuel to make electricity | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| c. Other air pollution produced by burning fuel to make electricity | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| d. Damage to river habitats from building hydro power facilities | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| e. The visual impact of wind farms on the scenery of Vermont | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |

22. And on another scale of 0 to 10, where 0 is no threat at all, 10 is an extremely serious threat, and 5 is exactly in the middle, how much of a threat to Vermont's scenic beauty would you say is posed by locating each of the following electricity sources in Vermont?

**Please circle the appropriate number**

| | Extremely unconcerned | | | | | Exactly in the middle | | | | | Extremely concerned | | No opinion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a. A coal-fired electric generating plant | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| b. A natural gas-fired electric generating plant | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| c. A utility scale wind farm | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| d. A residential scale wind farm | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| e. Electricity transmission lines | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |

23. By about what percentage do you believe Vermont's need for electricity *could* be *reduced* by increasing the efficiency with which Vermont consumers use electricity by 2017? **(Please enter a number between 0 and 100.)**

_____%

24. About what percentage of the electricity consumed by Vermonters would you say *could p*ossibly be *provided* by each of the following by 2017?

**Please enter numbers between 0 and 100**

| | Percentage |
|---|---|
| a. Wind | |
| b. Oil | |
| c. Natural gas | |
| d. Coal | |
| e. Nuclear | |
| f. Solar | |
| g. Hydro | |
| h. Wood | |
| i. Methane from farms or landfill | |

25. How strongly would agree or disagree with each of the following statements.

**Please circle the appropriate number**

| | Agree strongly | Agree somewhat | Neither agree nor disagree | Disagree somewhat | Disagree strongly | | No opinion |
|---|---|---|---|---|---|---|---|
| a. Cleaner energy will cost more in the *short* run. | 1 | 2 | 3 | 4 | 5 | | 99 |
| b. Cleaner energy will cost more in the *long* run. | 1 | 2 | 3 | 4 | 5 | | 99 |
| c. Power not purchased from Hydro Quebec would have to be replaced by natural gas, coal, out of state nuclear power, or oil. | 1 | 2 | 3 | 4 | 5 | | 99 |
| d. Power not purchased from Vermont Yankee would have to be replaced by natural gas, coal, out of state nuclear power, or oil. | 1 | 2 | 3 | 4 | 5 | | 99 |

26. Some people think the weather of the past few decades is just an example of normal variation over time. Suppose these people are at one end of a 1-to-7 scale, at point 1. Other people think the weather of the past decade is part of a lasting climate change. Suppose these people are at the other end of the scale, at point 7. People who are exactly in-between are at point 4. Where would you place yourself on this scale? Or wouldn't you have any opinion about that?

**Please circle the appropriate number**

| Normal variation over time | | | Exactly in-between | | | Lasting climate change | | No opinion |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 99 |

27. Some people think that human activity is responsible for any climate change that may be occurring. Suppose these people are at one end of a 1-to-7 scale, at point 1. Other people think that any climate change that may be occurring is due to natural causes. Suppose these people are at the other end of the scale, at point 7. People who are exactly in-between are at point 4. Where would you place yourself on this scale? Or wouldn't you have any opinion about that?

.

**Please circle the appropriate number**

| Human activity responsible | | | Exactly in-between | | | Due to natural causes | | No opinion |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 99 |

28. Some people think that in choosing a source for electricity only the direct costs, like those of building and operating the power generation facility and the power lines, should be considered. Suppose these people are at one end of a 1-to-7 scale, at point 1. Other people think that indirect costs, like those associated with pollution, greenhouse gas emissions, or nuclear wastes, should also be considered. Suppose these people are at the other end of the scale, at point 7. People who are exactly in-between are at point 4, and of course other people have opinions at other points between 1 and 7. Where would you place your views on this scale?

**Please circle the appropriate number**

| Consider only direct costs | | | Exactly in-between | | | Consider indirect costs as well | | No opinion |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 99 |

29. Thinking about the ways in which Vermont might meet its future electricity needs, please tell me how important each of the following goals is to you using a scale of 0 to 10, with 0 being not at all important and 10 being extremely important.

**Please circle the appropriate number**

| | Not at all important | | | | | Exactly in the middle | | | | | Extremely important | | No opinion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a. Keeping electricity rates low for consumers | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| b. Keeping electric rates stable for consumers | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| c. Reducing dependence on foreign energy sources | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| d. Minimizing air pollution | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| e. Using power produced in Vermont | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| f. Avoiding facilities | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| that detract from the scenic beauty of Vermont | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| g. Reducing the emission of gases that may contribute to climate change | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| | | | | | | | | | | | | | |
| h. Ensuring a reliable supply of electricity | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| | | | | | | | | | | | | | |
| i. Reducing radioactive wastes | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| | | | | | | | | | | | | | |
| j. Creating jobs in Vermont | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| | | | | | | | | | | | | | |
| k. Getting electricity from resources that will never be used up | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |

Now we come to some questions to which not everyone may know the right answers. If you come to one to which you don't know the answer, just circle the number for "Couldn't say," and move on to the next one.

30. Is the surcharge Vermonters pay on their electric bills for programs to reduce the need for electricity currently …?

**Please circle the appropriate number**

| | |
|---|---|
| Zero—there is no surcharge | 1 |
| | |
| About half a cent per kilowatt hour | 2 |
| | |
| About two cents per kilowatt hour | 3 |
| | |
| About five cents per kilowatt hour | 4 |
| | |
| About seven-and-a-half cents per kilowatt hour | 5 |
| | |
| Couldn't say | 99 |

31. What effect has Vermont's energy efficiency program had on the annual increase in the amount of electricity used by Vermonter's? Has it

**Please circle the appropriate number**

| | |
|---|---|
| Had almost no impact on the increase | 1 |
| | |
| Reduced it by 20% | 2 |
| | |
| Reduced it by 50% | 3 |
| | |
| Reduced it by 70% | 4 |
| | |
| Reduced it by 90% | 5 |
| | |
| Couldn't say | 99 |

32. Excluding Hydro Quebec, about what percentage of its electricity does Vermont currently get from renewable resources?

**Please circle the appropriate number**

| | |
|---|---|
| 5% | 1 |
| | |
| 15% | 2 |
| | |
| 25% | 3 |
| | |
| 40% | 4 |
| | |
| Couldn't say | 99 |

33. And about what percentage of its electricity Does Vermont currently get from the Vermont Yankee nuclear plant?

**Please circle the appropriate number**

| | |
|---|---|
| 5% | 1 |
| | |
| 10% | 2 |
| | |
| 20% | 3 |
| | |
| 33% | 4 |
| | |
| Couldn't say | 99 |

34. About what percentage of its electricity does Vermont currently get from Hydro Quebec?

**Please circle the appropriate number**

| | |
|---|---|
| 15% | 1 |
| | |
| 33% | 2 |
| | |
| 45% | 3 |
| | |
| 60% | 4 |
| | |
| Couldn't say | 99 |

35. Roughly what percentage of Vermont's electricity is currently generated within Vermont?

**Please circle the appropriate number**

| | |
|---|---|
| 12% | 1 |
| | |
| 33% | 2 |
| | |
| 55% | 3 |
| | |
| 72% | 4 |
| | |
| Couldn't say | 99 |

36. How do Vermont's electricity rates compare with those of the rest of New England? Are they, on average, …

**Please circle the appropriate number**

| | |
|---|---|
| Roughly 20%% higher | 1 |
| | |
| Roughly 10%% higher | 2 |
| | |
| About the same | 3 |
| | |
| Roughly 10%% lower | 4 |
| | |
| Roughly 20%% lower | 5 |
| | |
| Couldn't say | 99 |

37. What is the average electric bill for the typical Vermonter? Is it …

**Please circle the appropriate number**

| | |
|---|---|
| Roughly $60 | 1 |
| | |
| Roughly $80 | 2 |
| | |
| Roughly $120 | 3 |
| | |
| Roughly $180 | 4 |
| | |
| Couldn't say | 99 |

38. Does Vermont's contract with the Vermont Yankee nuclear power plant expire in …

**Please circle the appropriate number**

| | |
|---|---|
| 2010 | 1 |
| | |
| 2012 | 2 |
| | |
| 2018 | 3 |
| | |
| 2025 | 4 |
| | |
| Couldn't say | 99 |

**Now a few questions about this weekend:**

39. On a scale of 0 to 10, where 0 is "a waste of time", 10 is "extremely valuable," and 5 is exactly in the middle, how valuable was each of the following in helping you clarify your positions on the issues?

**Please circle the appropriate number**

| | A waste of time | | | | | Exactly in the middle | | | | | Extremely valuable | | No opinion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a. Participating in the small group discussions | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| b. Meeting and talking to other participants outside of the formal discussions | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| c. The event as a whole | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |

40. And how strongly would you agree or disagree with each of the following statements?

**Please circle the appropriate number**

| | Agree strongly | Agree somewhat | Neither agree nor disagree | Disagree somewhat | Disagree strongly | No opinion |
|---|---|---|---|---|---|---|
| a. My small group moderator provided the opportunity for everyone to participate in the discussion | 1 | 2 | 3 | 4 | 5 | 99 |
| b. The members of my small group participated relatively equally in the discussions | 1 | 2 | 3 | 4 | 5 | 99 |
| c. My small group moderator sometimes tried to influence the group with this or her own views | 1 | 2 | 3 | 4 | 5 | 99 |
| d. My small group moderator tried to make sure that opposing arguments were considered | 1 | 2 | 3 | 4 | 5 | 99 |
| e. The important aspects of the issues were covered in the group discussions | 1 | 2 | 3 | 4 | 5 | 99 |

| | | | | | | |
|---|---|---|---|---|---|---|
| f. I learned a lot about people very different from me—about what they and their lives are like | 1 | 2 | 3 | 4 | 5 | 99 |
| | | | | | | |
| g. The briefing document presented competing arguments fairly | 1 | 2 | 3 | 4 | 5 | 99 |

41. **Before the deliberation started**, how much of the briefing material you were sent would you say you had read?

**Please circle the appropriate number**

| | |
|---|---|
| Hadn't read or had just glanced at it | 1 |
| | |
| Had read less than half of it | 2 |
| | |
| Had read about half of it | 3 |
| | |
| Had read more than half of it | 4 |
| | |
| Had read all or nearly all of it | 5 |

42. **And by the end of the deliberations**, how much of the briefing material you were sent would you say you had read?

**Please circle the appropriate number**

| | |
|---|---|
| Hadn't read or had just glanced at it | 1 |
| | |
| Had read less than half of it | 2 |
| | |
| Had read about half of it | 3 |
| | |
| Had read more than half of it | 4 |
| | |
| Had read all or nearly all of it | 5 |

43. On a scale from 0 to 10, where 0 is not at all important, 10 is extremely important, and 5 is exactly in the middle, how important was each of the following in your decision to attend this event …?

**Please circle the appropriate number**

| | Not Important at all | | | | | Exactly in the middle | | | | | Extremely Important | | No opinion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| The prospect of discussing an interesting topic | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| | | | | | | | | | | | | | |
| Getting to meet people from across the state | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| | | | | | | | | | | | | | |
| The possibility of being | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mentioned in the newspaper | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| The possibility of being seen on TV | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| | | | | | | | | | | | | | |
| Getting to question policy experts and policy makers | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| | | | | | | | | | | | | | |
| The honorarium of $150 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| | | | | | | | | | | | | | |
| A paid-for weekend in a nice hotel | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| | | | | | | | | | | | | | |
| A paid-for weekend in Burlington | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| | | | | | | | | | | | | | |
| The chance of making your voice heard | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |
| | | | | | | | | | | | | | |
| The chance of affecting energy policy | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 99 |

Finally, a few more questions about you:

44. Which of the following broad income categories best describes your total household income before taxes in 2006? Would it be …

**Please circle the appropriate number**

| | |
|---|---|
| Less than $25,000 | 1 |
| | |
| Between $25,000 and $50,000 | 2 |
| | |
| Between $50,000 and $75,000 | 3 |
| | |
| Between $75,000 and $100,000 | 4 |
| | |
| Between $100,000 and $125,000 | 5 |
| | |
| Between $125,000 and $150,000 | 6 |
| | |
| More than $150,000 | 7 |
| | |
| Rather not say | 99 |

45. In politics, people often talk about “liberal” and “conservative.” On a scale from 1 to 7, where 1 is extremely liberal, 7 is extremely conservative, and 4 is exactly in the middle, how liberal or conservative would you say you are, or wouldn’t you have any opinion about that?

**Please circle the appropriate number**

| Extremely liberal | | | Exactly in the middle | | | Extremely conservative | | No opinion |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 99 |

46. And generally speaking, would say that you usually think of yourself as a Democrat, a Republican, an independent, or what?

**Please circle the appropriate number**

| | |
|---|---|
| Democrat | 1 |
| Republican | 2 |
| Independent | 3 |
| Other (specify) _____ | 4 |
| None of the above | 9 |

**That’s all! Thank your for your participation! We hope you’ve had a great time talking with one another and thinking through your views on these issues. You will receive your check when you hand in this completed survey. Have a safe trip home! Again many thanks!**

# Appendix D
# Participants versus Nonparticipants

| Q# | Question | P | NP | P - NP | *p* | $\chi^2$ |
|---|---|---|---|---|---|---|
| q1 | How much do you care about how electricity is produced | 0.822 | 0.756 | 0.066 | 0.000 | |
| q2 | Increasing efficiency vs buying/generating power | 0.315 | 0.394 | -0.079 | 0.005 | |
| q12 | Continue to buy electricity from Hydro Quebec | 0.638 | 0.643 | -0.004 | 0.894 | |
| q13 | Continue to buy electricity from VT Yankee nuclear | 0.549 | 0.588 | -0.038 | 0.283 | |
| q14 | Continue to buy electricity from independent producers | 0.855 | 0.862 | -0.007 | 0.731 | |
| q25 | Support or oppose visible wind farm | 0.879 | 0.801 | 0.079 | 0.001 | |
| q26 | Increase or decrease funding for efficiency program | 0.902 | 0.843 | 0.059 | 0.006 | |
| q28 | How many dollars per month for no greenhouse gases | 40.12 | 27.53 | 12.59 | 0.091 | |
| q30 | How environmentally friendly is wind | 0.895 | 0.878 | 0.018 | 0.273 | |
| q31 | How environmentally friendly is oil | 0.237 | 0.261 | -0.025 | 0.166 | |
| q32 | How environmentally friendly is natural gas | 0.431 | 0.441 | -0.010 | 0.655 | |
| q33 | How environmentally friendly is coal | 0.165 | 0.193 | -0.028 | 0.107 | |
| q34 | How environmentally friendly is nuclear | 0.361 | 0.340 | 0.021 | 0.446 | |
| q35 | How environmentally friendly is solar | 0.923 | 0.904 | 0.019 | 0.203 | |
| q36 | How environmentally friendly is hydro | 0.767 | 0.767 | 0.000 | 0.997 | |
| q37 | How environmentally friendly is wood | 0.569 | 0.535 | 0.034 | 0.097 | |
| q38 | How environmentally friendly is methane | 0.717 | 0.668 | 0.049 | 0.036 | |
| q39 | How environmentally friendly is energy efficiency | 0.909 | 0.861 | 0.048 | 0.004 | |
| q61 | Cleaner energy costs more in short run | 0.793 | 0.763 | 0.030 | 0.241 | |
| q62 | Cleaner energy costs more in long run | 0.309 | 0.403 | -0.094 | 0.005 | |
| q63 | Normal variation or lasting climate change | 0.743 | 0.659 | 0.084 | 0.004 | |
| q64 | Human activity or natural causes | 0.327 | 0.445 | -0.118 | 0.000 | |
| q77 | What is the surcharge on VT electric bill | 0.014 | 0.041 | -0.028 | 0.029 | |
| q79 | What percentage from renewables | 0.110 | 0.089 | 0.020 | 0.478 | |
| q80 | What percentage from Yankee nuclear plant | 0.390 | 0.224 | 0.167 | 0.000 | |
| q81 | What percentage from Hydro Quebec | 0.226 | 0.136 | 0.090 | 0.017 | |
| q82 | What percentage from within Vermont | 0.048 | 0.091 | -0.043 | 0.044 | |
| q83 | Rates compared to rest of New England | 0.185 | 0.071 | 0.114 | 0.001 | |
| q84 | Average bill for Vermonter | 0.397 | 0.298 | 0.099 | 0.027 | |
| q85 | Contract with Yankee Nuclear expires | 0.425 | 0.240 | 0.185 | 0.000 | |
| q86 | Education - Less than high school | 0.014 | 0.038 | 0.025 | 0.018 | 0.001 |
| | High School | 0.083 | 0.206 | 0.123 | 0.001 | |
| | Some college | 0.214 | 0.234 | 0.020 | 0.602 | |
| | College graduate | 0.317 | 0.234 | -0.083 | 0.038 | |
| | Some graduate work | 0.076 | 0.070 | -0.006 | 0.813 | |
| | Graduate degree | 0.297 | 0.217 | -0.079 | 0.043 | |
| q87 | Age | 54.5 | 55.4 | -0.9 | 0.538 | |
| q88 | Employment - Full Time | 0.464 | 0.508 | -0.044 | 0.354 | 0.000 |
| | Part Time | 0.181 | 0.133 | 0.048 | 0.184 | |
| | Unemployed, Looking for Work | 0.094 | 0.048 | 0.046 | 0.084 | |
| | Student | 0.014 | 0.005 | 0.009 | 0.389 | |
| | Not Looking for Work | 0.246 | 0.306 | -0.060 | 0.149 | |
| q89 | Describe employment – Self | 0.425 | 0.303 | 0.122 | 0.039 | 0.000 |
| | Business (Under 25) | 0.149 | 0.176 | -0.027 | 0.532 | |
| | Business (Over 25) | 0.287 | 0.395 | -0.108 | 0.052 | |

| Q# | Question | P | NP | P - NP | *p* | $\chi^2$ |
|---|---|---|---|---|---|---|
| | Government | 0.103 | 0.101 | 0.002 | 0.956 | |
| | Other | 0.034 | 0.025 | 0.009 | 0.671 | |
| q90 | Monthly electric bill | 146.46 | 134.67 | 11.79 | 0.650 | |
| q91 | Household income < $25,000 | 0.142 | 0.142 | -0.001 | 0.988 | 0.391 |
| | $25,001 - 50,000 | 0.343 | 0.285 | 0.059 | 0.229 | |
| | $50,001 - 75,000 | 0.239 | 0.255 | -0.016 | 0.729 | |
| | $75,001 - 100,000 | 0.142 | 0.161 | -0.019 | 0.615 | |
| | $100,001 - 125,000 | 0.052 | 0.075 | -0.023 | 0.393 | |
| | $125,001 - 150,000 | 0.037 | 0.037 | 0.000 | 0.994 | |
| | > $150,000 | 0.045 | 0.045 | 0.000 | 0.994 | |
| q92 | Ideology | 0.444 | 0.481 | -0.037 | 0.241 | |
| q93 | Political affiliation – Democrat | 0.235 | 0.287 | -0.052 | 0.242 | 0.000 |
| | Republican | 0.103 | 0.227 | -0.124 | 0.000 | |
| | Independent/Other | 0.662 | 0.486 | 0.176 | 0.000 | |
| q94 | Gender – Female | 0.464 | 0.579 | -0.115 | 0.014 | |

NOTES:

Question numbers are from the T1 survey.

Question scorings through q. 85 have been linearly translated to the [0,1] interval for comparability. The scales have also been reversed, where necessary, so that the most affirmative response (e.g., "strongly agree") is scored 1. Q. 92 is translated similarly, with 1 corresponding to extremely conservative. For binary items like the knowledge questions, scored 1 for correct and 0 for incorrect, or the categories of categorical variables, like employment, education, and income, this makes the means proportions (e.g., .425 = 42.5% of the participants and .303 = 30.3% of the nonparticipants were self-employed). Age is scored in years, monthly utility bill in dollars.

*p* denotes the probability of seeing a difference between participants and nonparticipants this big or bigger (in absolute value), if the two groups were divided only by random assignment; $p(\chi^2)$ is the corresponding probability for an entire categorical variable, like occupation or party identification, as distinct from the individual categories, like self-employed or Republican.

The participants number 146, the nonparticipants 604. “No opinion” responses and nonresponses are omitted.

# Appendix E
## Pre- and Post-Deliberation Means and Significance

| Q# | Y/S/N | Question | T1 | T2 | T3 | T3-T1 | p | N Diff | T3-T2 | p | N Diff | N T1 | N T2 | N T3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Y | How much do you care about how electricity is produced | 0.822 | 0.859 | 0.915 | 0.091 | 0.000 | 141 | 0.063 | 0.000 | 131 | 146 | 133 | 141 |
| 2 | Y | Increasing efficiency vs. buying/generating power | 0.315 | 0.248 | 0.249 | -0.074 | 0.014 | 132 | -0.002 | 0.920 | 138 | 136 | 142 | 142 |
| 3a | S | What percentage would you like from wind | -- | 22.8 | 21.3 | -- | -- | -- | -1.1 | 0.466 | 144 | -- | 145 | 144 |
| 3b | S | What percentage would you like from oil | -- | 5.1 | 2.1 | -- | -- | -- | -3.0 | 0.000 | 141 | -- | 145 | 141 |
| 3c | S | What percentage would you like from natural gas | -- | 9.2 | 8.9 | -- | -- | -- | -0.2 | 0.815 | 140 | -- | 145 | 140 |
| 3d | S | What percentage would you like from coal | -- | 1.8 | 0.9 | -- | -- | -- | -0.8 | 0.162 | 140 | -- | 145 | 140 |
| 3e | S | What percentage would you like from nuclear | -- | 15.6 | 14.0 | -- | -- | -- | -1.9 | 0.173 | 143 | -- | 145 | 143 |
| 3f | S | What percentage would you like from solar | -- | 19.0 | 17.0 | -- | -- | -- | -1.7 | 0.303 | 143 | -- | 145 | 143 |
| 3g | S | What percentage would you like from hydro | -- | 23.3 | 27.5 | -- | -- | -- | 4.5 | 0.007 | 144 | -- | 145 | 144 |
| 3h | S | What percentage would you like from wood | -- | 10.5 | 14.7 | -- | -- | -- | 4.1 | 0.001 | 144 | -- | 145 | 144 |
| 3i | S | What percentage would you like from methane | -- | 11.2 | 11.7 | -- | -- | -- | 0.5 | 0.729 | 141 | -- | 145 | 141 |
| 4 | N | People who disagree may have good reasons | -- | 0.6 | 0.6 | -- | -- | -- | 0.015 | 0.553 | 130 | -- | 135 | 138 |
| 5 | N | Buy from other providers vs. build own facilities | -- | 0.7 | 0.7 | -- | -- | -- | 0.016 | 0.497 | 139 | -- | 141 | 144 |
| 6a | Y | Continue to buy electricity from Hydro Quebec | 0.638 | 0.693 | 0.817 | 0.172 | 0.000 | 131 | 0.122 | 0.000 | 143 | 132 | 144 | 145 |
| 6b | Y | Continue to buy electricity from VT Yankee nuclear | 0.549 | 0.514 | 0.500 | -0.046 | 0.138 | 141 | -0.016 | 0.541 | 144 | 142 | 145 | 145 |
| 6c | Y | Continue to buy electricity from independent producers | 0.855 | 0.866 | 0.922 | 0.067 | 0.002 | 142 | 0.058 | 0.004 | 143 | 143 | 144 | 145 |
| 6d | N | Higher/lower costs should mean higher/lower prices | -- | 0.675 | 0.703 | -- | -- | -- | 0.024 | 0.343 | 144 | -- | 146 | 144 |
| 6e | S | Should require minimum from renewable resources | -- | 0.790 | 0.851 | -- | -- | -- | 0.057 | 0.042 | 140 | -- | 143 | 143 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | S | What percentage mandated from renewables | -- | 52.7 | 57.5 | -- | -- | -- | 5.7 | 0.015 | 138 | -- | 138 | 144 |
| 8 | N | Produce electricity entirely in VT | -- | 0.277 | 0.303 | -- | -- | -- | 0.028 | 0.092 | 134 | -- | 137 | 142 |
| 9a | S | Build facilities for wind power in VT | -- | 0.855 | 0.897 | -- | -- | -- | 0.044 | 0.003 | 145 | -- | 145 | 146 |
| 9b | S | Build facilities for natural gas in VT | -- | 0.460 | 0.477 | -- | -- | -- | 0.013 | 0.602 | 135 | -- | 136 | 145 |
| 9c | S | Build facilities for biomass in VT | -- | 0.729 | 0.814 | -- | -- | -- | 0.085 | 0.000 | 144 | -- | 144 | 146 |
| 9d | S | Build facilities for hydropower in VT | -- | 0.779 | 0.798 | -- | -- | -- | 0.018 | 0.382 | 145 | -- | 145 | 146 |
| 9e | S | Build facilities for oil in VT in VT | -- | 0.204 | 0.151 | -- | -- | -- | -0.058 | 0.005 | 139 | -- | 139 | 145 |
| 9f | S | Build facilities for methane in VT | -- | 0.729 | 0.801 | -- | -- | -- | 0.076 | 0.000 | 143 | -- | 143 | 146 |
| 10 | S | Stable electric bills vs. market price | -- | 0.541 | 0.497 | -- | -- | -- | -0.034 | 0.243 | 139 | -- | 142 | 143 |
| 11 | S | Few large plants vs. many small ones | -- | 0.728 | 0.763 | -- | -- | -- | 0.035 | 0.162 | 138 | -- | 138 | 146 |
| 12 | Y | Support or oppose visible wind farm | 0.879 | 0.860 | 0.889 | 0.016 | 0.226 | 143 | 0.033 | 0.006 | 143 | 143 | 143 | 146 |
| 13 | Y | Increase or decrease funding for efficiency program | 0.902 | 0.854 | 0.908 | 0.007 | 0.740 | 143 | 0.066 | 0.000 | 137 | 143 | 137 | 146 |
| 14 | S | Increase or decrease electricity from renewables | -- | 0.944 | 0.983 | -- | -- | -- | 0.038 | 0.021 | 143 | -- | 143 | 146 |
| 15 | Y | How many dollars per month for no greenhouse gases | 36.71 | 29.64 | 29.35 | -7.00 | 0.254 | 129 | -0.04 | 0.980 | 138 | 131 | 140 | 141 |
| 16 | N | How many dollars per month for only wind from HQ | -- | 16.22 | 12.66 | -- | -- | -- | -3.74 | 0.075 | 138 | -- | 141 | 140 |
| 17 | N | How many dollars per month for only in-state electricity | -- | 19.64 | 18.38 | -- | -- | -- | -1.3 | 0.603 | 140 | -- | 141 | 143 |
| 18 | N | How many dollars per month for decentralized plants | -- | 18.46 | 19.23 | -- | -- | -- | 1.12 | 0.634 | 139 | -- | 140 | 142 |
| 15 | Y | How many dollars per month for no greenhouse gases (w/o ≥$100) | 19.45 | 20.92 | 20.46 | 2.17 | .107 | 110 | 0.31 | .777 | 125 | 116 | 129 | 129 |
| 16 | N | How many dollars per month for only wind from HQ (w/o ≥$100) | -- | 11.01 | 9.72 | -- | -- | -- | -1.34 | .218 | 131 | -- | 135 | 136 |
| 17 | N | How many dollars per month for only in-state electricity (w/o ≥$100) | -- | 12.46 | 12.15 | -- | -- | -- | -0.18 | .824 | 130 | -- | 134 | 134 |
| 18 | N | How many dollars per month for decentralized plants (w/o ≥$100) | -- | 11.51 | 12.64 | -- | -- | -- | 1.12 | .300 | 129 | -- | 133 | 132 |
| 19 | S | Divide costs among all vs. buy only enough to meet demand | -- | 0.267 | 0.248 | -- | -- | -- | -0.025 | 0.334 | 134 | -- | 135 | 144 |
| 20a | Y | How environmentally friendly is wind | 0.895 | 0.862 | 0.896 | 0.003 | 0.779 | 145 | 0.033 | 0.021 | 143 | 145 | 143 | 146 |
| 20b | Y | How environmentally friendly is oil | 0.237 | 0.209 | 0.121 | -0.118 | 0.000 | 144 | -0.089 | 0.000 | 142 | 145 | 143 | 145 |
| 20c | Y | How environmentally friendly is natural gas | 0.431 | 0.359 | 0.378 | -0.049 | 0.014 | 138 | 0.014 | 0.453 | 141 | 139 | 142 | 145 |
| 20d | Y | How environmentally friendly is coal | 0.165 | 0.108 | 0.057 | -0.112 | 0.000 | 141 | -0.051 | 0.000 | 142 | 142 | 143 | 145 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20e | Y | How environmentally friendly is nuclear | 0.361 | 0.374 | 0.365 | -0.006 | 0.801 | 142 | -0.008 | 0.694 | 142 | 143 | 143 | 145 |
| 20f | Y | How environmentally friendly is solar | 0.923 | 0.922 | 0.953 | 0.031 | 0.084 | 146 | 0.038 | 0.019 | 145 | 146 | 145 | 146 |
| 20g | Y | How environmentally friendly is hydro | 0.767 | 0.756 | 0.778 | 0.009 | 0.658 | 140 | 0.022 | 0.248 | 144 | 140 | 144 | 146 |
| 20h | Y | How environmentally friendly is wood | 0.569 | 0.560 | 0.689 | 0.121 | 0.000 | 143 | 0.132 | 0.000 | 142 | 144 | 143 | 144 |
| 20i | Y | How environmentally friendly is methane | 0.717 | 0.724 | 0.834 | 0.125 | 0.000 | 134 | 0.116 | 0.000 | 138 | 135 | 139 | 145 |
| 20j | Y | How environmentally friendly is energy efficiency | 0.909 | 0.919 | 0.936 | 0.033 | 0.039 | 137 | 0.022 | 0.149 | 141 | 138 | 142 | 144 |
| 21a | S | How concerned - radioactive waste | -- | 0.779 | 0.777 | -- | -- | -- | -0.003 | 0.888 | 145 | -- | 145 | 146 |
| 21b | S | How concerned - greenhouse gases | -- | 0.843 | 0.862 | -- | -- | -- | 0.022 | 0.262 | 143 | -- | 143 | 146 |
| 21c | S | How concerned - other air pollution | -- | 0.800 | 0.838 | -- | -- | -- | 0.038 | 0.079 | 144 | -- | 145 | 145 |
| 21d | S | How concerned - damage to river habitats | -- | 0.671 | 0.639 | -- | -- | -- | -0.028 | 0.221 | 143 | -- | 144 | 145 |
| 21e | S | How concerned - visual impact of wind farms | -- | 0.294 | 0.302 | -- | -- | -- | -0.001 | 0.958 | 142 | -- | 143 | 145 |
| 22a | S | Threat to scenic beauty - coal fired plant | -- | 0.792 | 0.886 | -- | -- | -- | 0.097 | 0.000 | 141 | -- | 141 | 146 |
| 22b | S | Threat to scenic beauty - natural gas plant | -- | 0.603 | 0.590 | -- | -- | -- | -0.017 | 0.462 | 142 | -- | 142 | 146 |
| 22c | S | Threat to scenic beauty - utility wind farm | -- | 0.307 | 0.272 | -- | -- | -- | -0.043 | 0.087 | 141 | -- | 142 | 145 |
| 22d | S | Threat to scenic beauty - residential wind farm | -- | 0.192 | 0.176 | -- | -- | -- | -0.017 | 0.495 | 142 | -- | 143 | 145 |
| 22e | S | Threat to scenic beauty - transmission lines | -- | 0.511 | 0.488 | -- | -- | -- | -0.016 | 0.497 | 142 | -- | 142 | 146 |
| 23 | S | What percentage reduced by 2017 through efficiency | -- | 31.1 | 22.2 | -- | -- | -- | -8.8 | 0.000 | 143 | -- | 146 | 143 |
| 24a | S | Percentage possible by 2017 - wind | -- | 25.6 | 24.4 | -- | -- | -- | -1.2 | 0.546 | 143 | -- | 145 | 143 |
| 24b | S | Percentage possible by 2017 - oil | -- | 15.7 | 12.4 | -- | -- | -- | -2.8 | 0.194 | 142 | -- | 145 | 143 |
| 24c | S | Percentage possible by 2017 - natural gas | -- | 18.6 | 20.3 | -- | -- | -- | 2.2 | 0.243 | 138 | -- | 145 | 139 |
| 24d | S | Percentage possible by 2017 - coal | -- | 15.0 | 11.9 | -- | -- | -- | -3.4 | 0.195 | 141 | -- | 145 | 142 |
| 24e | S | Percentage possible by 2017 – nuclear | -- | 27.1 | 25.6 | -- | -- | -- | -1.0 | 0.697 | 141 | -- | 145 | 141 |
| 24f | S | Percentage possible by 2017 - solar | -- | 20.3 | 16.2 | -- | -- | -- | -3.7 | 0.013 | 140 | -- | 145 | 140 |
| 24g | S | Percentage possible by 2017 – hydro | -- | 30.2 | 36.2 | -- | -- | -- | 6.3 | 0.002 | 141 | -- | 145 | 141 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 24h | S | Percentage possible by 2017 – wood | -- | 17.3 | 18.3 | -- | -- | -- | 1.3 | 0.421 | 141 | -- | 145 | 141 |
| 24i | S | Percentage possible by 2017 – methane | -- | 14.4 | 11.4 | -- | -- | -- | -2.6 | 0.176 | 138 | -- | 145 | 138 |
| 25a | Y | Cleaner energy costs more in short run | 0.793 | 0.788 | 0.842 | 0.046 | 0.067 | 140 | 0.054 | 0.037 | 144 | 141 | 146 | 144 |
| 25b | Y | Cleaner energy costs more in long run | 0.309 | 0.355 | 0.293 | -0.020 | 0.493 | 139 | -0.066 | 0.011 | 141 | 141 | 143 | 144 |
| 25c | N | Non-HQ power replaced by gas, coal, nuclear, or oil | -- | 0.443 | 0.385 | -- | -- | -- | -0.058 | 0.043 | 138 | -- | 141 | 143 |
| 25d | N | Non-VT Yankee power replaced by gas, coal, nuclear, or oil | -- | 0.449 | 0.313 | -- | -- | -- | -0.128 | 0.000 | 139 | -- | 143 | 142 |
| 26 | Y | Normal variation vs. lasting climate change | 0.743 | 0.792 | 0.762 | 0.014 | 0.592 | 138 | -0.027 | 0.150 | 142 | 139 | 144 | 144 |
| 27 | Y | Human activity vs. natural causes | 0.327 | 0.262 | 0.257 | -0.083 | 0.001 | 141 | -0.013 | 0.556 | 143 | 142 | 144 | 145 |
| 28 | S | Only direct costs vs. indirect costs as well | -- | 0.862 | 0.882 | -- | -- | -- | 0.020 | 0.294 | 141 | -- | 143 | 144 |
| 29a | S | How important - low rates | -- | 0.638 | 0.649 | -- | -- | -- | 0.012 | 0.491 | 145 | -- | 146 | 145 |
| 29b | S | How important - stable rates | -- | 0.648 | 0.674 | -- | -- | -- | 0.025 | 0.225 | 142 | -- | 144 | 144 |
| 29c | S | How important - reducing foreign dependence | -- | 0.863 | 0.848 | -- | -- | -- | -0.013 | 0.432 | 142 | -- | 143 | 145 |
| 29d | S | How important - minimizing air pollution | -- | 0.906 | 0.934 | -- | -- | -- | 0.027 | 0.017 | 142 | -- | 144 | 143 |
| 29e | S | How important - using power produced in Vermont | -- | 0.727 | 0.755 | -- | -- | -- | 0.034 | 0.071 | 143 | -- | 144 | 145 |
| 29f | S | How important - keeping scenic beauty | -- | 0.499 | 0.483 | -- | -- | -- | -0.021 | 0.276 | 141 | -- | 144 | 143 |
| 29g | S | How important - reducing GHG emissions | -- | 0.896 | 0.897 | -- | -- | -- | 0.005 | 0.711 | 142 | -- | 143 | 145 |
| 29h | S | How important - reliable supply | -- | 0.883 | 0.887 | -- | -- | -- | 0.009 | 0.514 | 142 | -- | 143 | 145 |
| 29i | S | How important - reducing radioactive wastes | -- | 0.818 | 0.810 | -- | -- | -- | -0.009 | 0.594 | 141 | -- | 142 | 145 |
| 29j | S | How important - creating jobs in Vermont | -- | 0.794 | 0.821 | -- | -- | -- | 0.025 | 0.155 | 142 | -- | 143 | 145 |
| 29k | S | How important - resources that will never be used up | -- | 0.888 | 0.928 | -- | -- | -- | 0.046 | 0.001 | 141 | -- | 143 | 144 |
| 30 | Y | What is the surcharge on VT electric bill | 0.014 | 0.212 | 0.370 | 0.356 | 0.000 | 146 | 0.158 | 0.000 | 146 | 146 | 146 | 146 |
| 31 | Y | Efficiency program impact (#5 right) | 0.021 | 0.021 | 0.021 | 0.000 | 1.000 | 146 | 0.000 | 1.000 | 146 | 146 | 146 | 146 |
| 31a | Y | Efficiency program impact (#4 right) | 0.000 | 0.000 | 0.000 | -- | -- | -- | 0.130 | 0.003 | 146 | 146 | 146 | 146 |
| 32 | Y | What percentage from renewables | 0.110 | 0.151 | 0.281 | 0.171 | 0.000 | 146 | 0.192 | 0.000 | 146 | 146 | 146 | 146 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 33 | Y | What percentage from Yankee nuclear plant | 0.390 | 0.712 | 0.904 | 0.514 | 0.000 | 146 | 0.068 | 0.114 | 146 | 146 | 146 | 146 |
| 34 | Y | What percentage from Hydro Quebec | 0.226 | 0.610 | 0.678 | 0.452 | 0.000 | 146 | 0.027 | 0.581 | 146 | 146 | 146 | 146 |
| 35 | Y | What percentage from within Vermont | 0.048 | 0.418 | 0.445 | 0.397 | 0.000 | 146 | 0.253 | 0.000 | 146 | 146 | 146 | 146 |
| 36 | Y | Rates compared to rest of New England | 0.185 | 0.425 | 0.678 | 0.493 | 0.000 | 146 | 0.075 | 0.027 | 146 | 146 | 146 | 146 |
| 37 | Y | Average bill for Vermonter | 0.397 | 0.610 | 0.685 | 0.288 | 0.000 | 146 | 0.144 | 0.000 | 146 | 146 | 146 | 146 |
| 38 | Y | Contract with Yankee Nuclear expires | 0.425 | 0.836 | 0.979 | 0.555 | 0.000 | 146 | 0.129 | 0.000 | 146 | 146 | 146 | 146 |

NOTES:

Question numbers from T3 ("Final") Questionnaire.

Y/S/N: Y = asked of all interviewees at T1; "S" = asked of some (the LF) interviewees at T1; "N" = asked of no one at T1.

T1, T2, T3 = means; T3 – T1, T3 – T2 = differences of means.

All the columns headed “N” give the number of cases on which a given calculation is based. “No opinion” responses and nonresponses are omitted.

*p* = the probability of obtaining a difference this large or larger (in absolute value) if there would be no difference in the whole population, were it given the same experience. By convention, $p < .05$ = “statistical significance.”

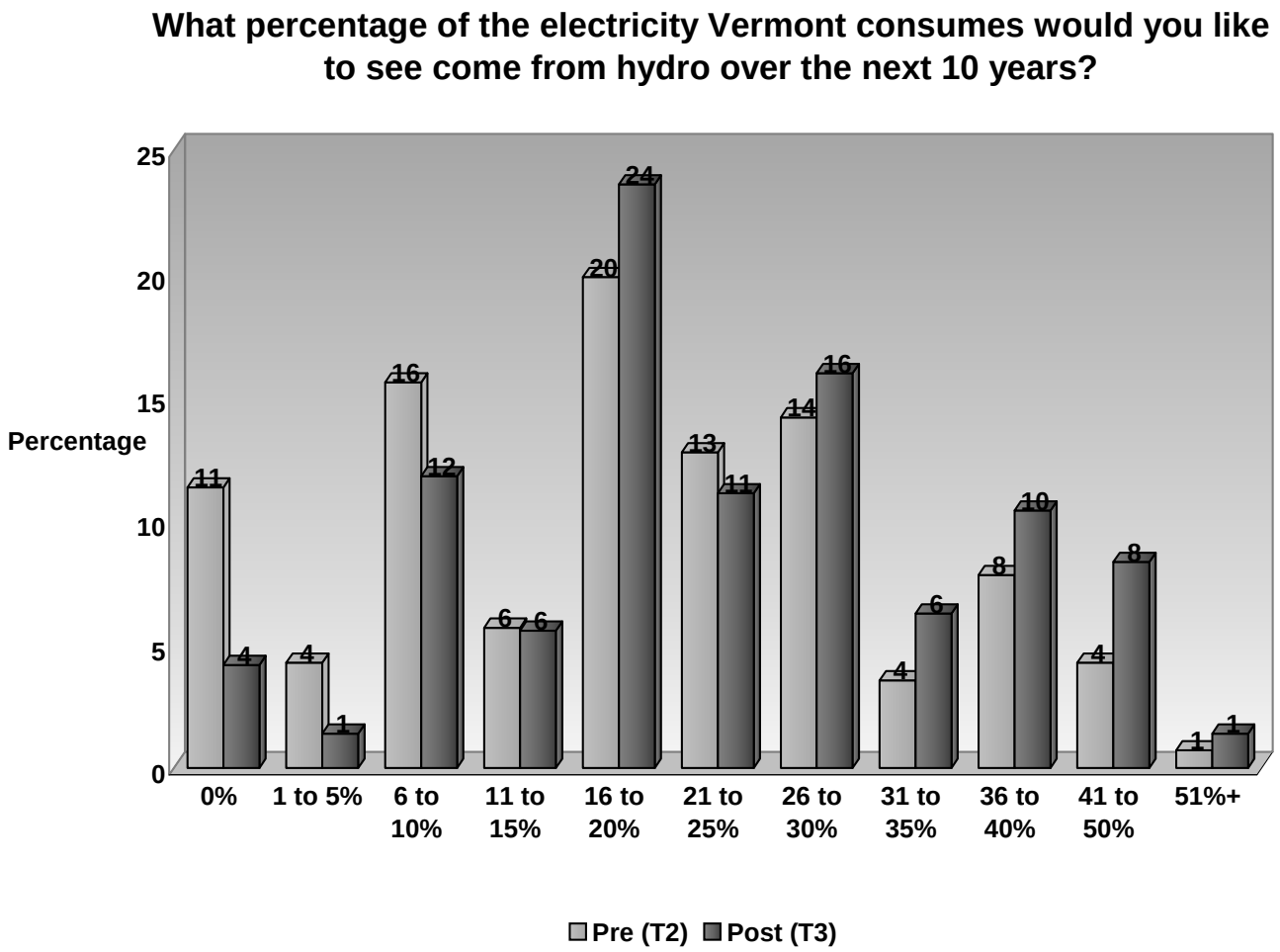
All question scorings excepting percentages have been linearly translated to the [0,1] interval for comparability. The scales have also been reversed, where necessary (for qq. 4, 6a-e, 12-14, and 25a-d)so that so that the most affirmative response (e.g., "strongly agree") is scored 1.

# Appendix F

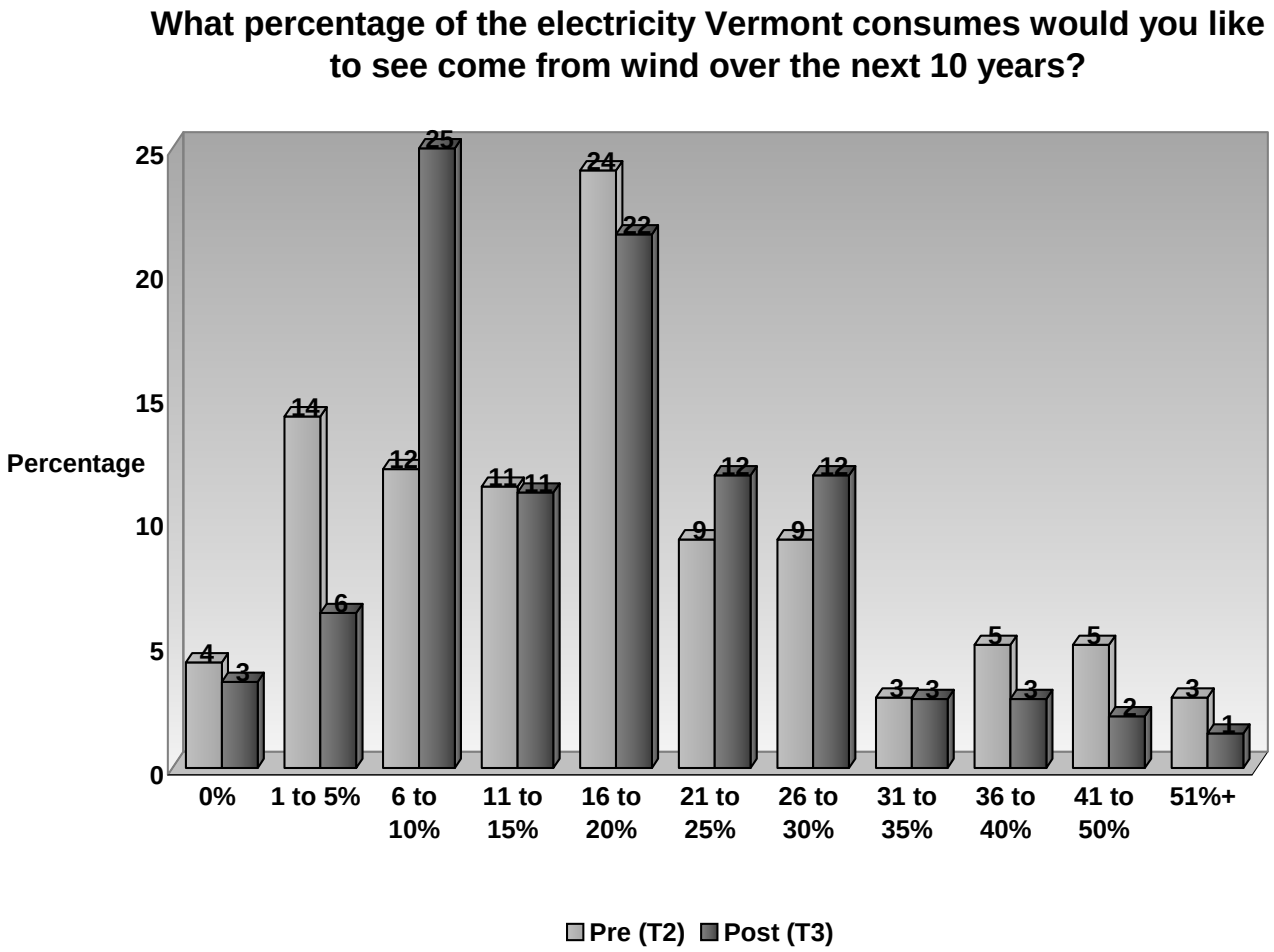
## Normed Percentages, Pre- and Post-Deliberation

| Q# | Question | T2 | T3 | T3-T2 | *P* |
|---|---|---|---|---|---|
| | | | | | |
| 3a | What percentage would you like from wind | 19.8 | 18.0 | -1.8 | 0.147 |
| 3b | What percentage would you like from oil | 3.5 | 1.3 | -2.1 | 0.000 |
| 3c | What percentage would you like from natural gas | 7.7 | 7.6 | -0.1 | 0.870 |
| 3d | What percentage would you like from coal | 1.1 | 0.5 | -0.6 | 0.009 |
| 3e | What percentage would you like from nuclear | 14.4 | 12.4 | -2.1 | 0.062 |
| 3f | What percentage would you like from solar | 15.9 | 13.9 | -2.0 | 0.111 |
| 3g | What percentage would you like from hydro | 20.2 | 24.3 | 4.1 | 0.001 |
| 3h | What percentage would you like from wood | 8.6 | 13.5 | 4.9 | 0.000 |
| 3i | What percentage would you like from methane | 8.8 | 9.8 | 0.8 | 0.323 |

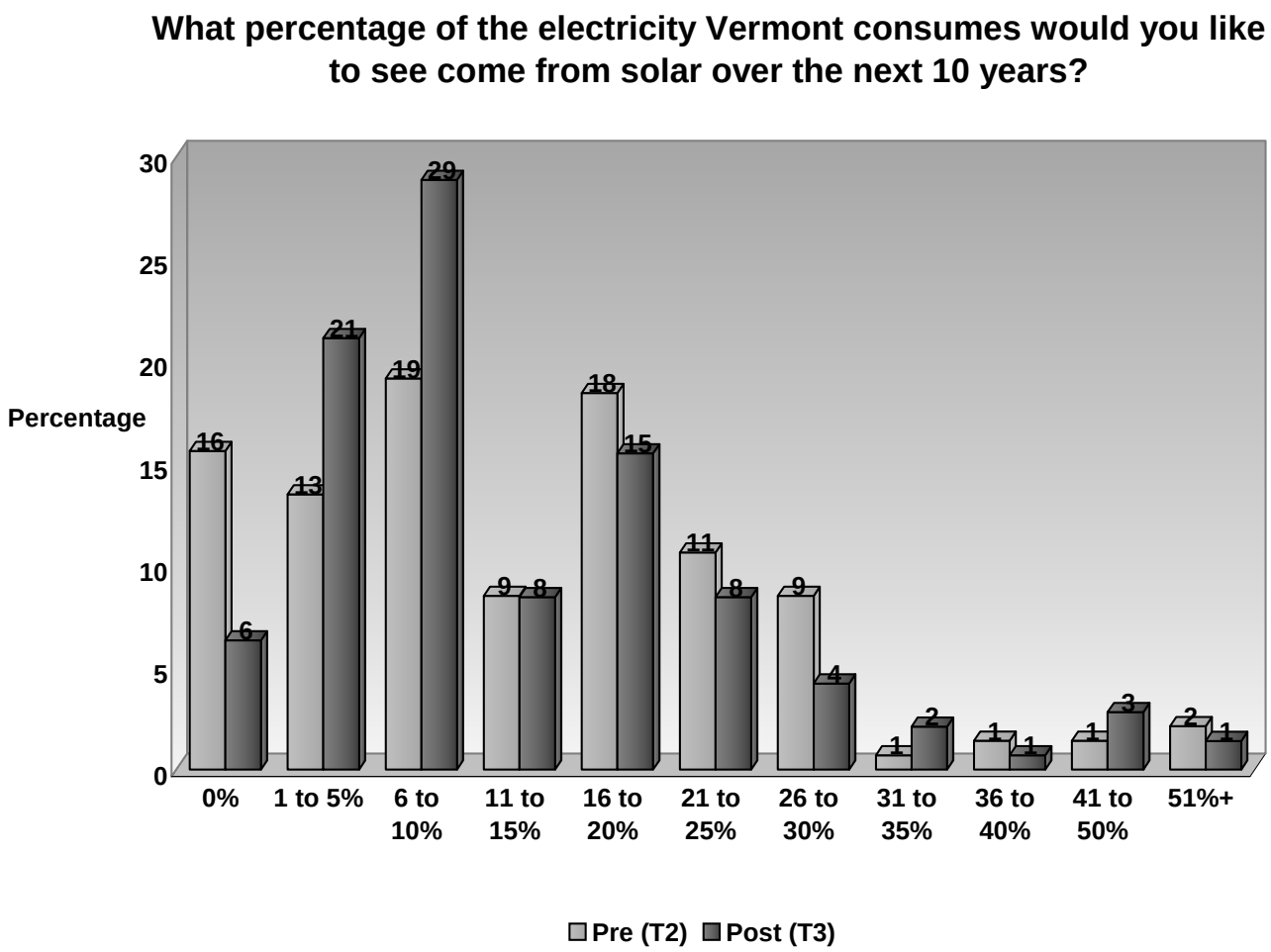
# Figure 1: What Percentage to Get from Hydro?



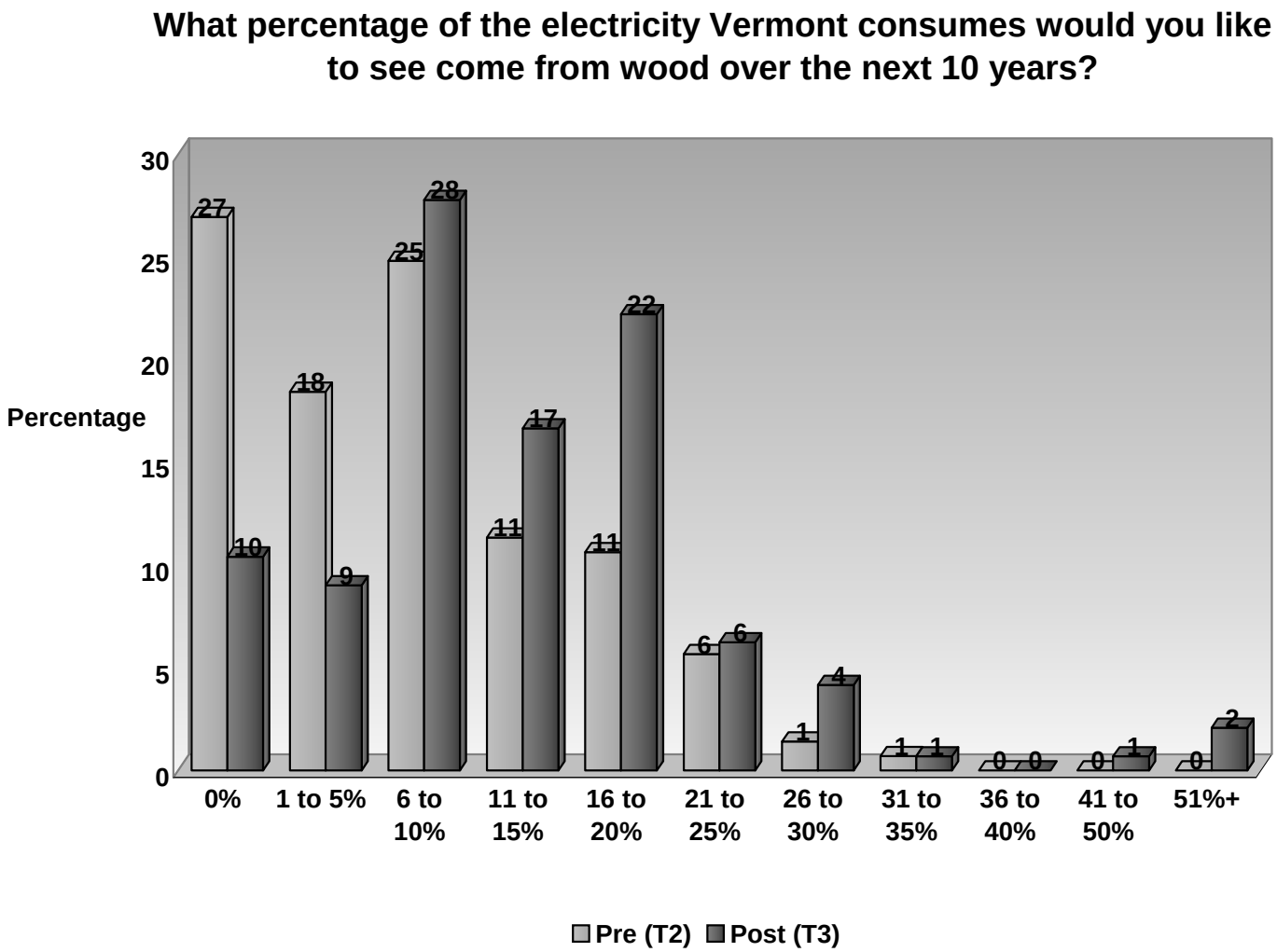
# Figure 2: What Percentage to Get from Wind?



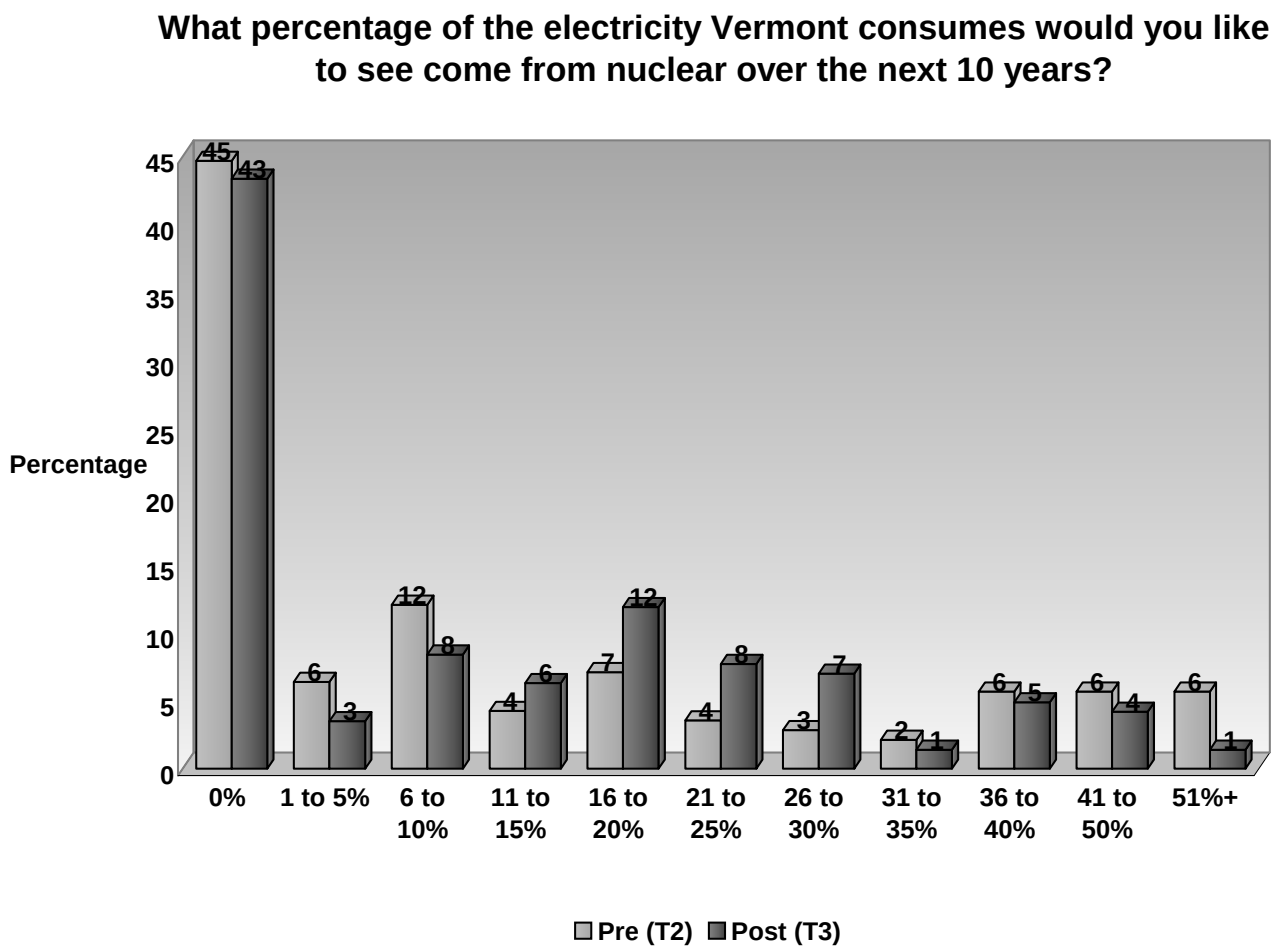
# Figure 3: What Percentage to Get from Solar?



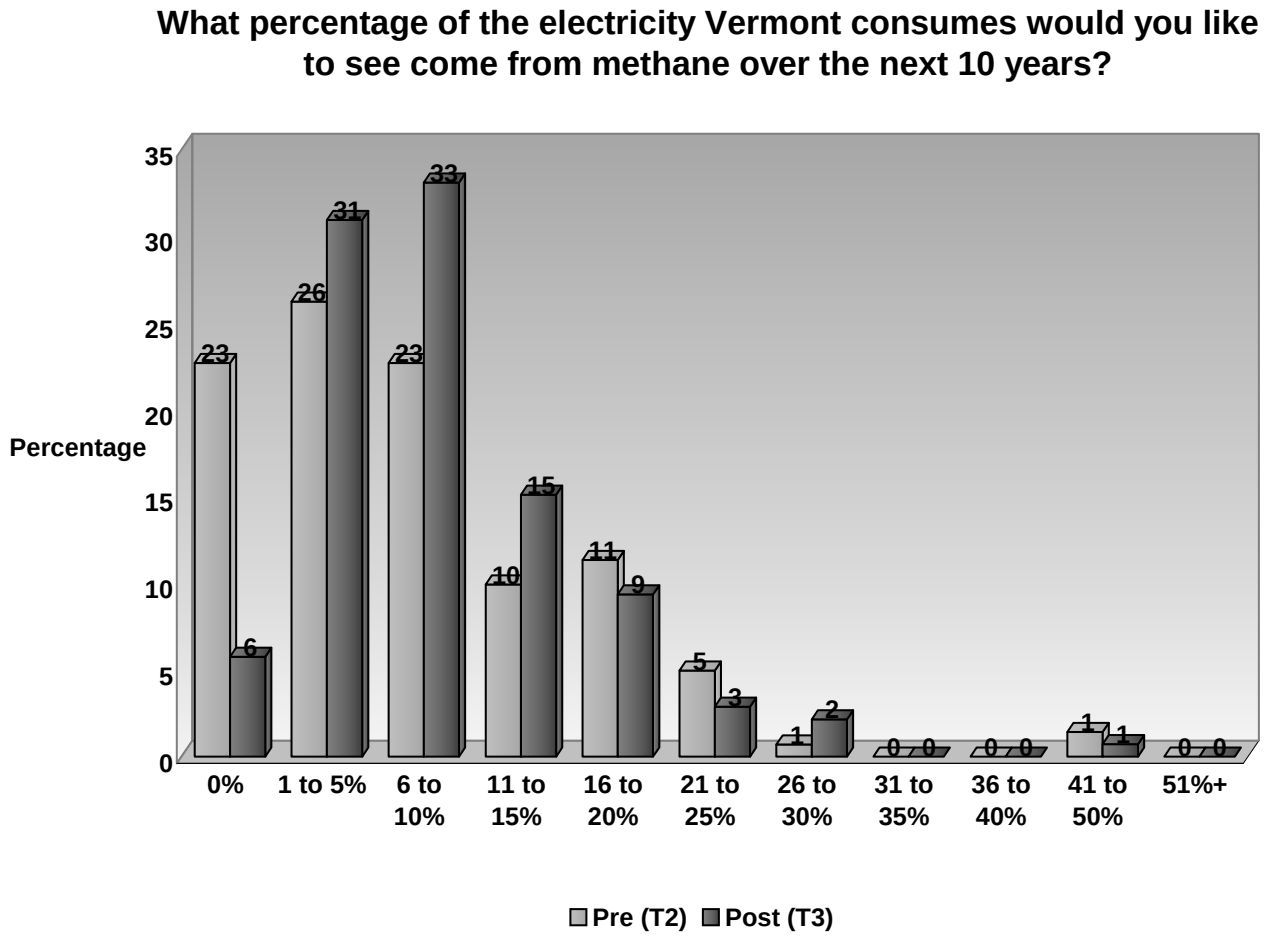
# Figure 4: What Percentage to Get from Wood?



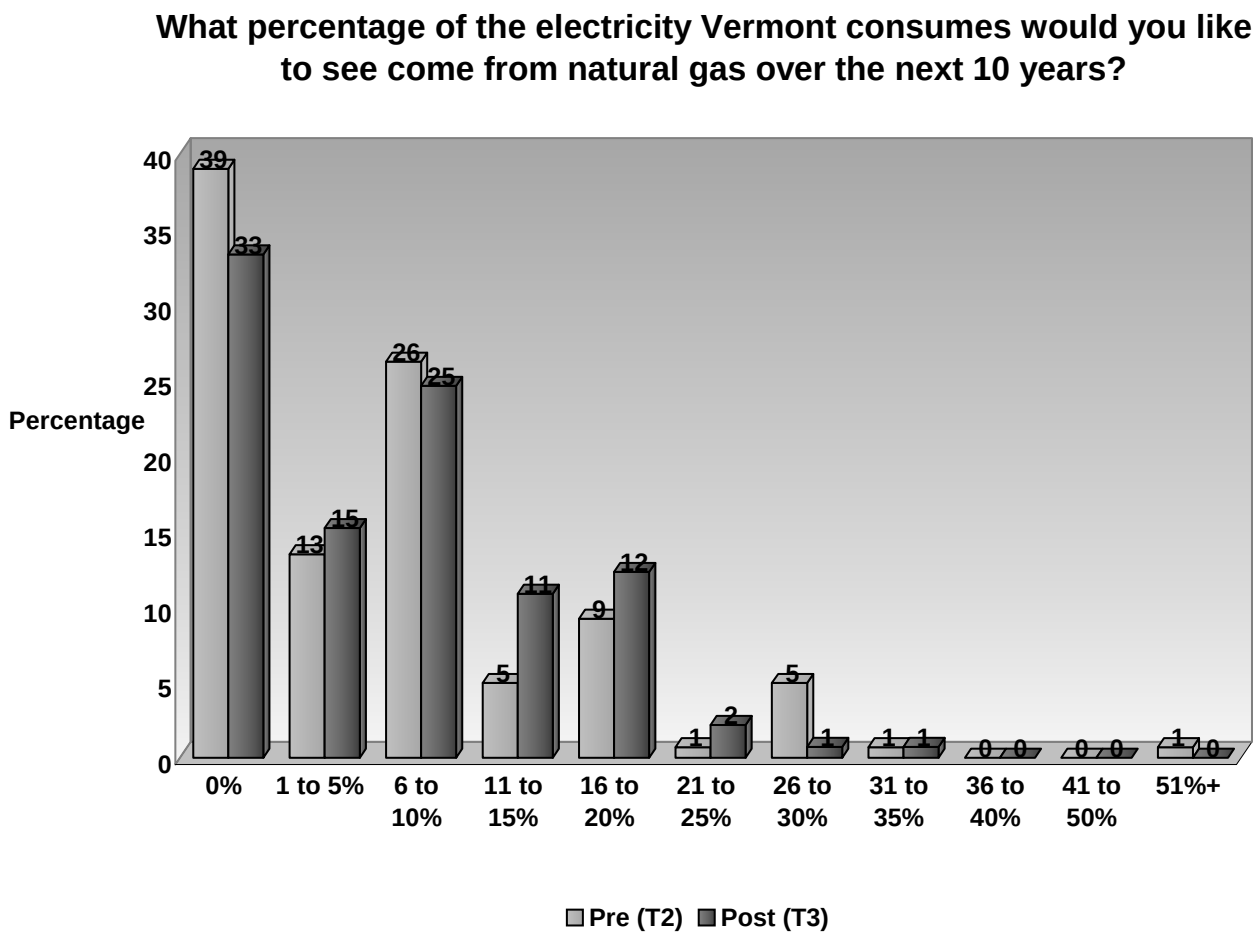
# Figure 5: What Percentage to Get from Nuclear?



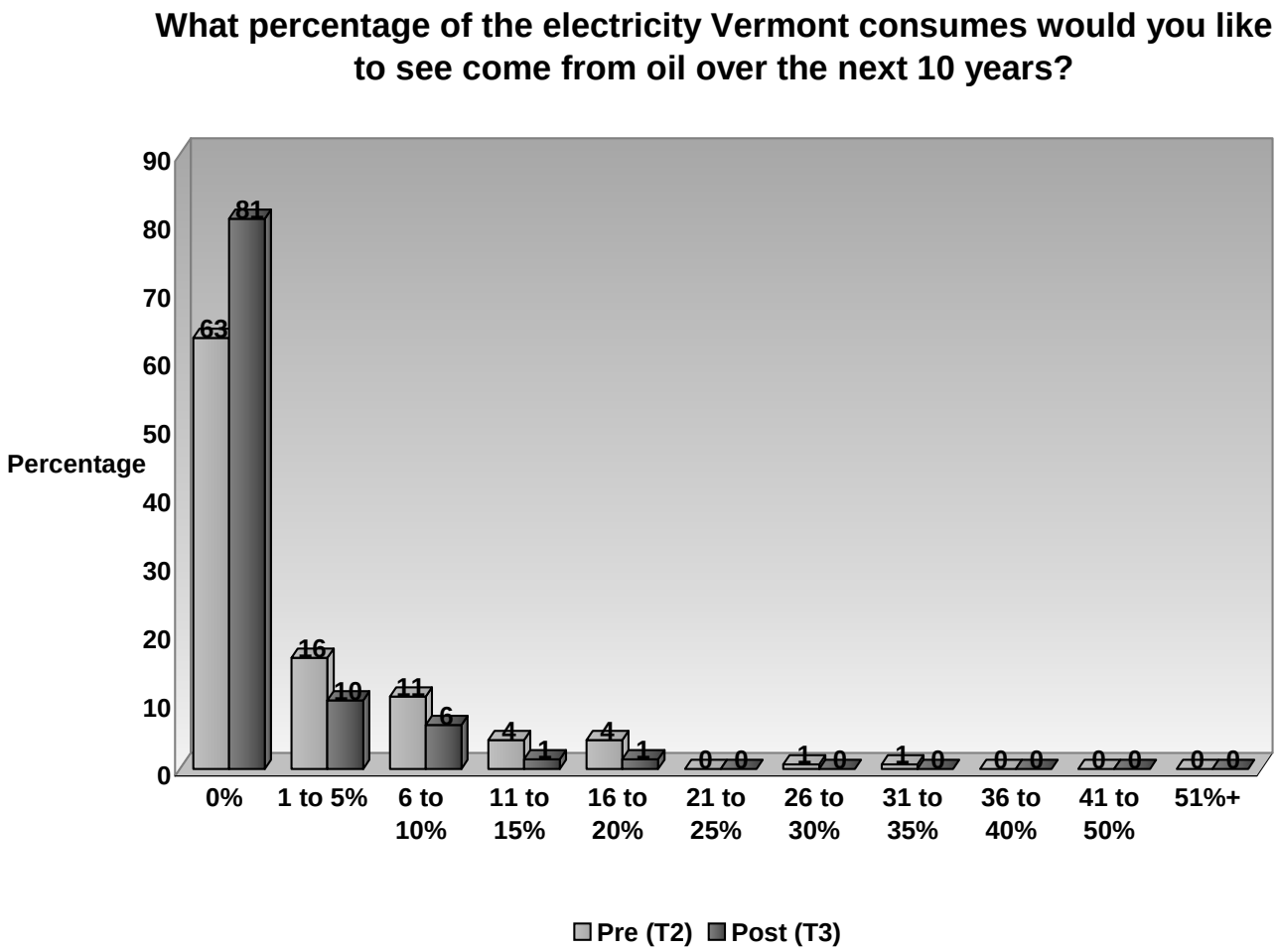
# Figure 6: What Percentage to Get from Methane?



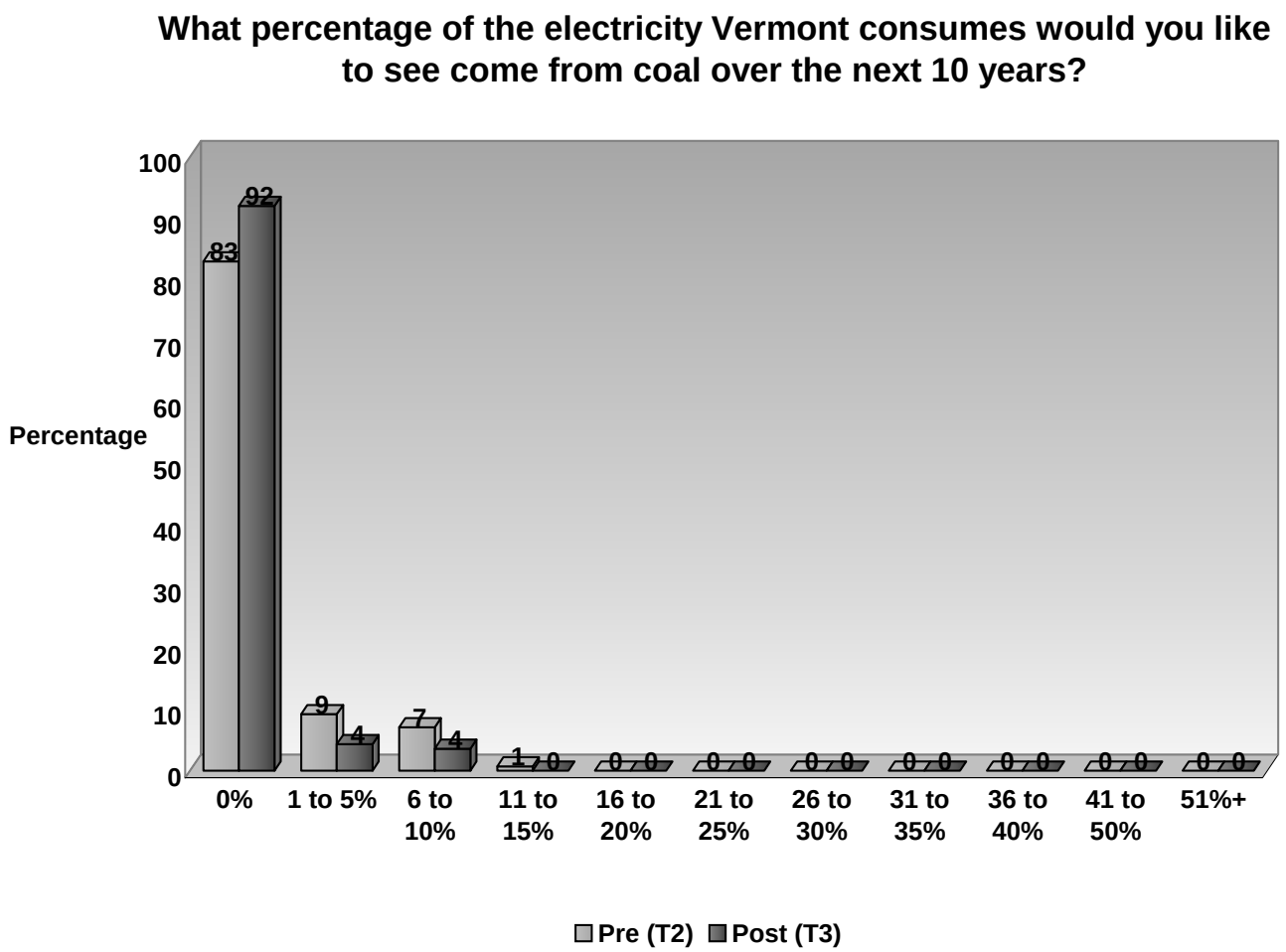
# Figure 7: What Percentage to Get from Natural Gas?



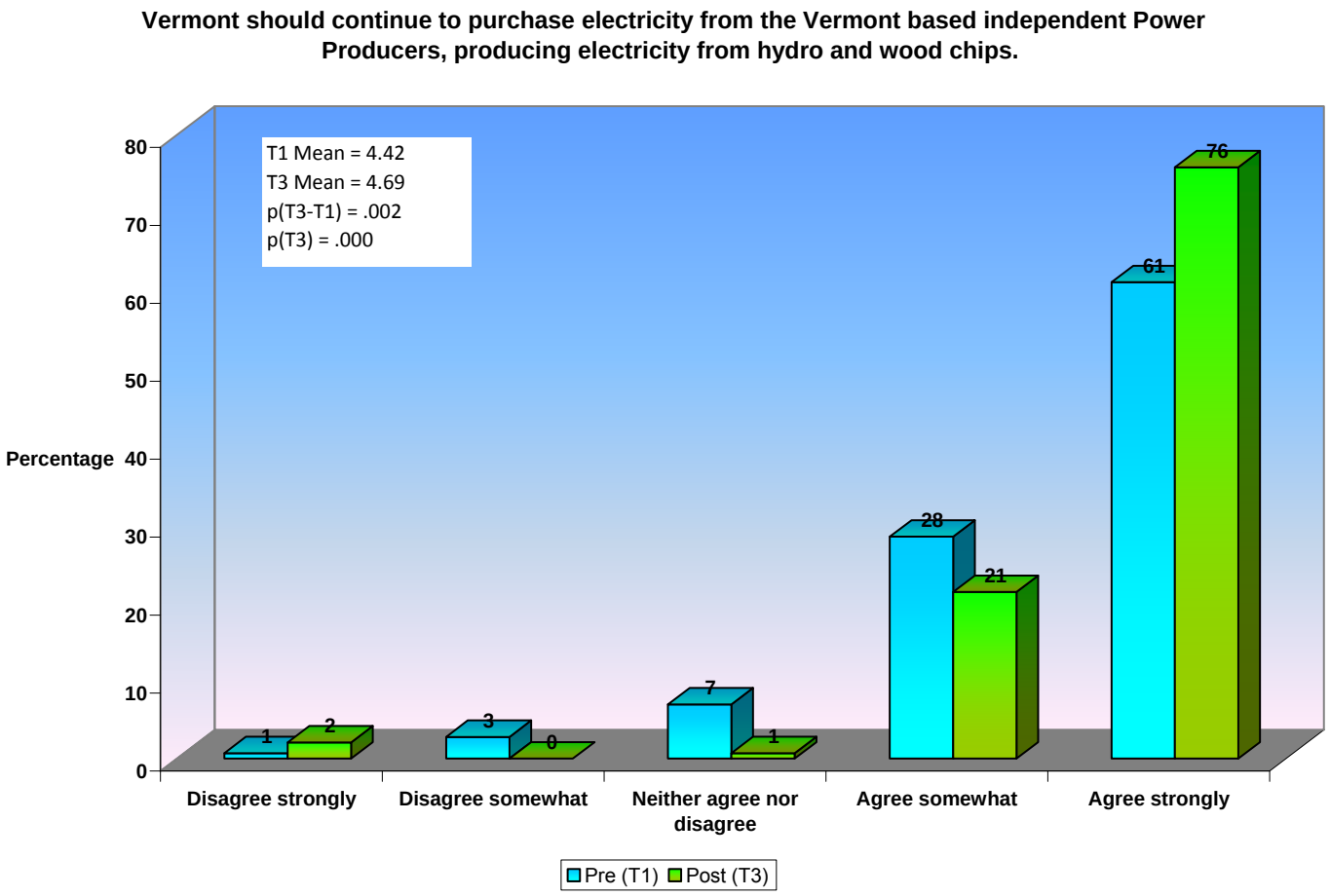
# Figure 8: What Percentage to Get from Oil?



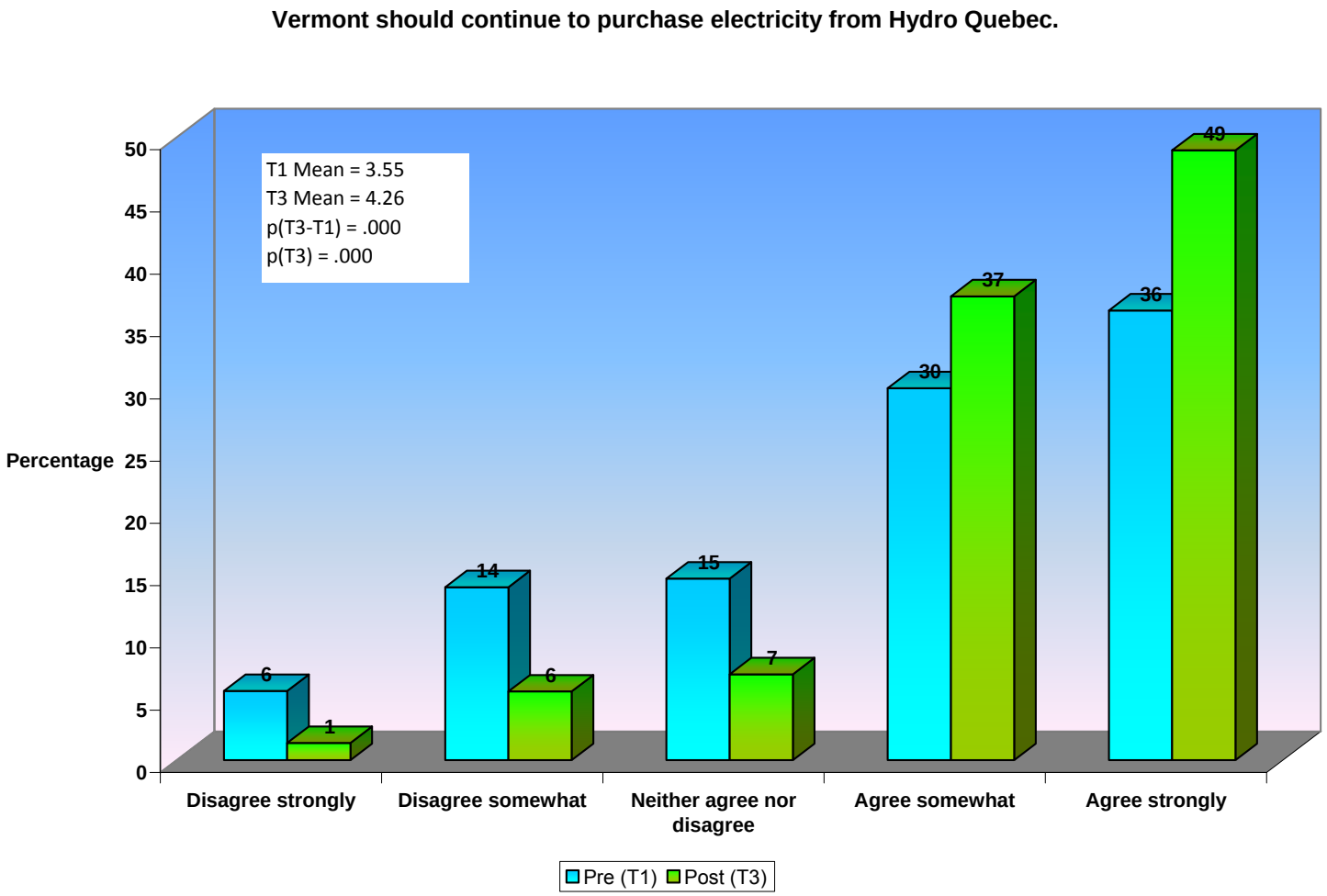
# Figure 9: What Percentage to Get from Coal?



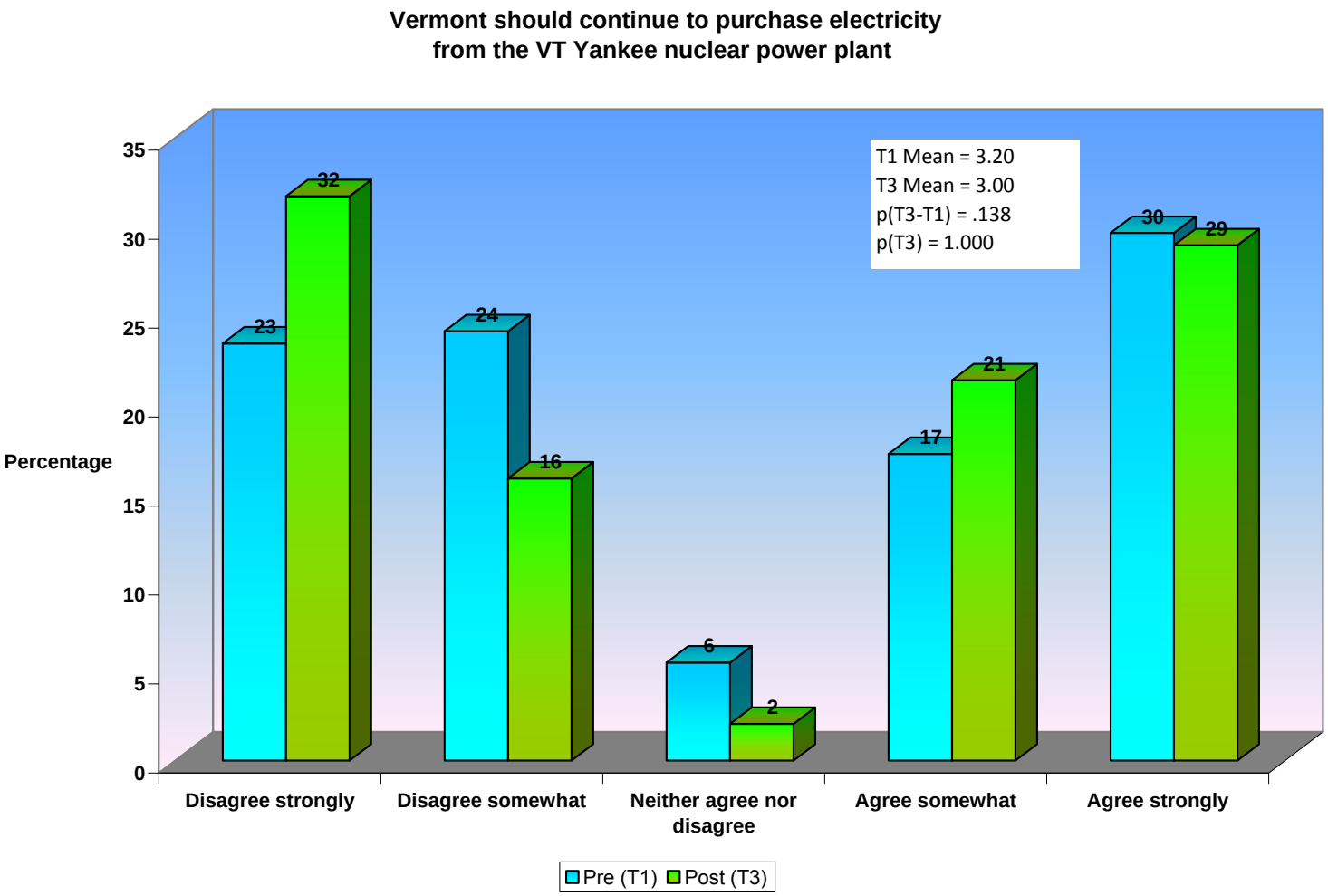
# Figure 10: Buy from other providers vs. build own facilities



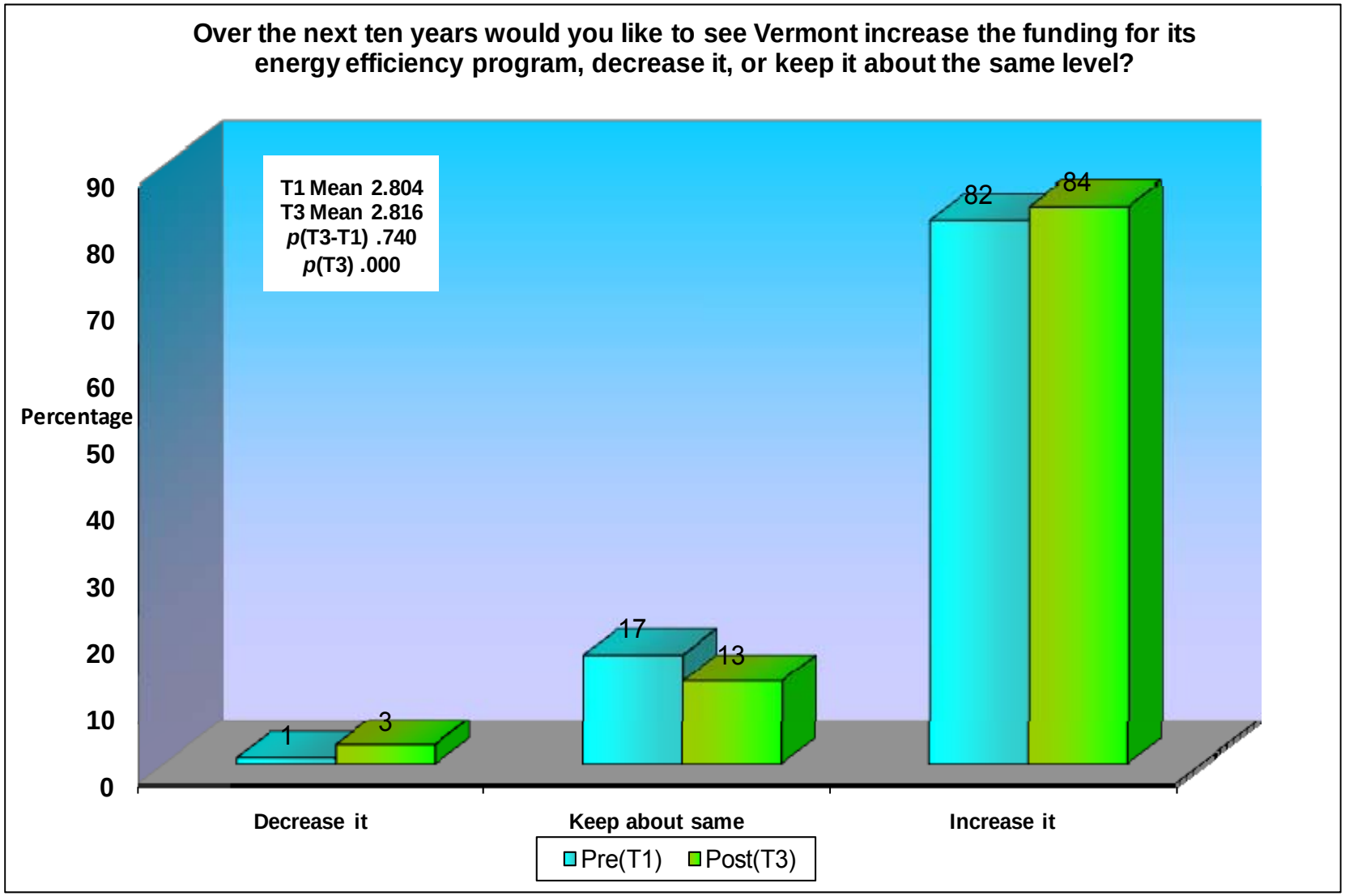
# Figure 11: Continue to Buy from Hydro Quebec?



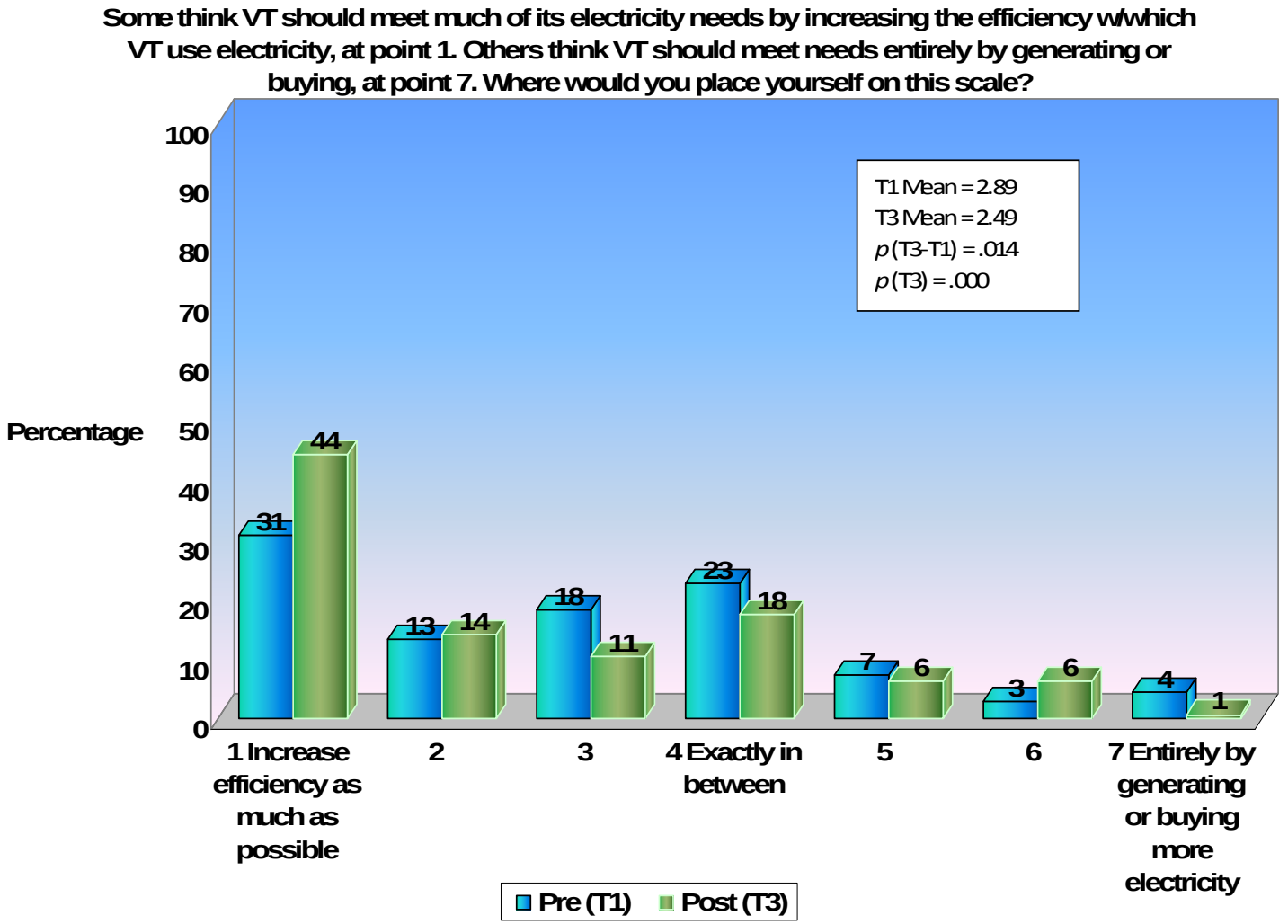
# Figure 12: Continue to Buy from VT Yankee?



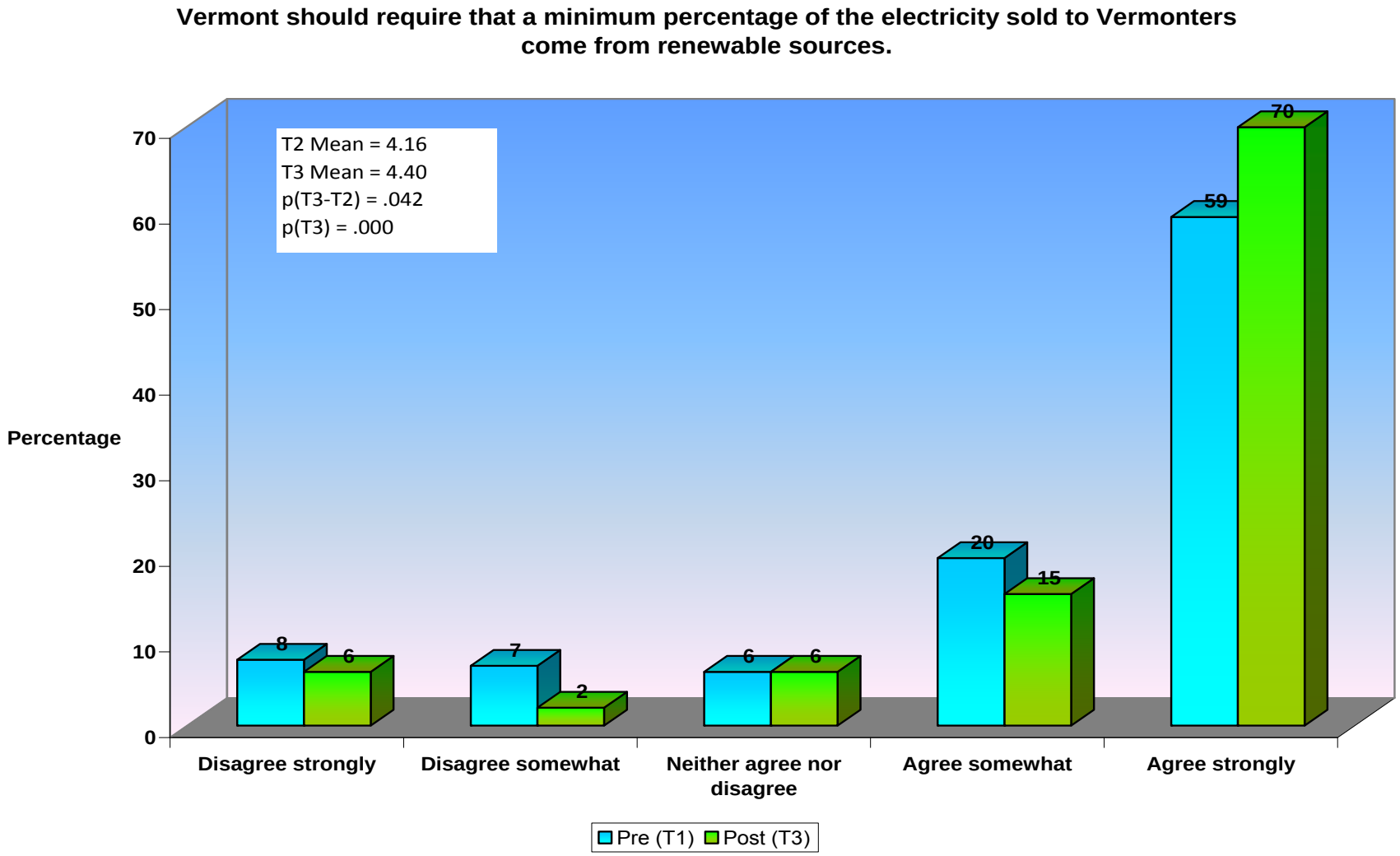
# Figure 13: Increase or Decrease Funding for Efficiency Program



# Figure 14: Increasing Efficiency vs. Buying/Generating Power

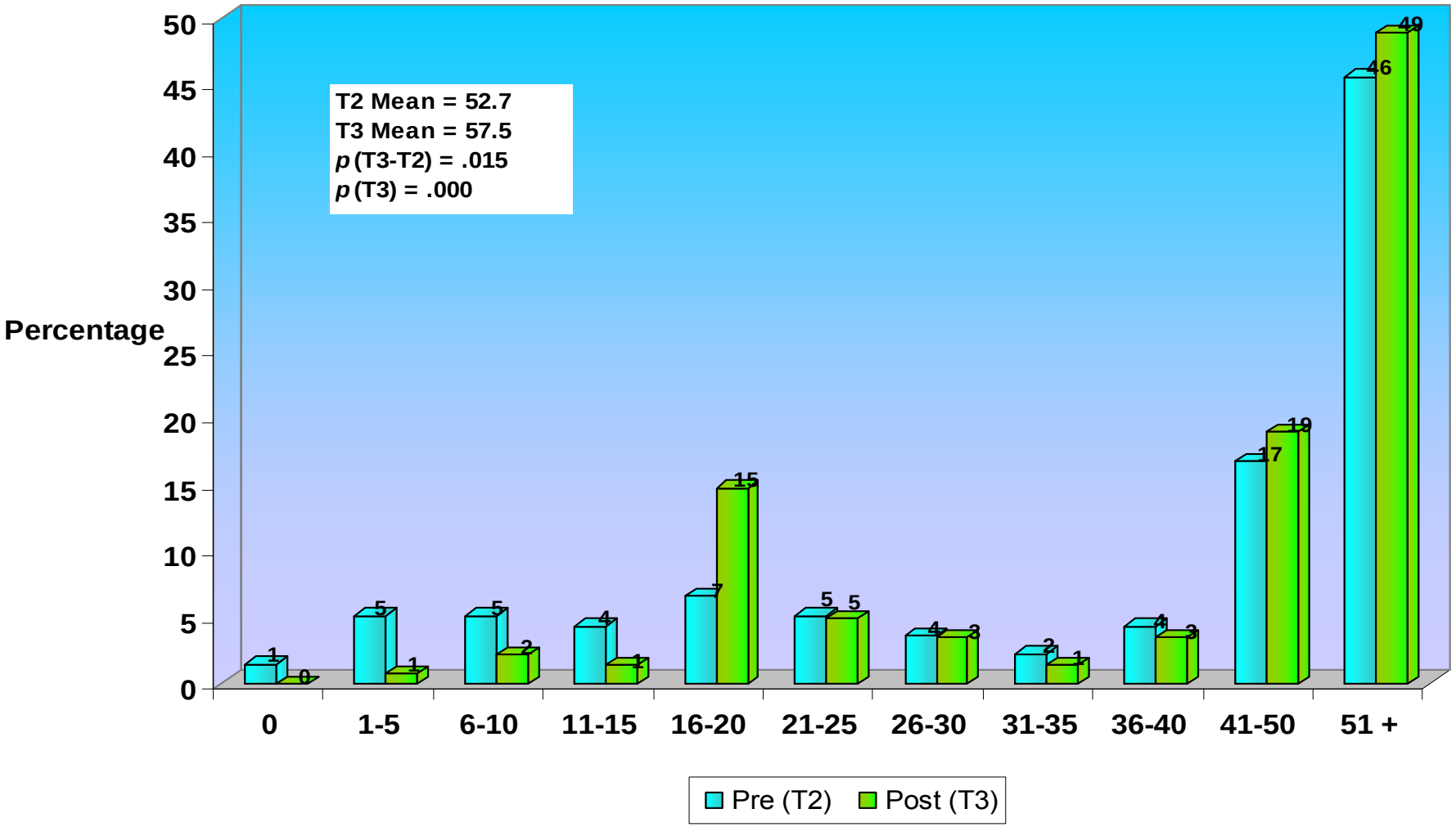


# Figure 15: Mandate a Minimum Percentage from Renewables?

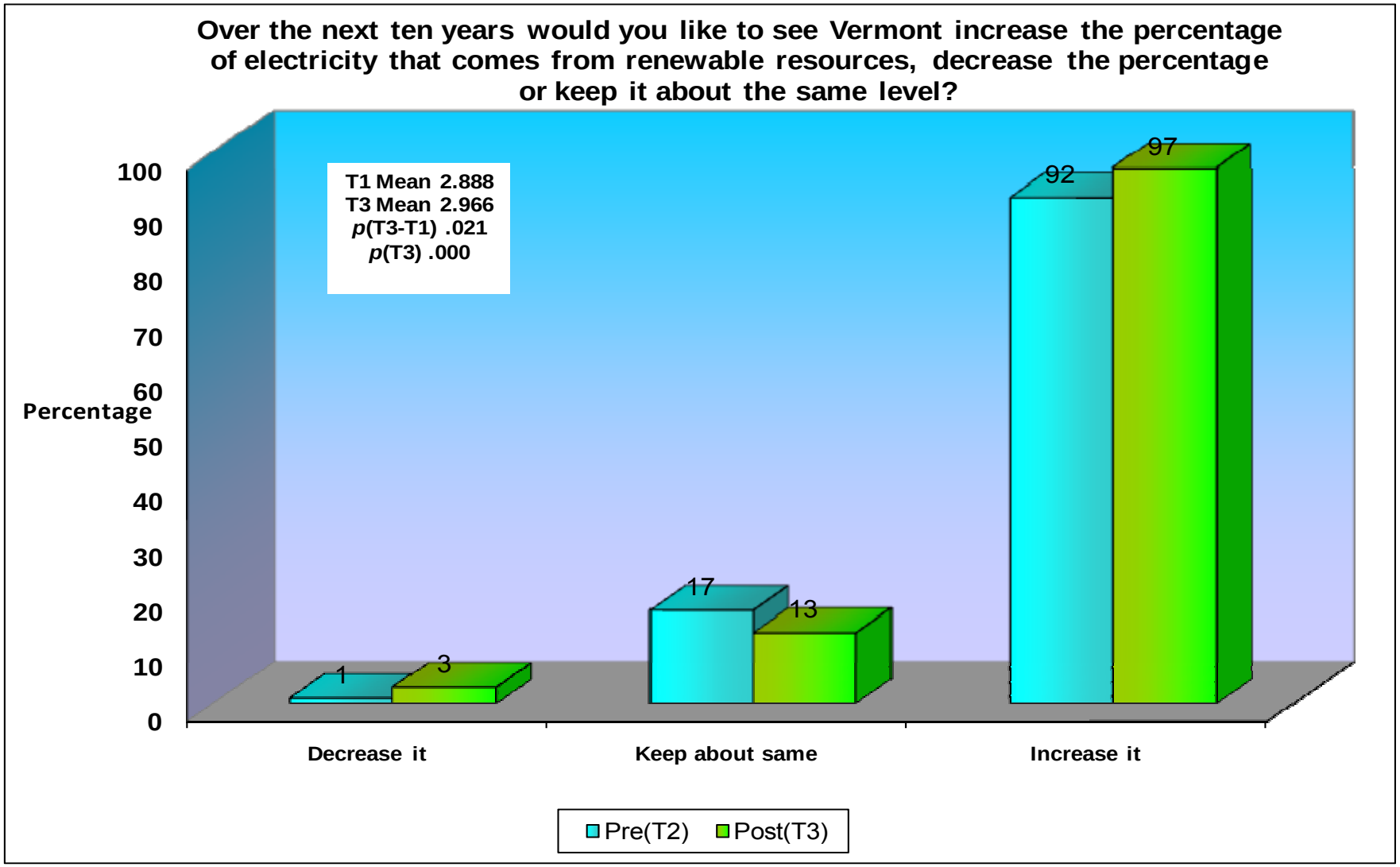


# Figure 16: What Minimum Percentage to Mandate from Renewables?

**If Vermont were to require that a minimum percentage of the electricity sold to Vermonters come from renewable sources, what percentage should that be?**

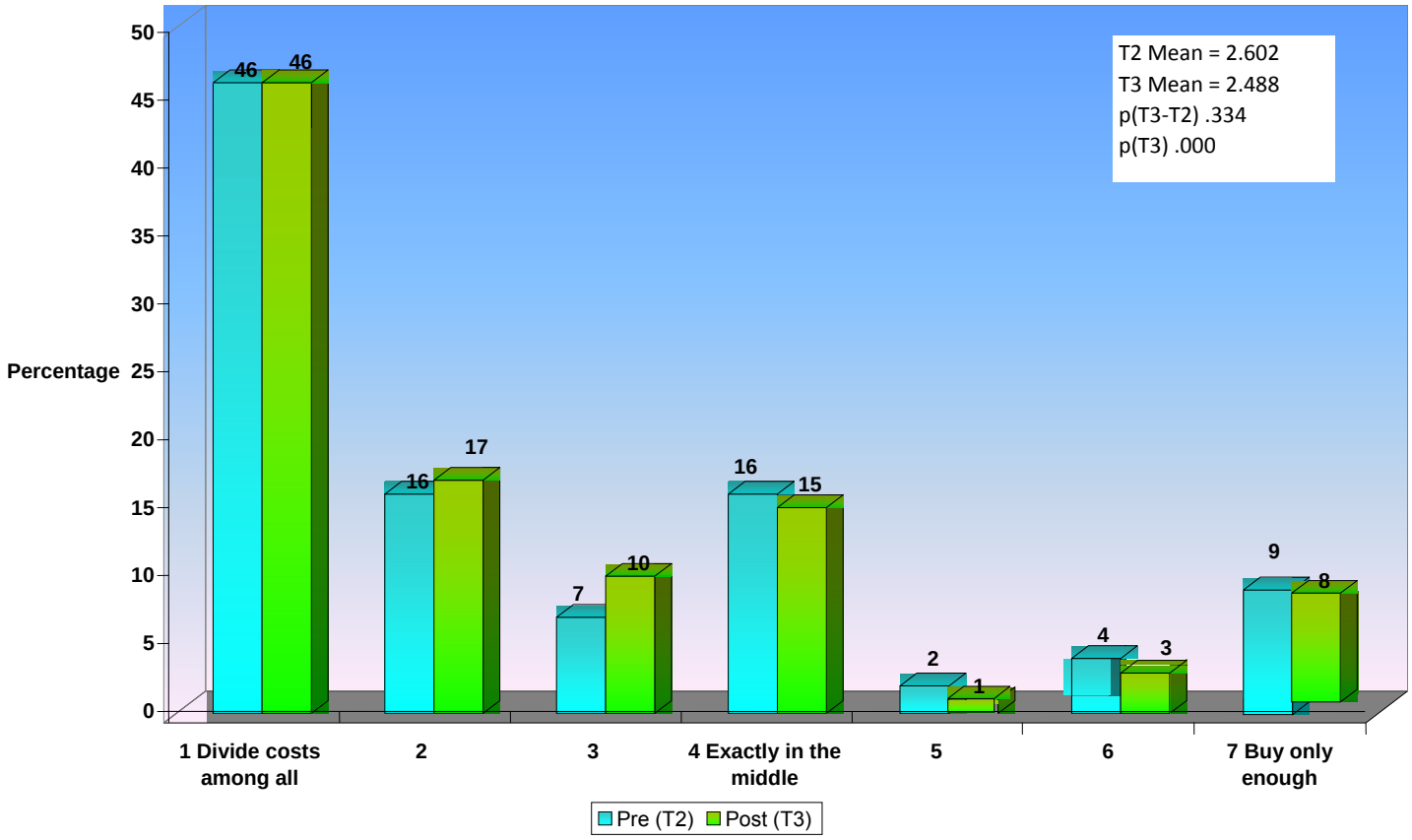


# Figure 17: Increase or Decrease Electricity from Renewables

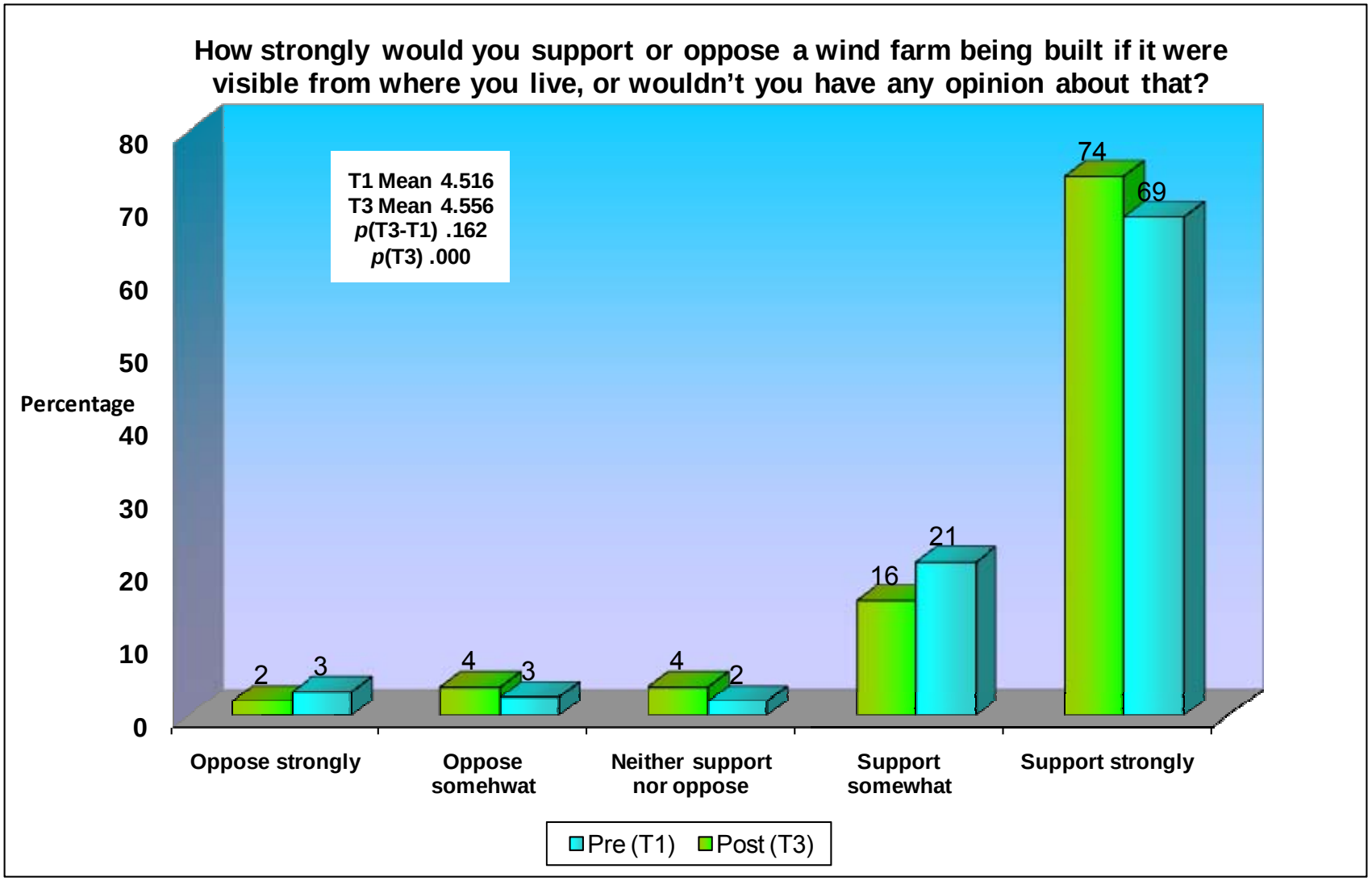


# Figure 18: Divide Costs among All vs. Buy Only Enough to Meet Demand

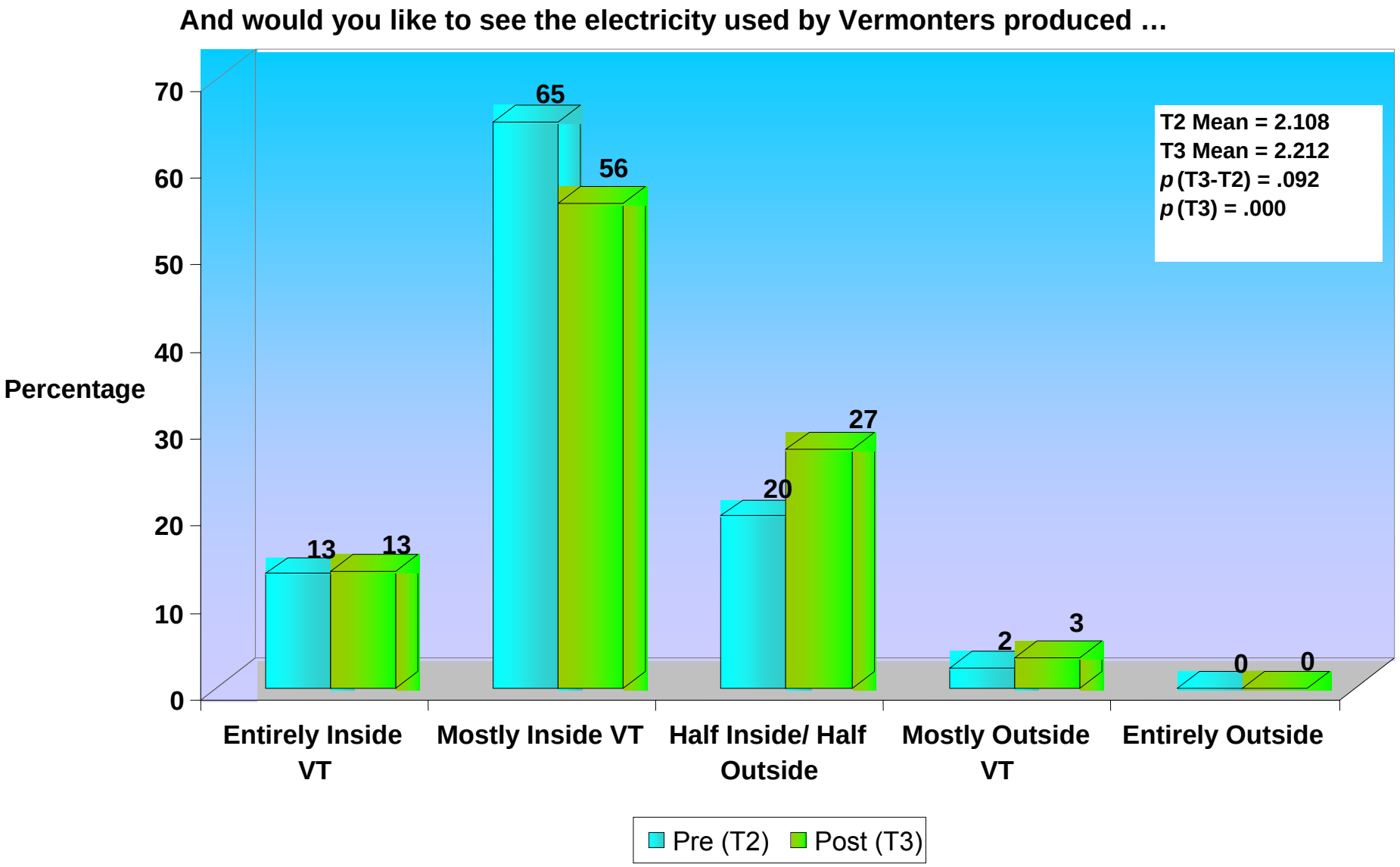
Some people think that the cost of additional renewable resources should be divided among all customers. Suppose these people are at one end of a 1-to-7 scale, at point 1. Other people think individual customers should be asked how much electricity from renewable resources they would like to buy and that Vermont should *only* acquire enough renewable energy to meet that demand even though all would benefit. Suppose these people are at the other end of the scale, at point 7. Where would you place yourself on this scale?



# Figure 19: Support or Oppose Visible Wind Farm

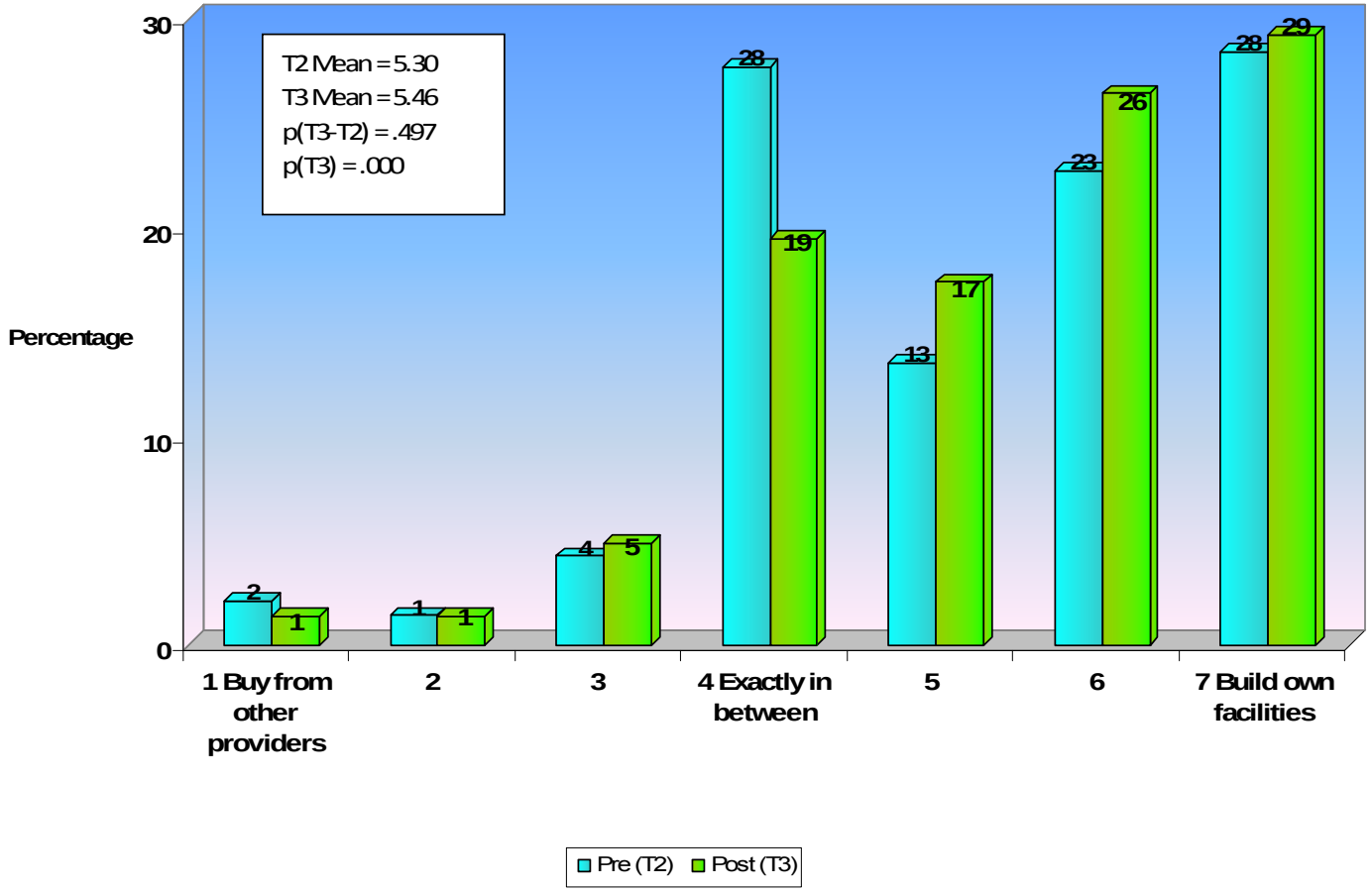


# Figure 20: Producing Electricity inside vs. outside VT

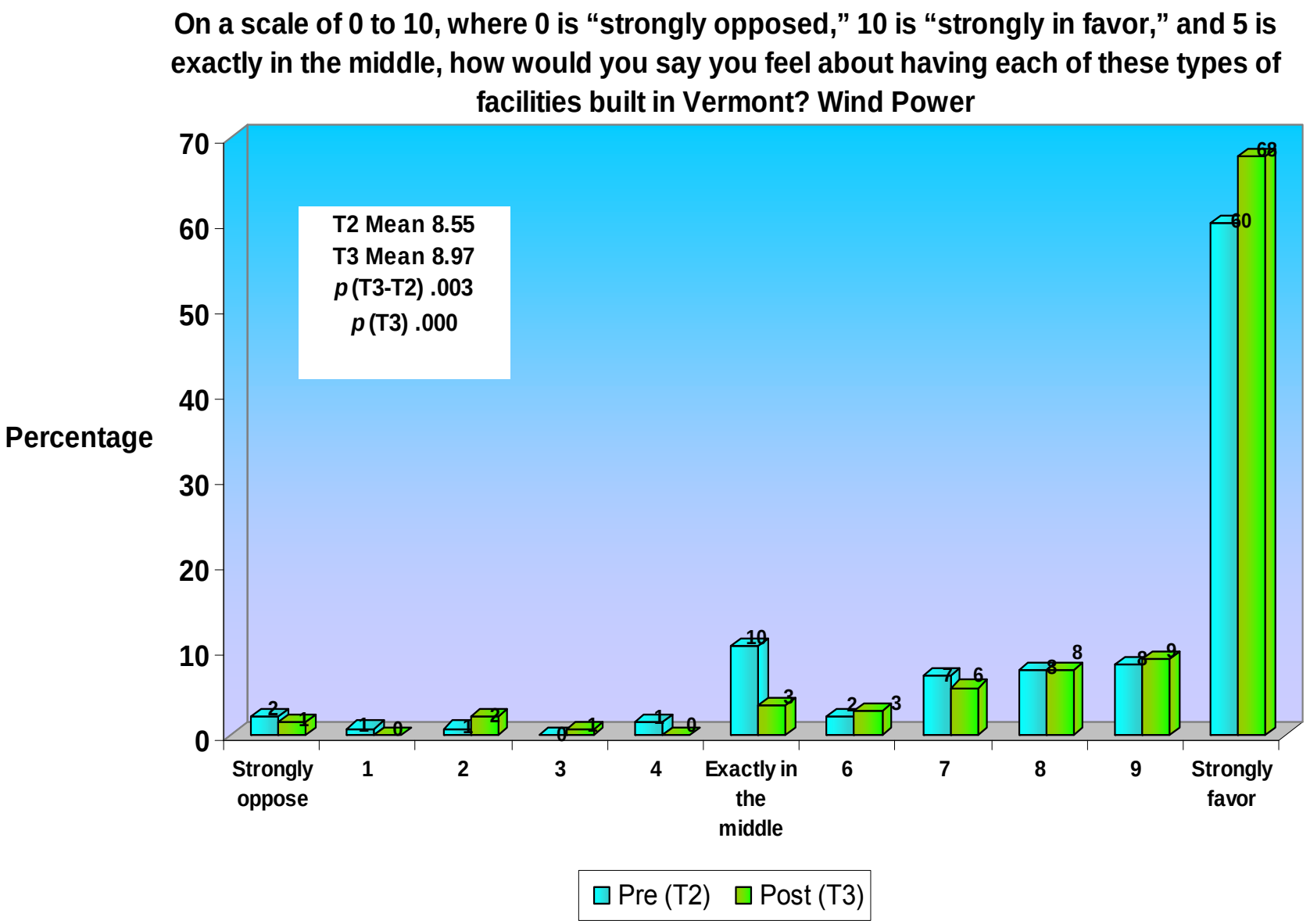


# Figure 21: Buying vs. Building

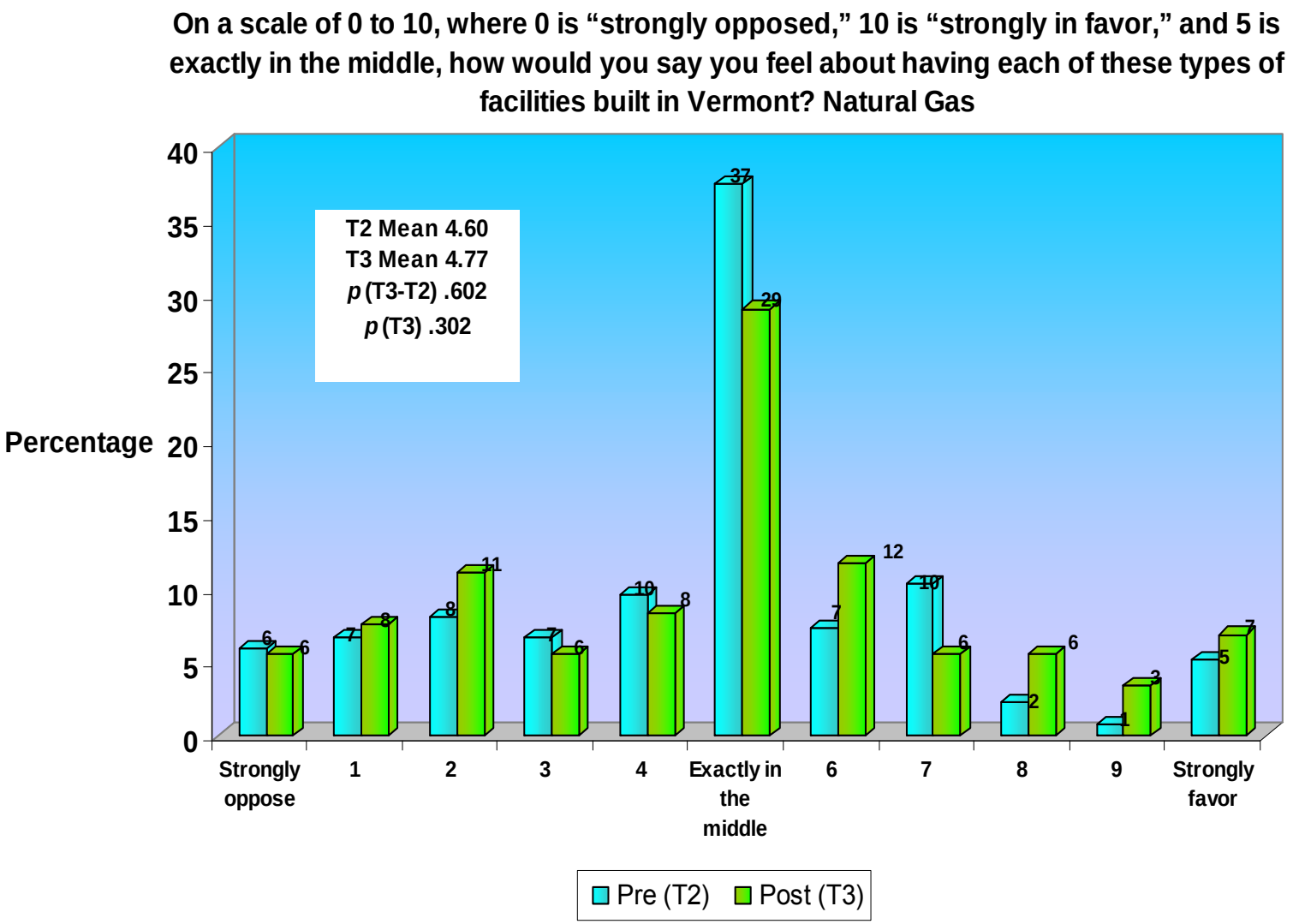
Some people think Vermont's electric utilities should meet the state's future energy needs by contracting to buy electricity from other providers. Suppose these people are at one end of a 1-to-7 scale, at point 1. Other people think Vermont's electric utilities should meet the state's future electricity needs by building their own facilities. Suppose these people are at the other end of the scale, at point 7. Again people who are exactly in-between are at point 4, and again of course other people have opinions at other points between 1 and 7. Where would you place yourself on this scale, or wouldn't you have any opinion about that?



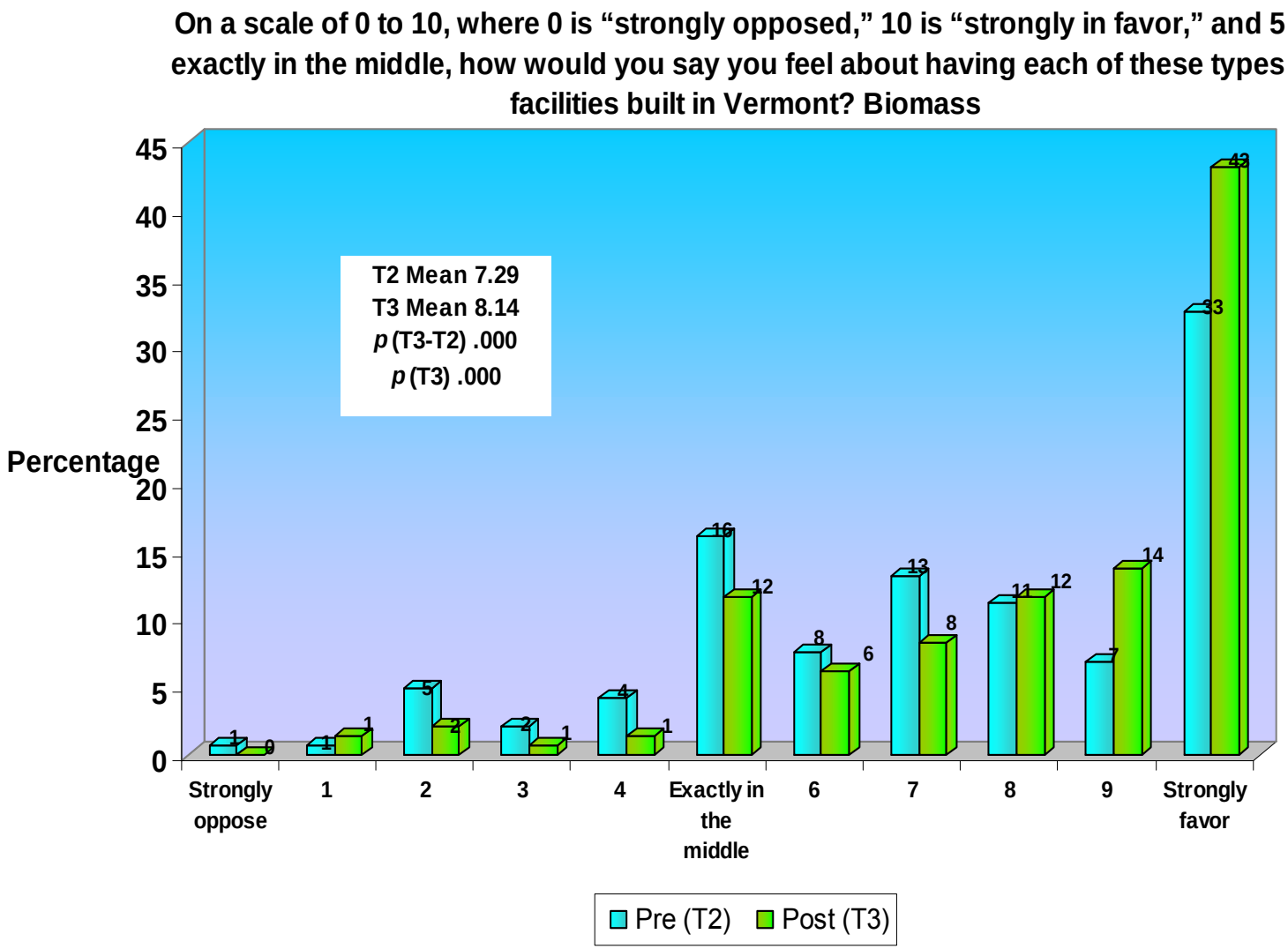
# Figure 22: Building Facilities for Wind Power in VT



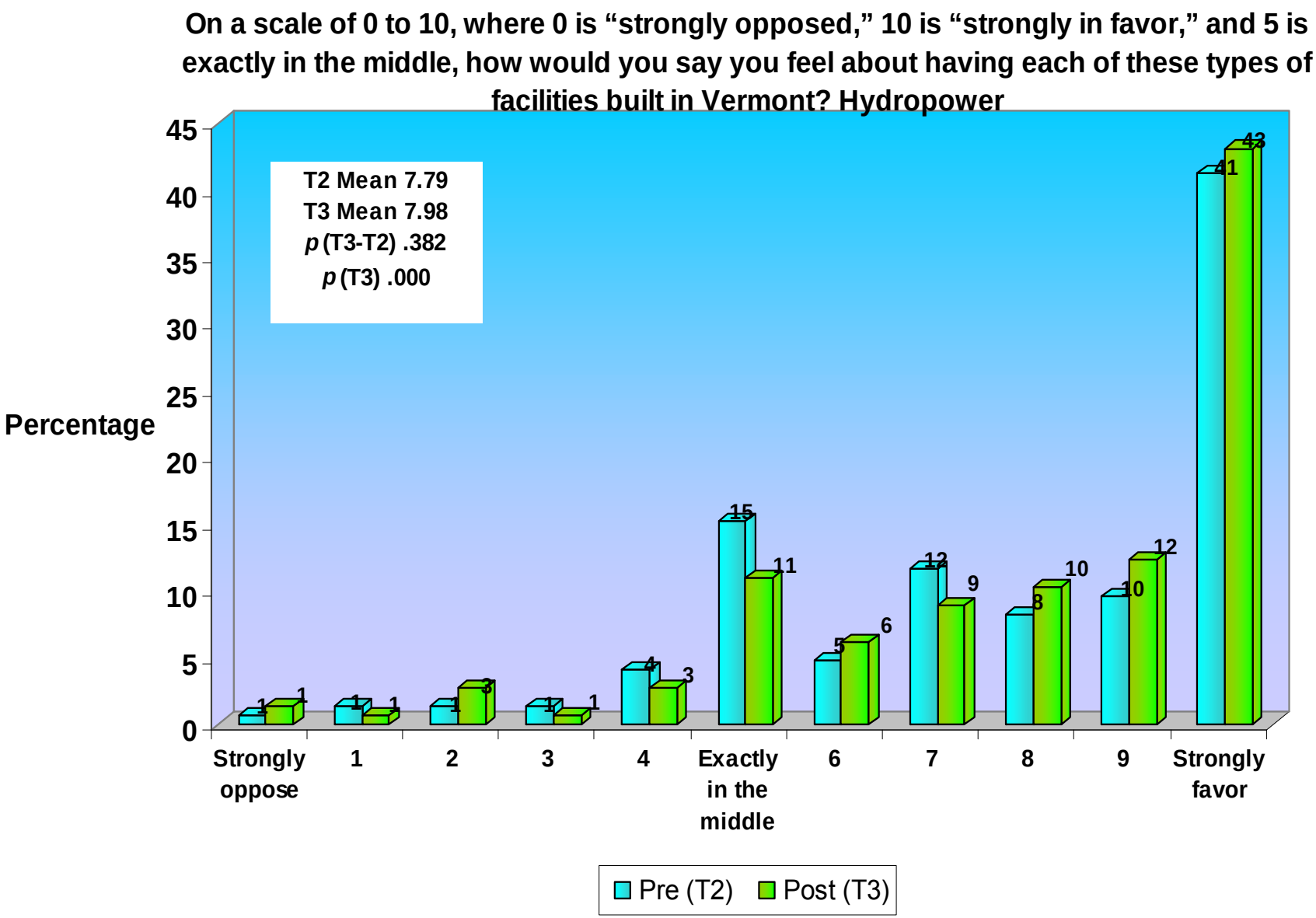
# Figure 23: Building Facilities for Natural Gas in VT



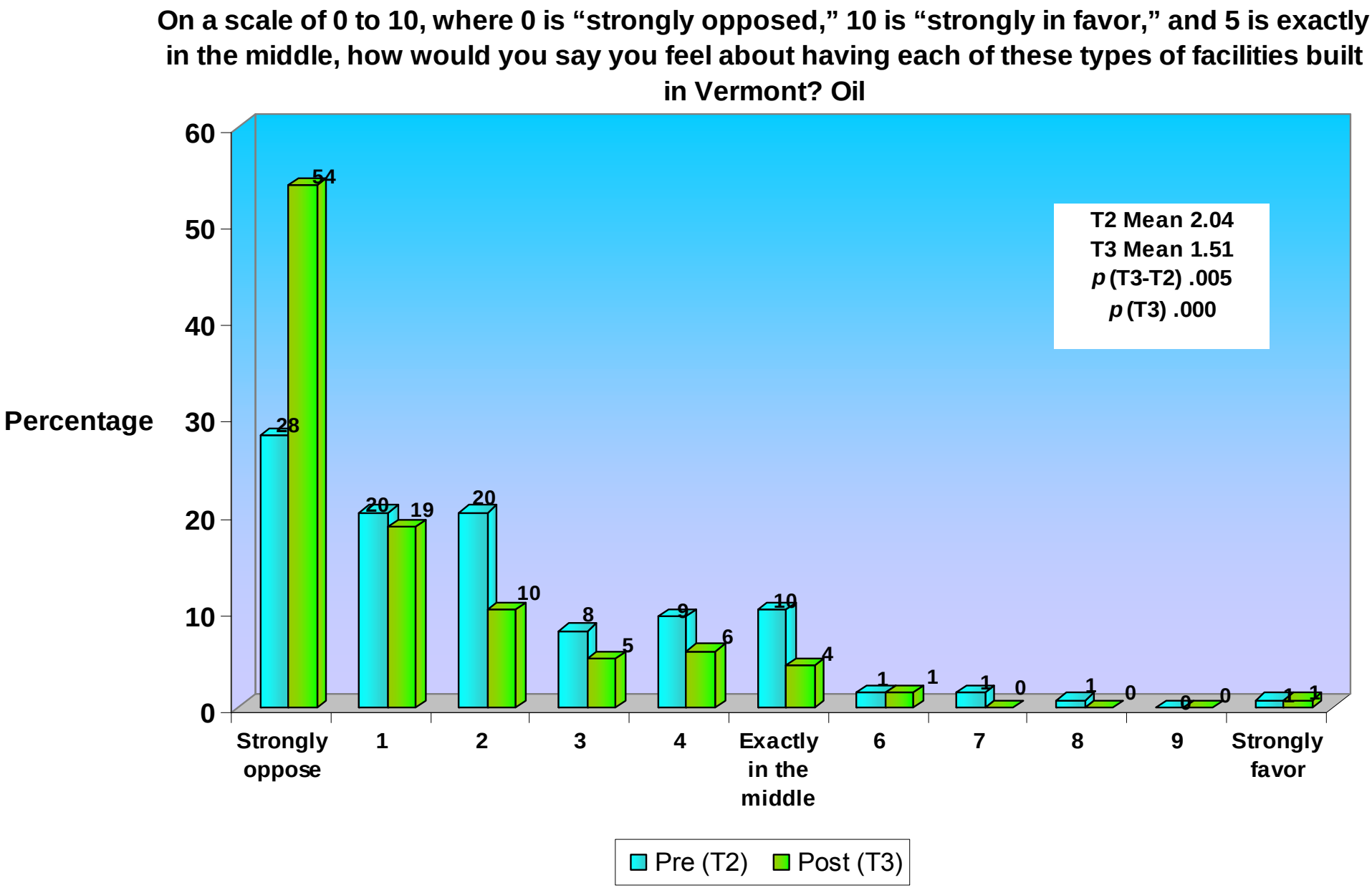
# Figure 24: Building Facilities for Biomass in VT



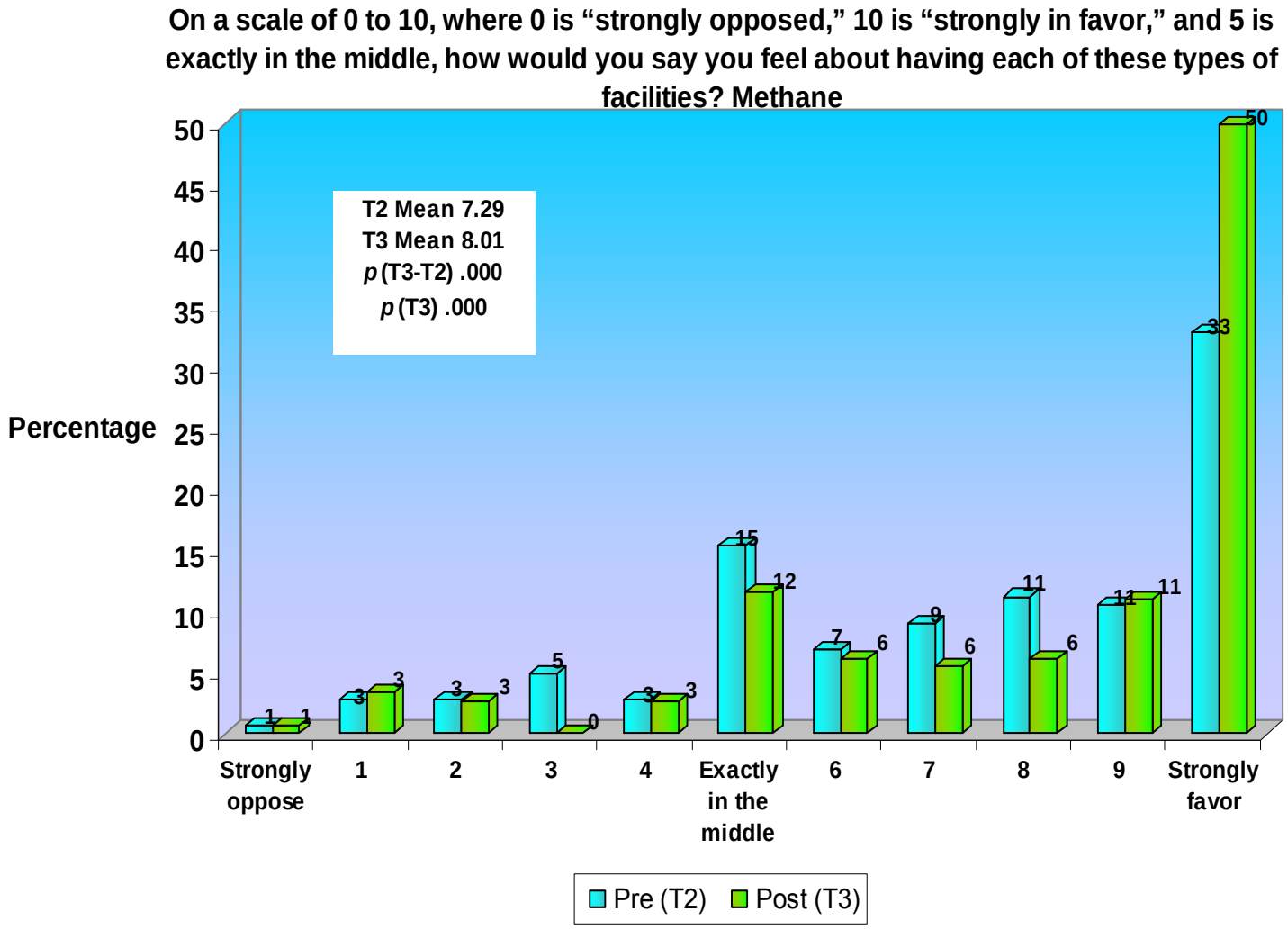
# Figure 25: Building Facilities for Hydropower in VT



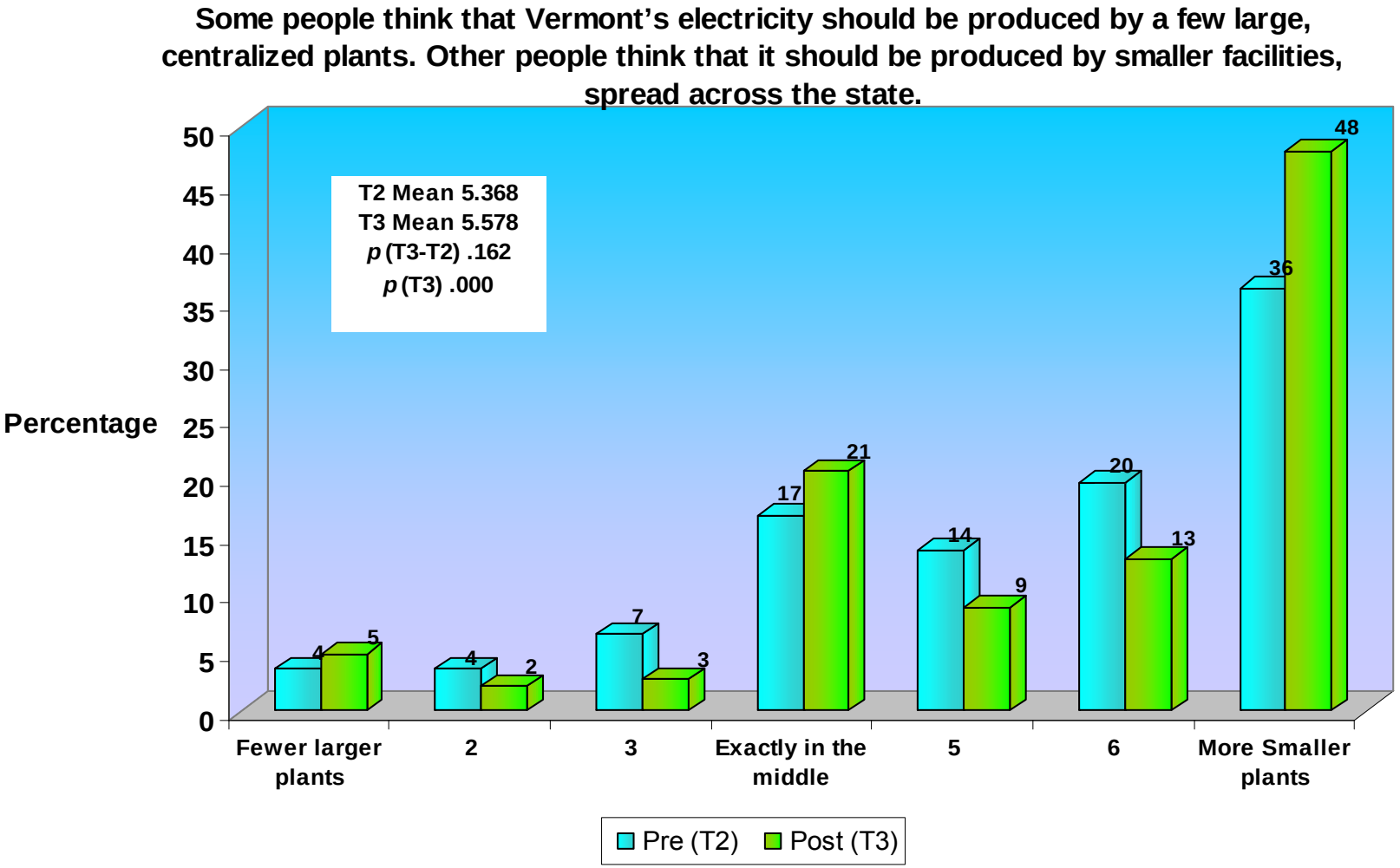
# Figure 26: Building Facilities for Oil in VT



# Figure 27: Building Facilities for Methane in VT



# Figure 28: A Few Large Plants vs. Many Small Ones



# Figure 29: Higher/Lower Costs Should Mean Higher/Lower Prices

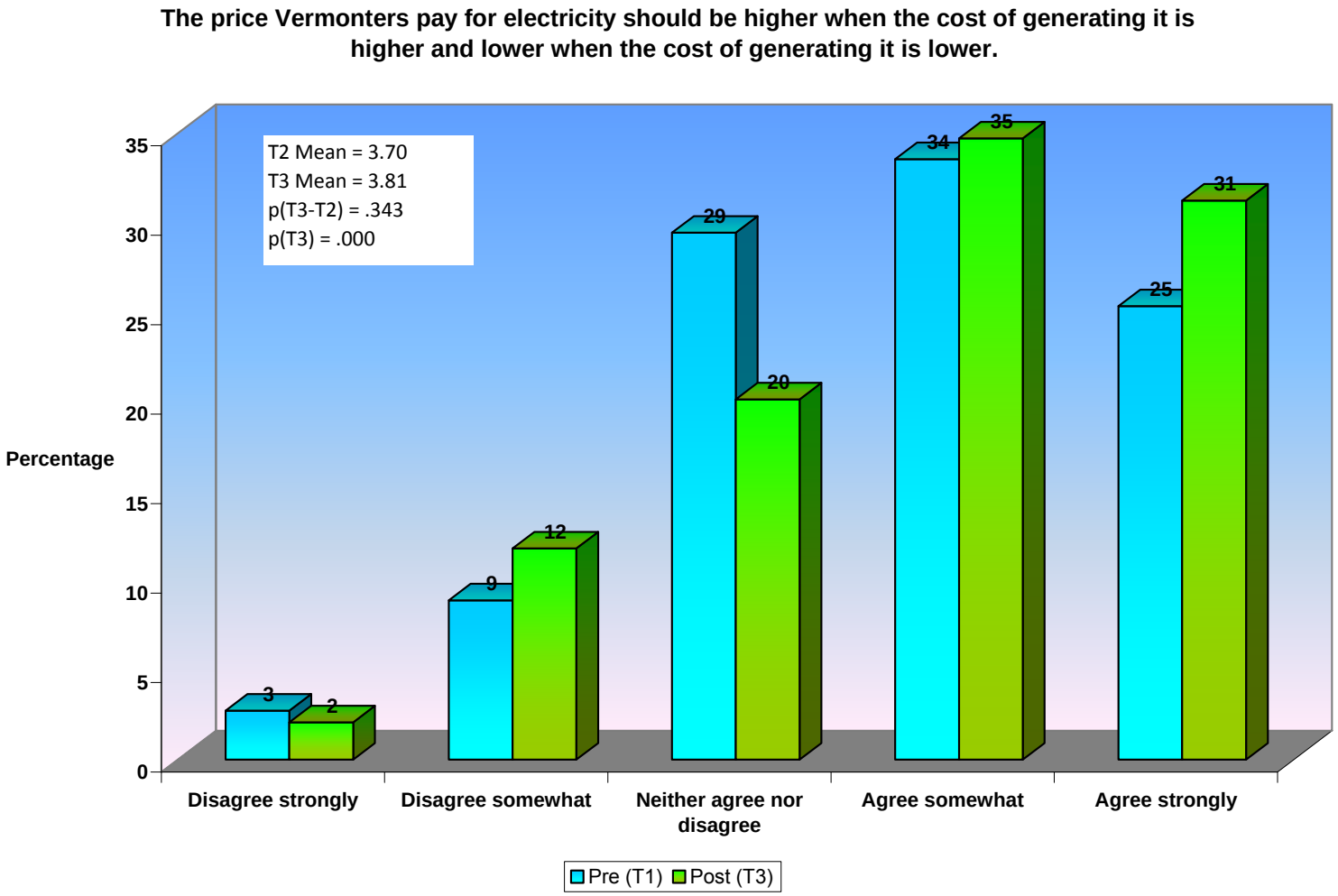
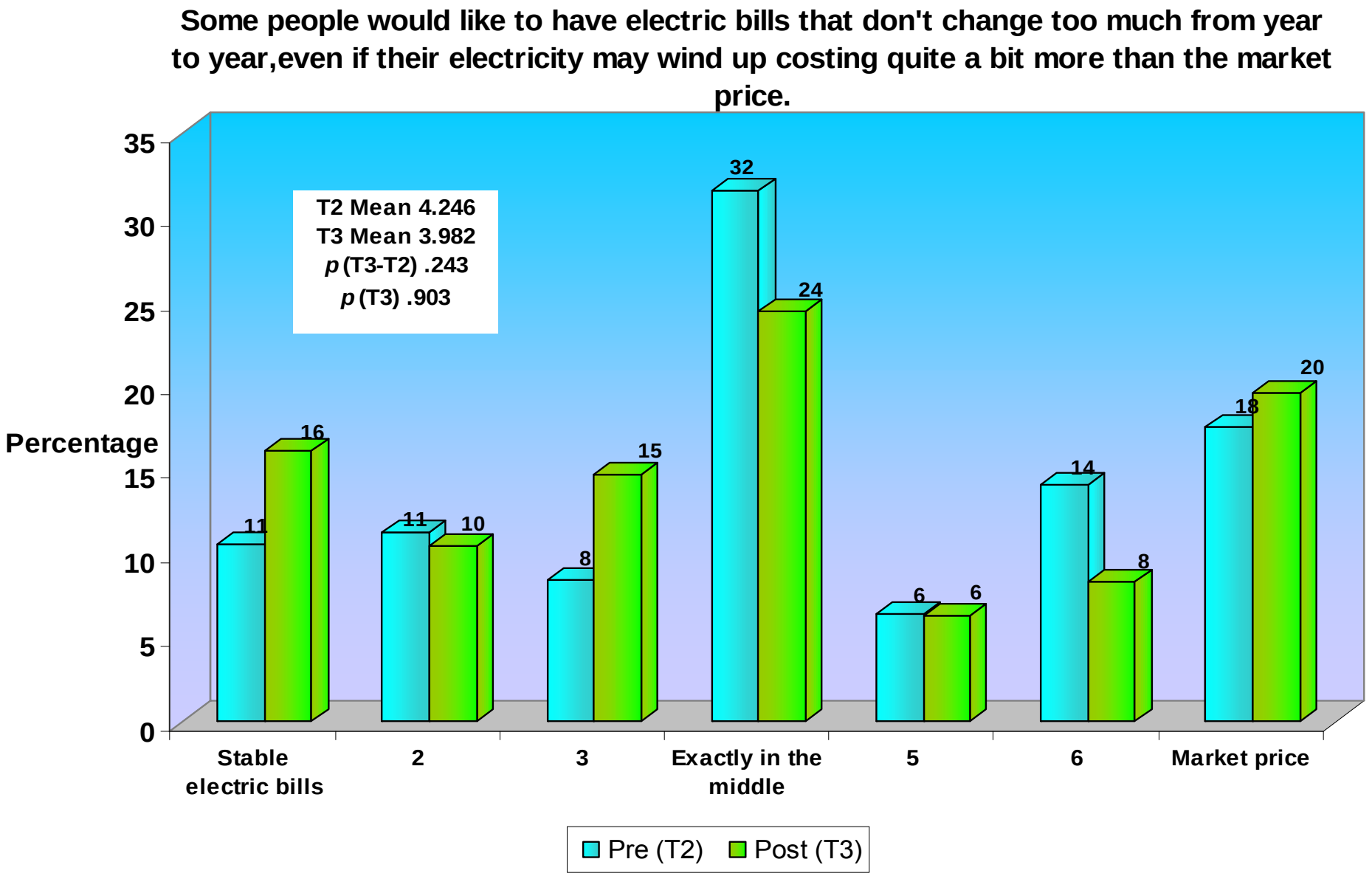
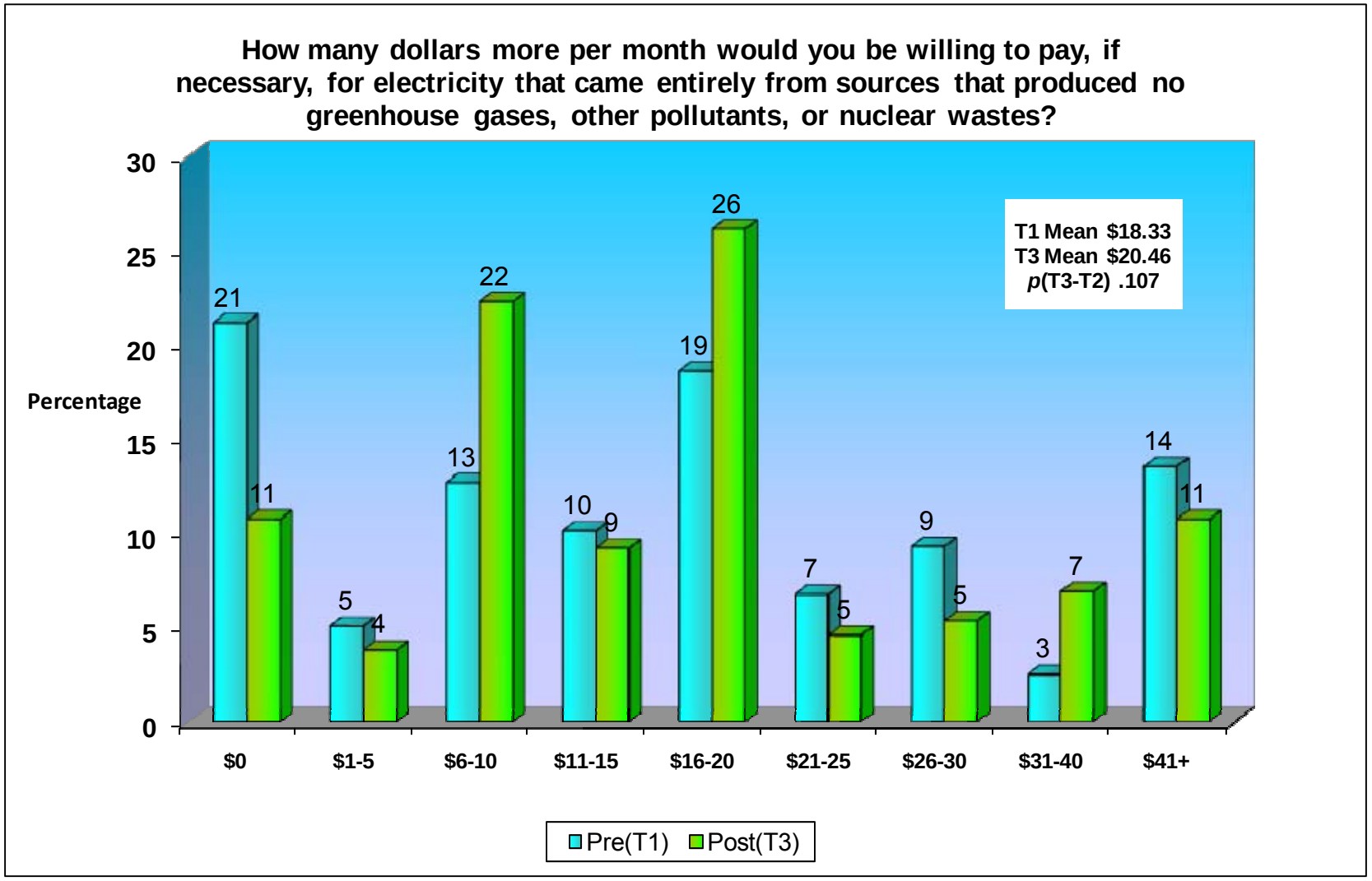


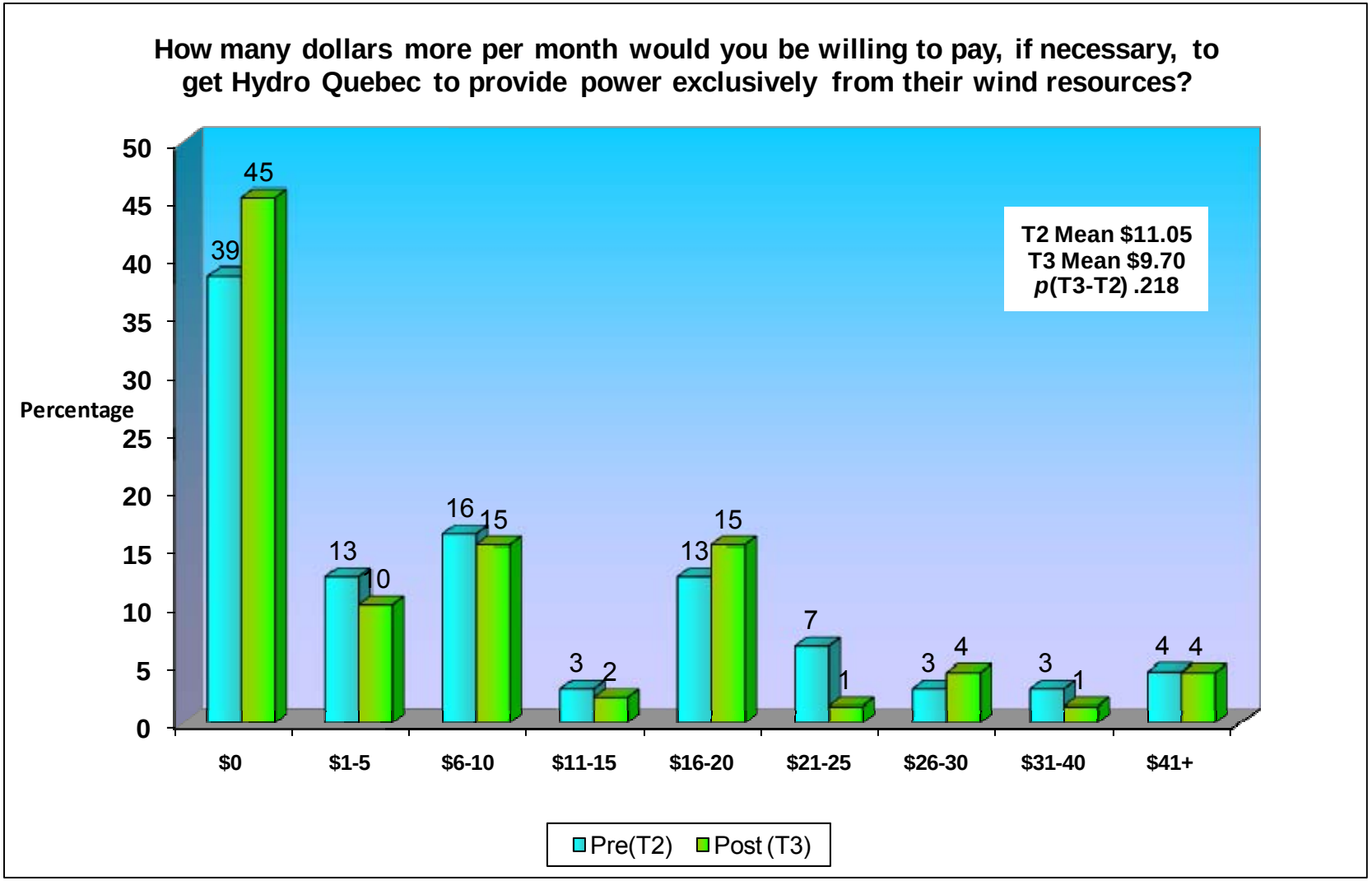
Figure 30: Stable Bills vs. Market Price



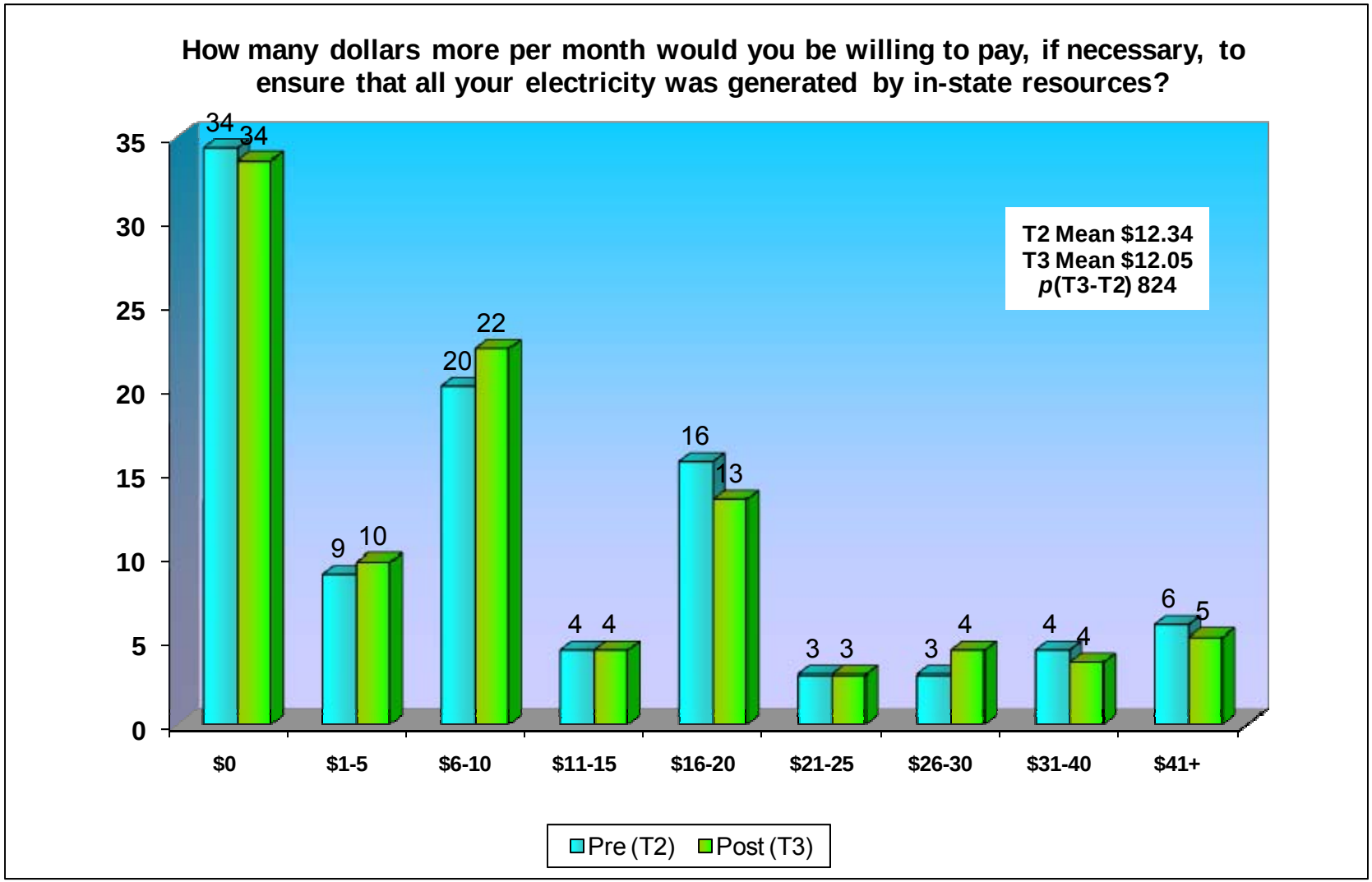
# Figure 31: Extra $/Month for No Greenhouse Gases



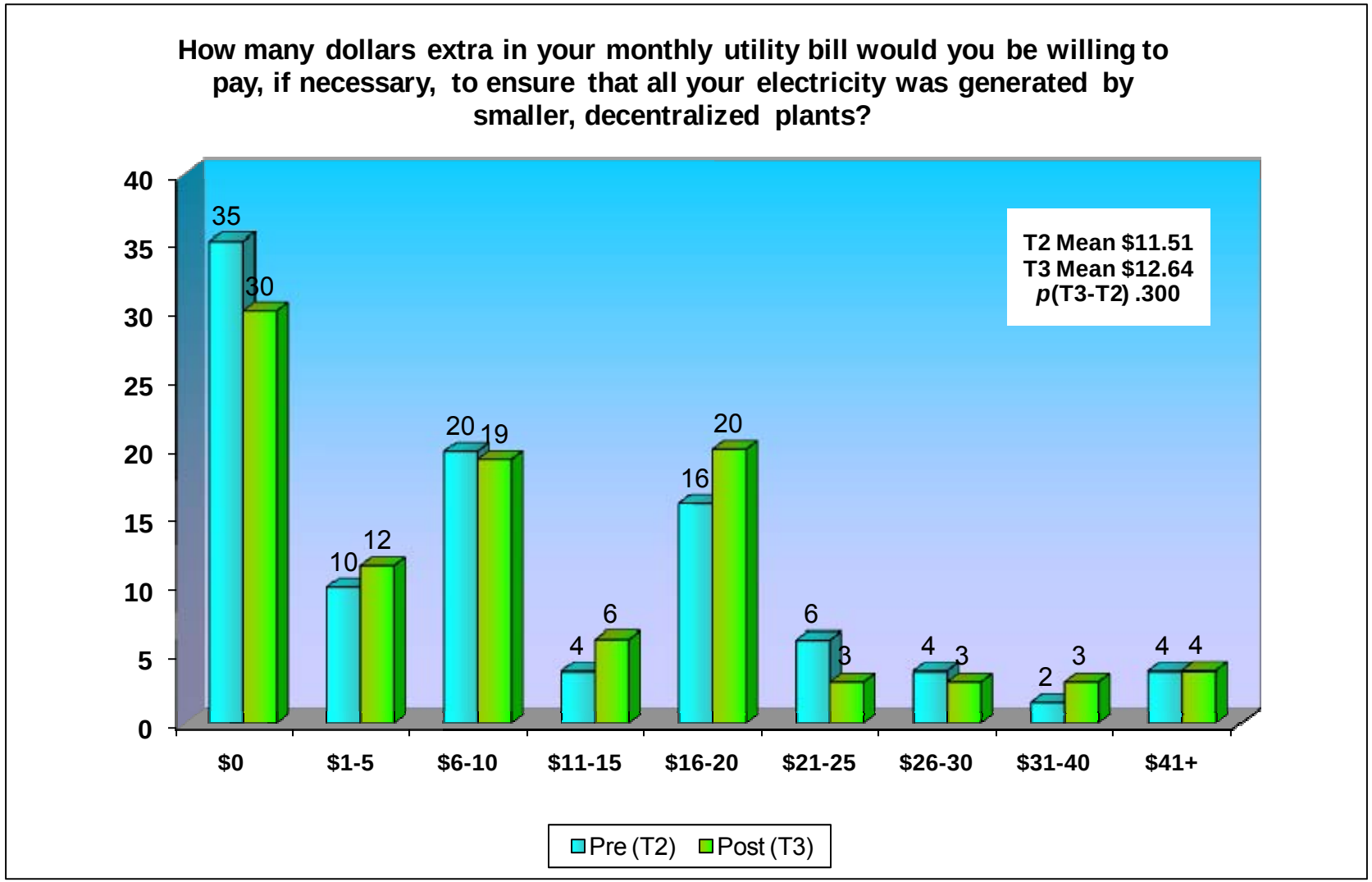
# Figure 32: Extra $/Month for Only Wind from Hydro Quebec



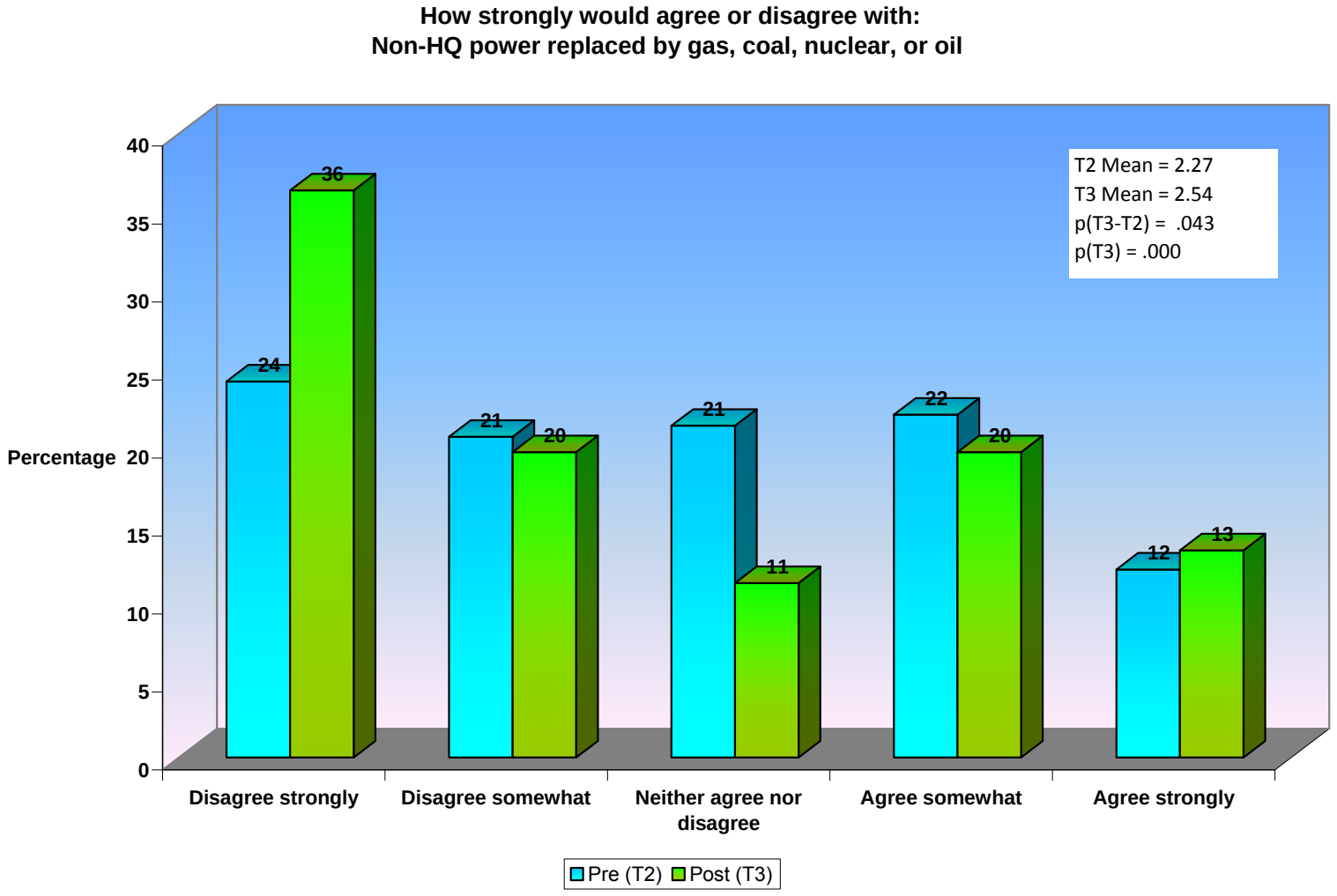
# Figure 33: Extra $/Month for Only In-State Electricity



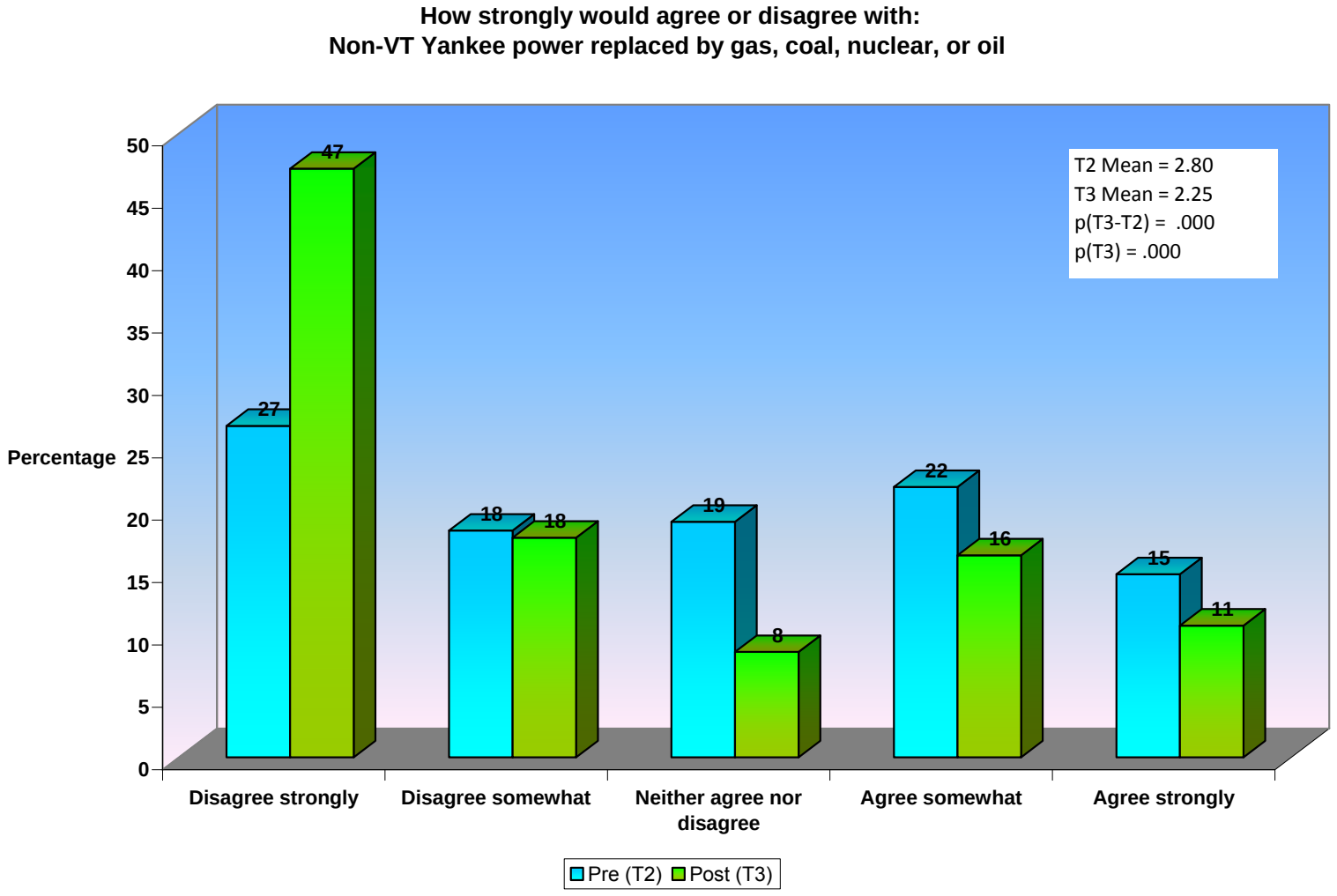
# Figure 34: Extra $/Month for All Electricity from Decentralized Plants



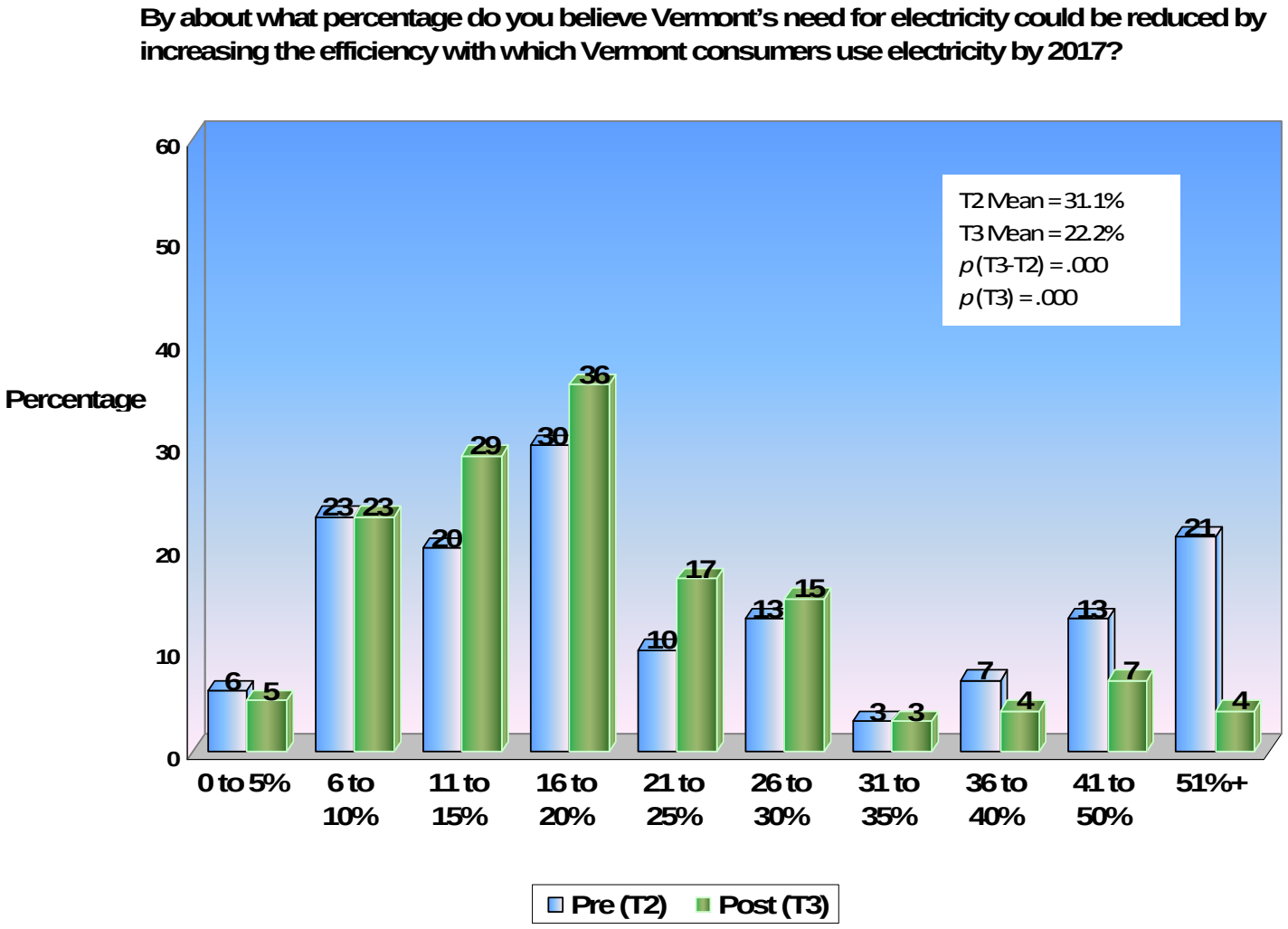
# Figure 35: Need to Replace Hydro Quebec Power by Gas, Coal, Nuclear, or Oil



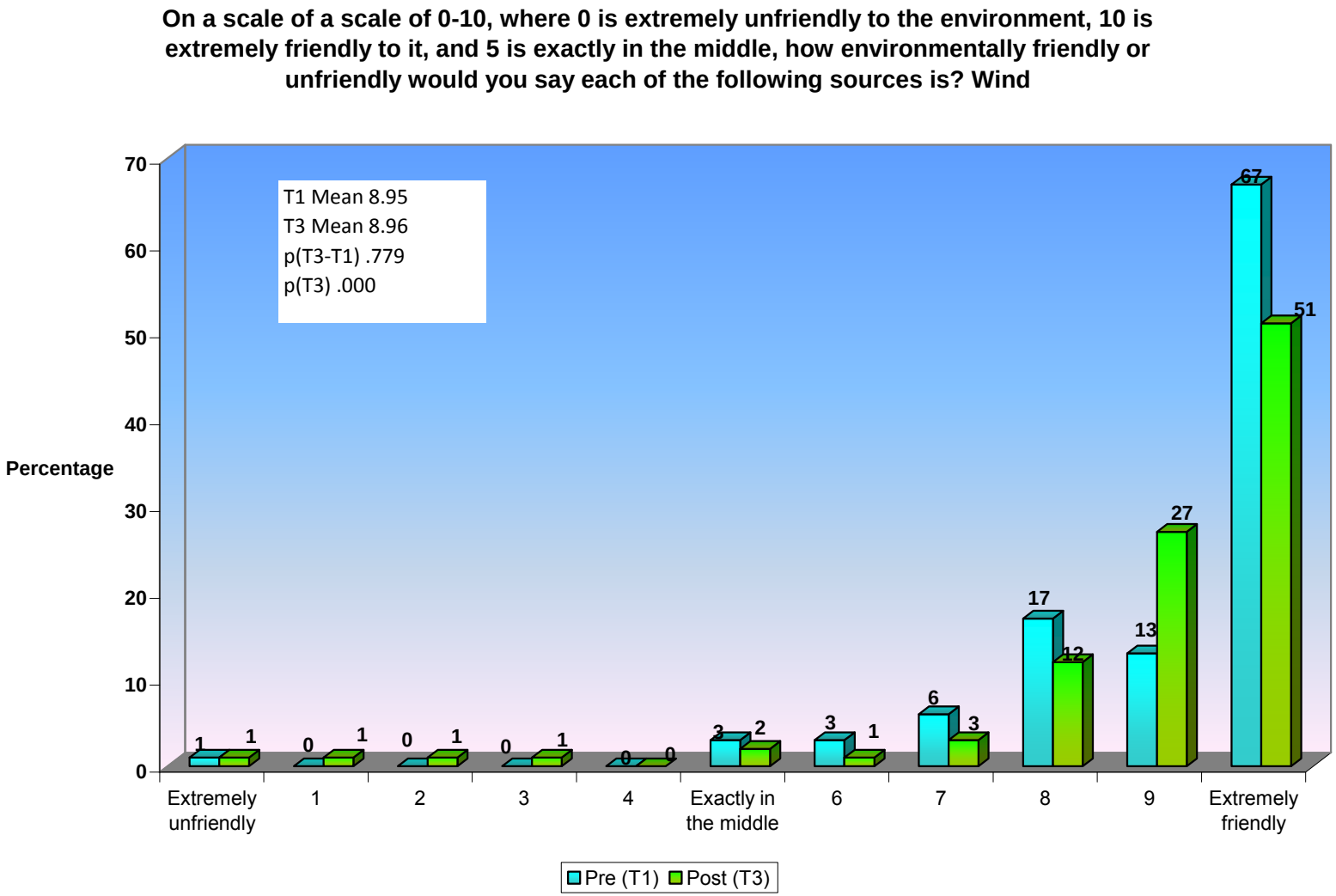
# Figure 36: Need to Replace VT Yankee Power by Gas, Coal, Nuclear, or Oil



# Figure 37: Percentage Reduction Achievable from Efficiency

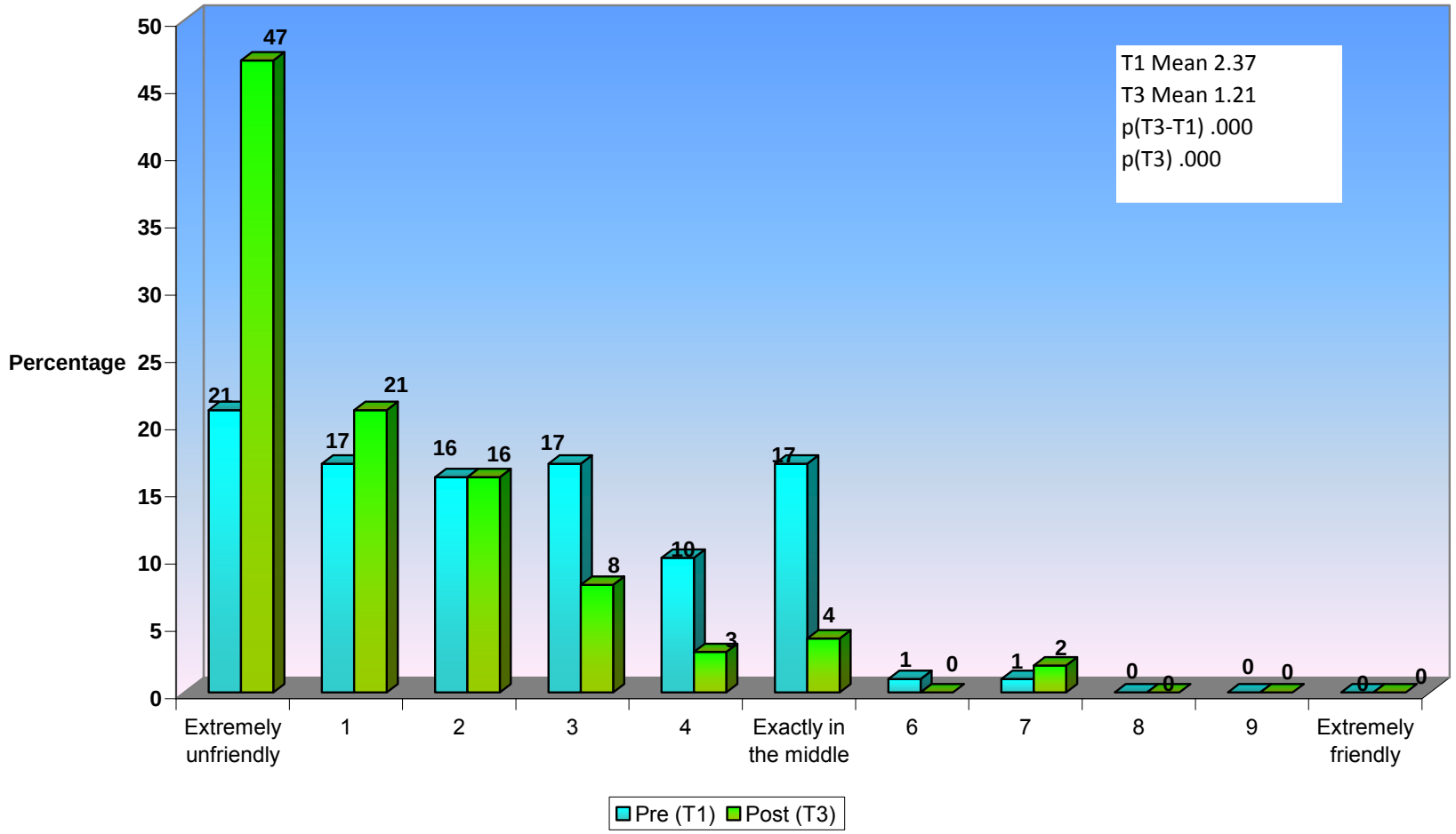


# Figure 38: How Environmentally Friendly or Unfriendly: Wind



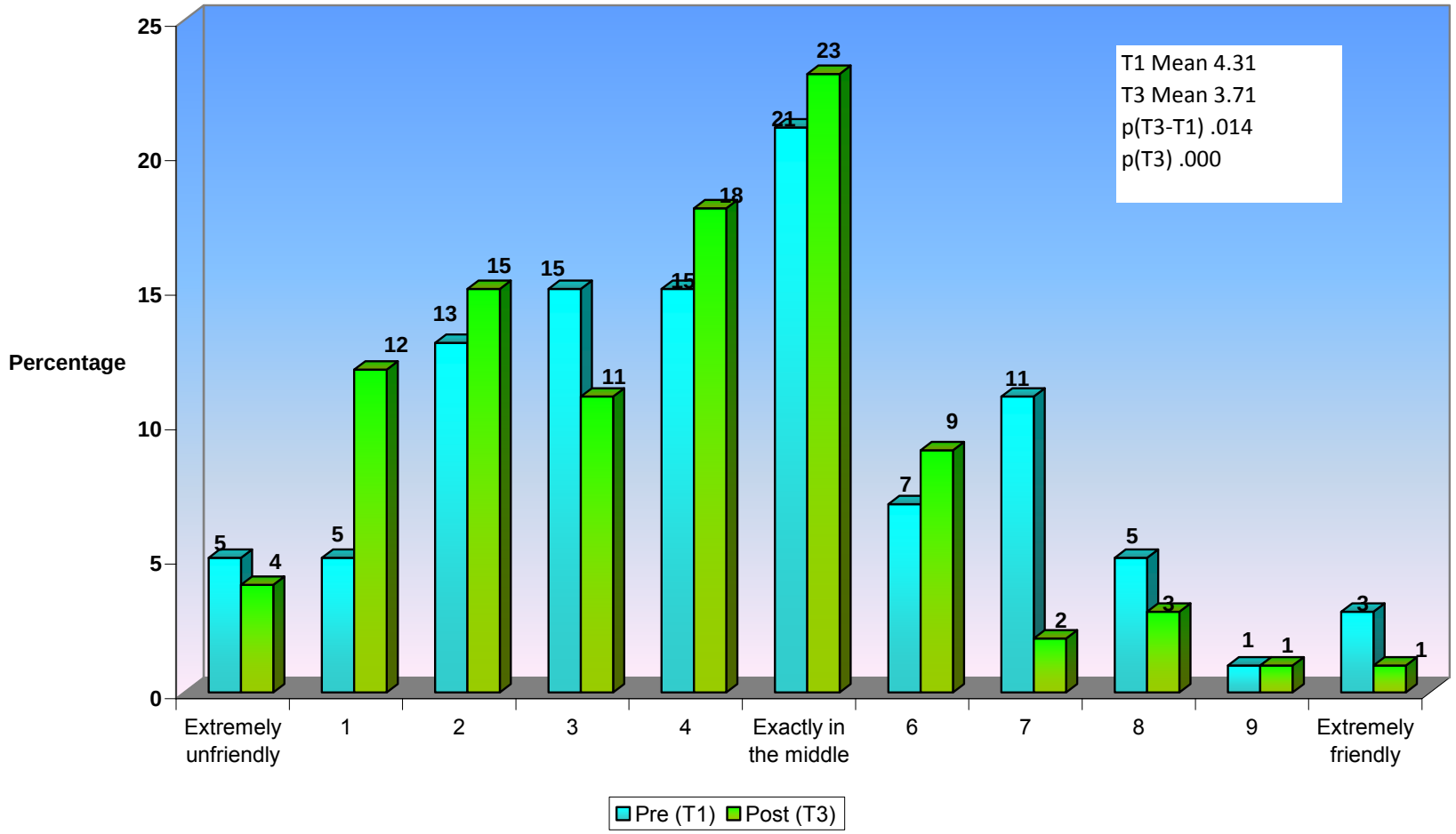
# Figure 39: How Environmentally Friendly or Unfriendly: Oil

**On a scale of a scale of 0-10, where 0 is extremely unfriendly to the environment, 10 is extremely friendly to it, and 5 is exactly in the middle, how environmentally friendly or unfriendly would you say each of the following sources is? Oil**

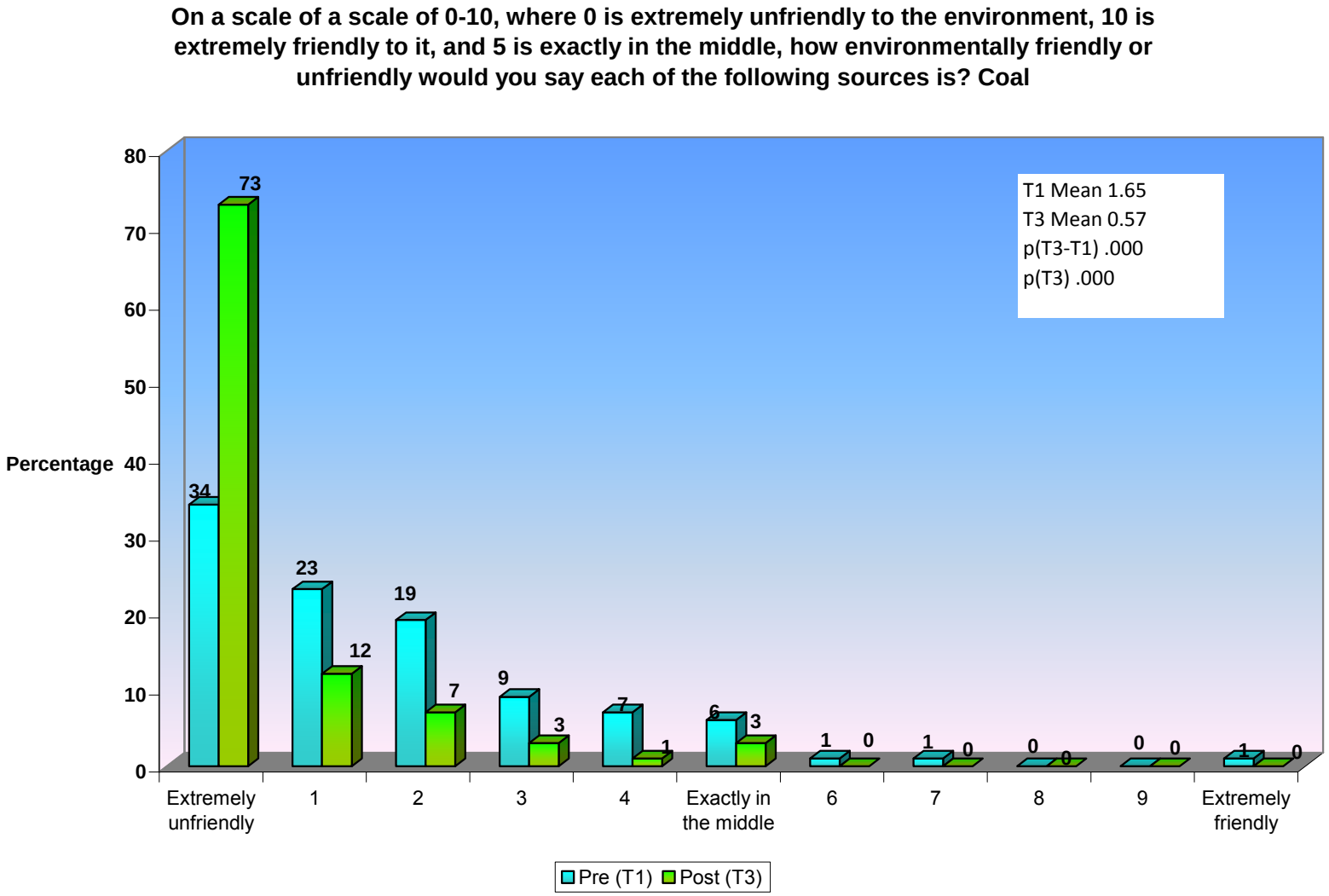


# Figure 40: How Environmentally Friendly or Unfriendly: Natural Gas

**On a scale of a scale of 0-10, where 0 is extremely unfriendly to the environment, 10 is extremely friendly to it, and 5 is exactly in the middle, how environmentally friendly or unfriendly would you say each of the following sources is? Natural Gas**

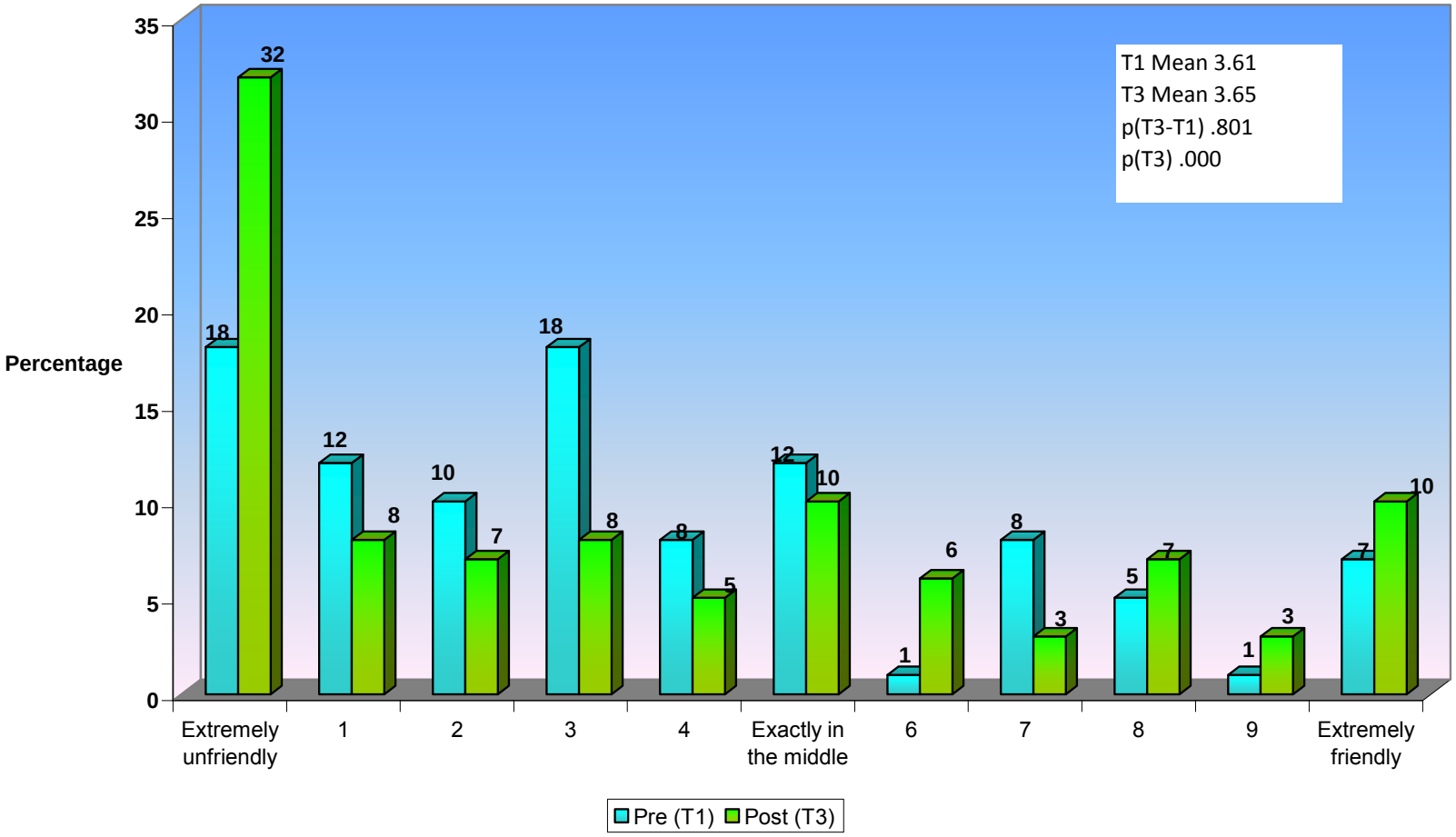


# Figure 41: How Environmentally Friendly or Unfriendly: Coal



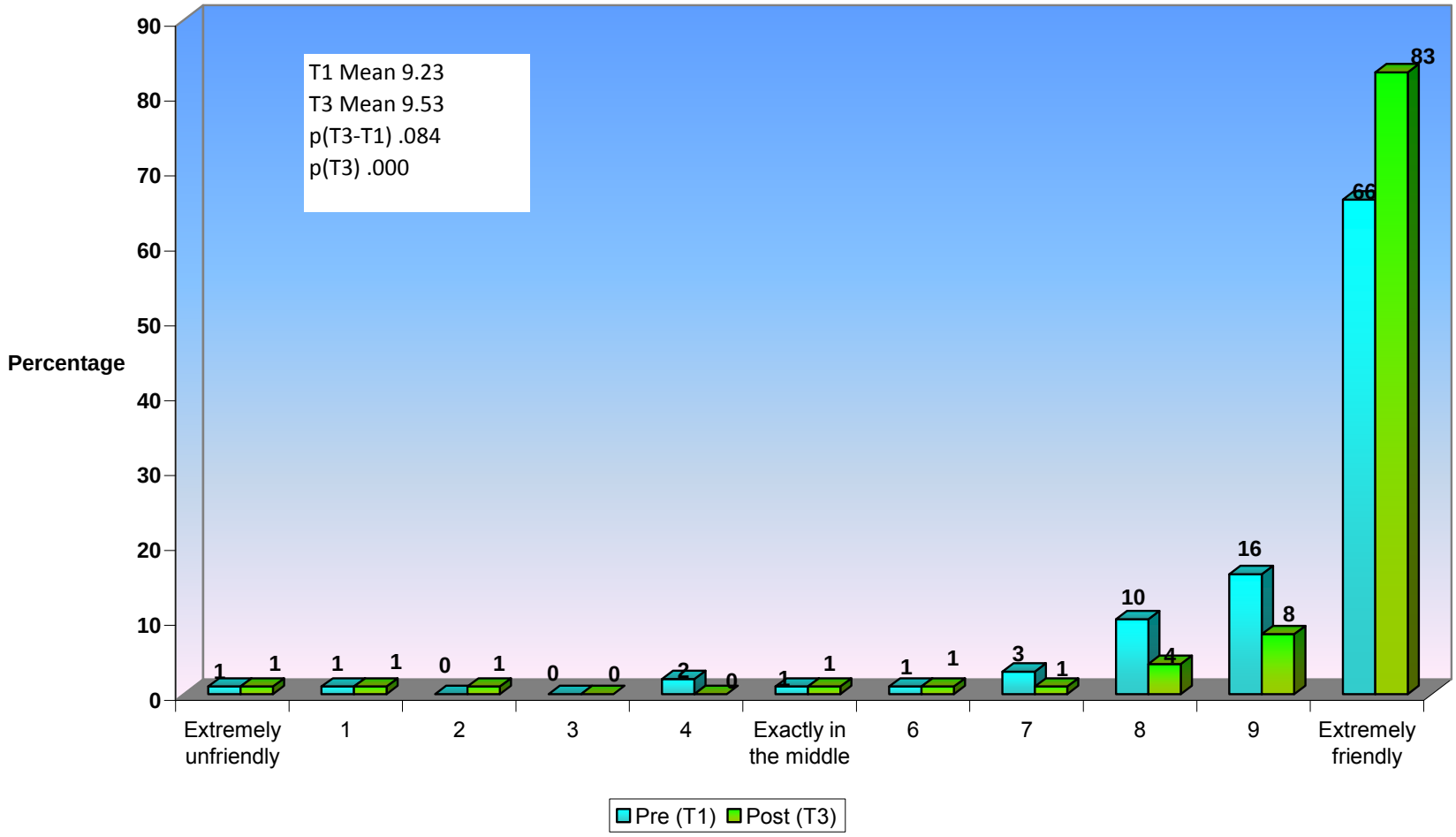
# Figure 42: How Environmentally Friendly or Unfriendly: Nuclear

**On a scale of a scale of 0-10, where 0 is extremely unfriendly to the environment, 10 is extremely friendly to it, and 5 is exactly in the middle, how environmentally friendly or unfriendly would you say each of the following sources is? Nuclear**



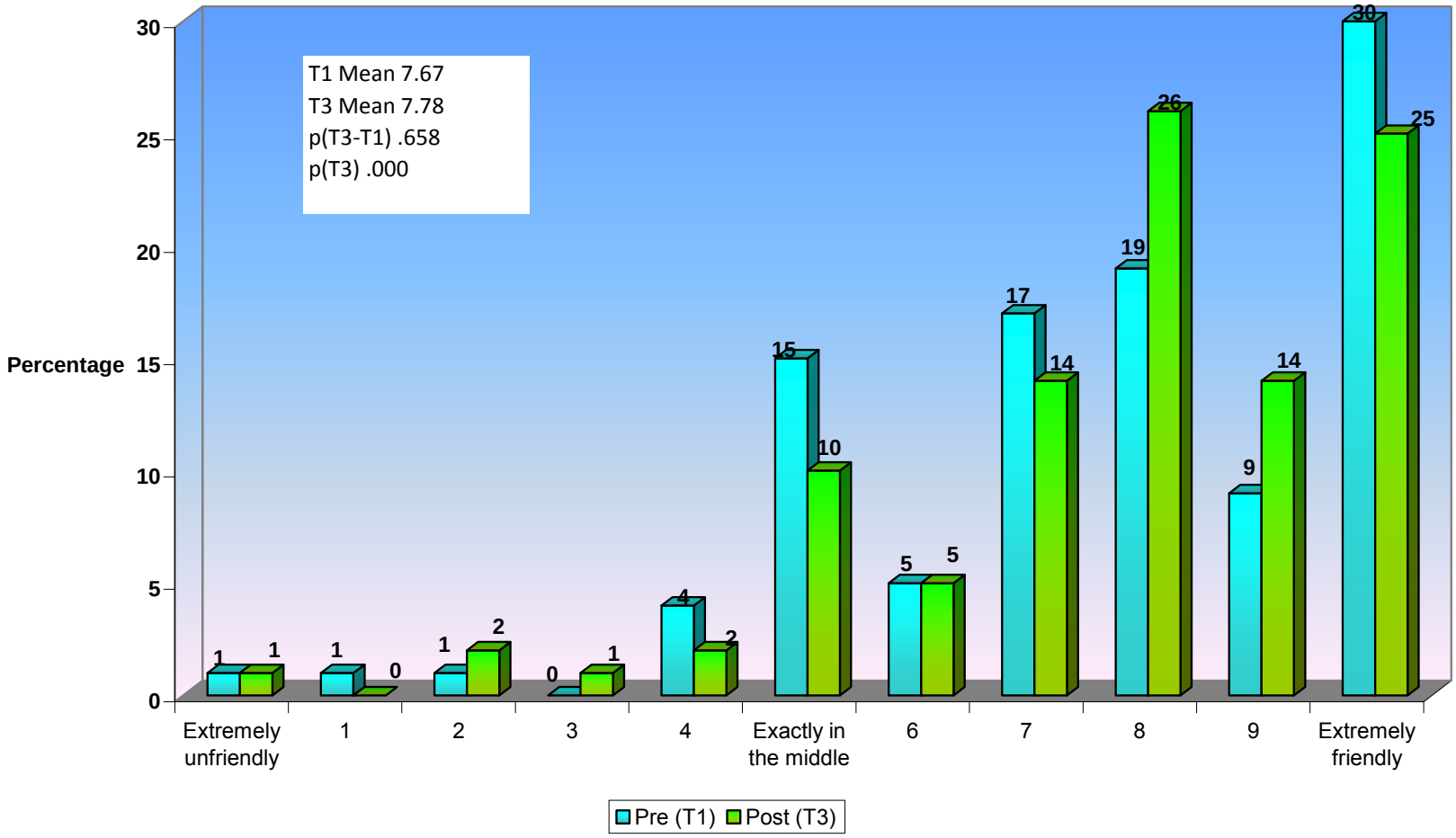
# Figure 43: How Environmentally Friendly or Unfriendly: Solar

**On a scale of a scale of 0-10, where 0 is extremely unfriendly to the environment, 10 is extremely friendly to it, and 5 is exactly in the middle, how environmentally friendly or unfriendly would you say each of the following sources is? Solar**



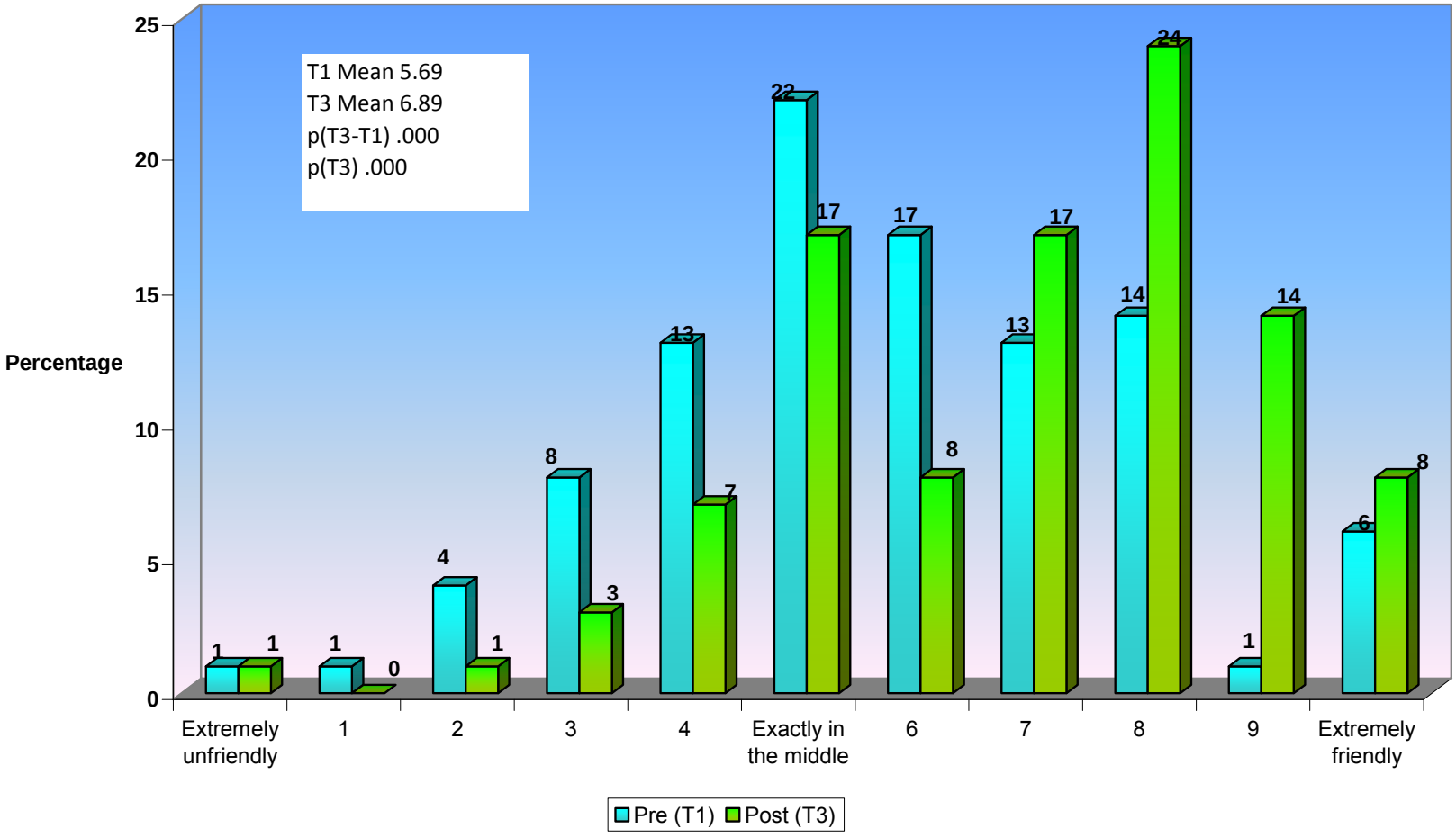
# Figure 44: How Environmentally Friendly or Unfriendly: Hydro

**On a scale of a scale of 0-10, where 0 is extremely unfriendly to the environment, 10 is extremely friendly to it, and 5 is exactly in the middle, how environmentally friendly or unfriendly would you say each of the following sources is? Hydro**



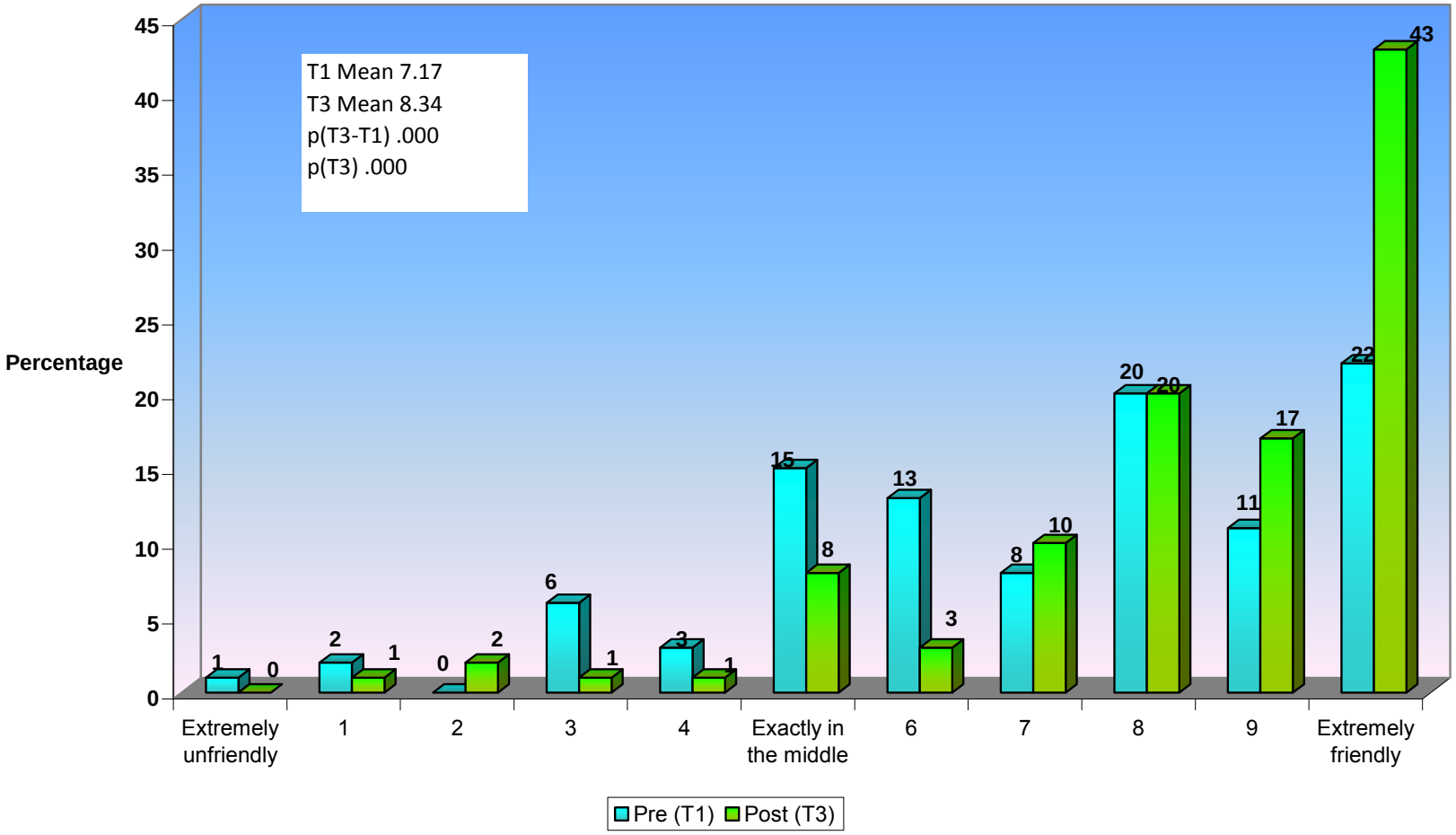
# Figure 45: How Environmentally Friendly or Unfriendly: Wood

**On a scale of a scale of 0-10, where 0 is extremely unfriendly to the environment, 10 is extremely friendly to it, and 5 is exactly in the middle, how environmentally friendly or unfriendly would you say each of the following sources is? Wood**

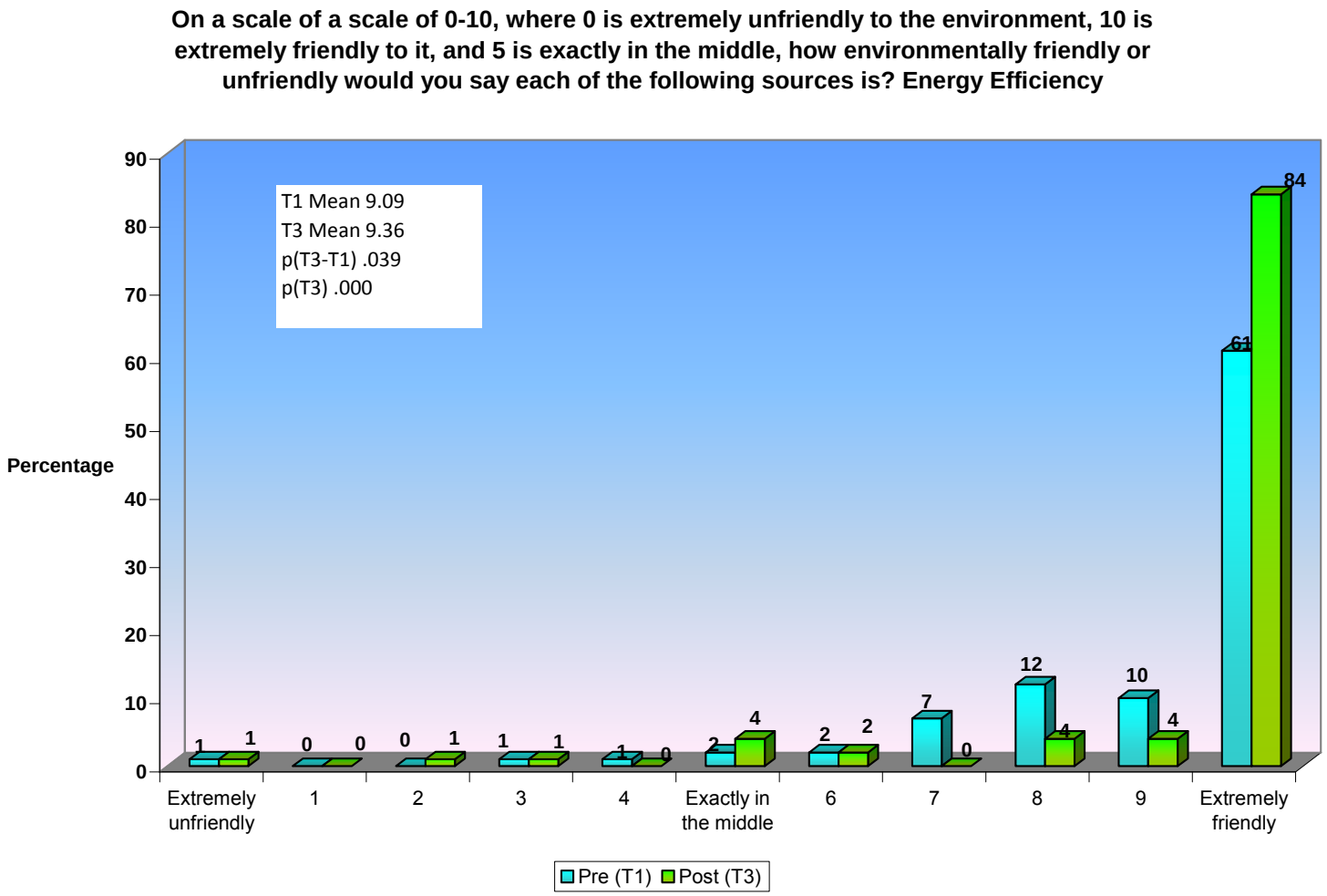


# Figure 46: How Environmentally Friendly or Unfriendly: Methane

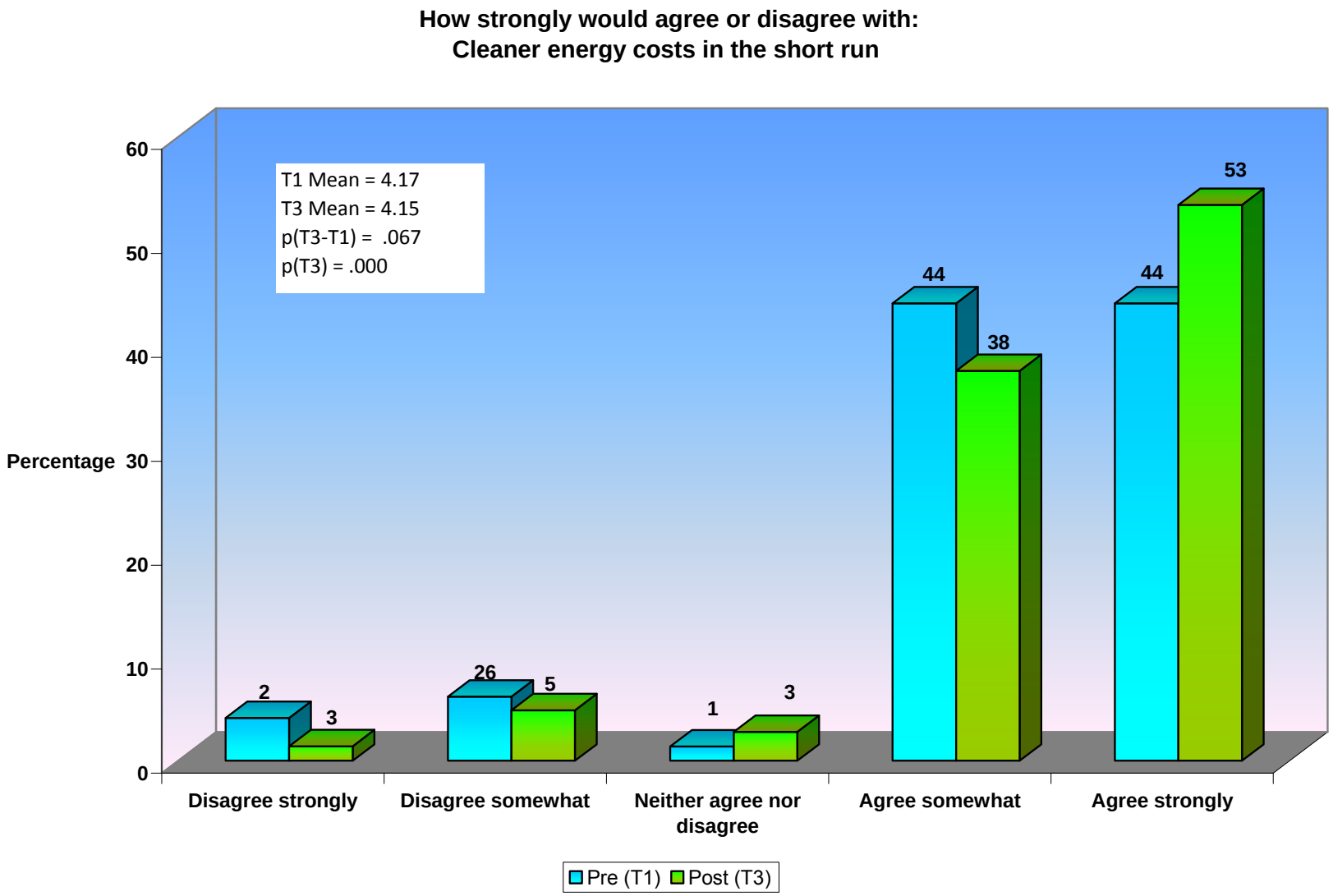
**On a scale of a scale of 0-10, where 0 is extremely unfriendly to the environment, 10 is extremely friendly to it, and 5 is exactly in the middle, how environmentally friendly or unfriendly would you say each of the following sources is? Methane**



# Figure 47: How Environmentally Friendly or Unfriendly: Energy Efficiency



# Figure 48: Cleaner Energy Will Cost More in the Short Run



# Figure 49: Cleaner Energy Will Cost More in The Long Run

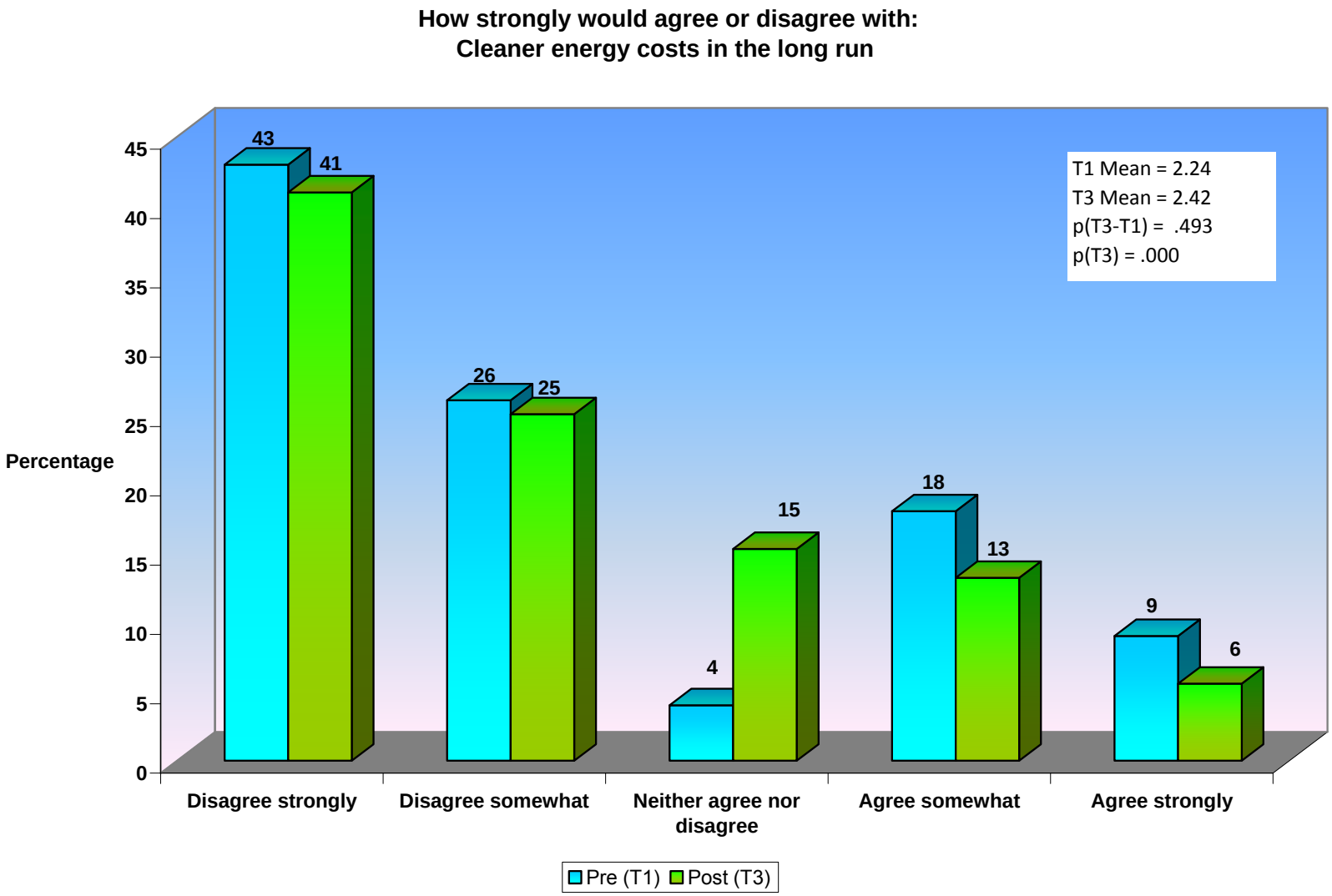


Figure 50: Percentage Possible by 2017: Wind

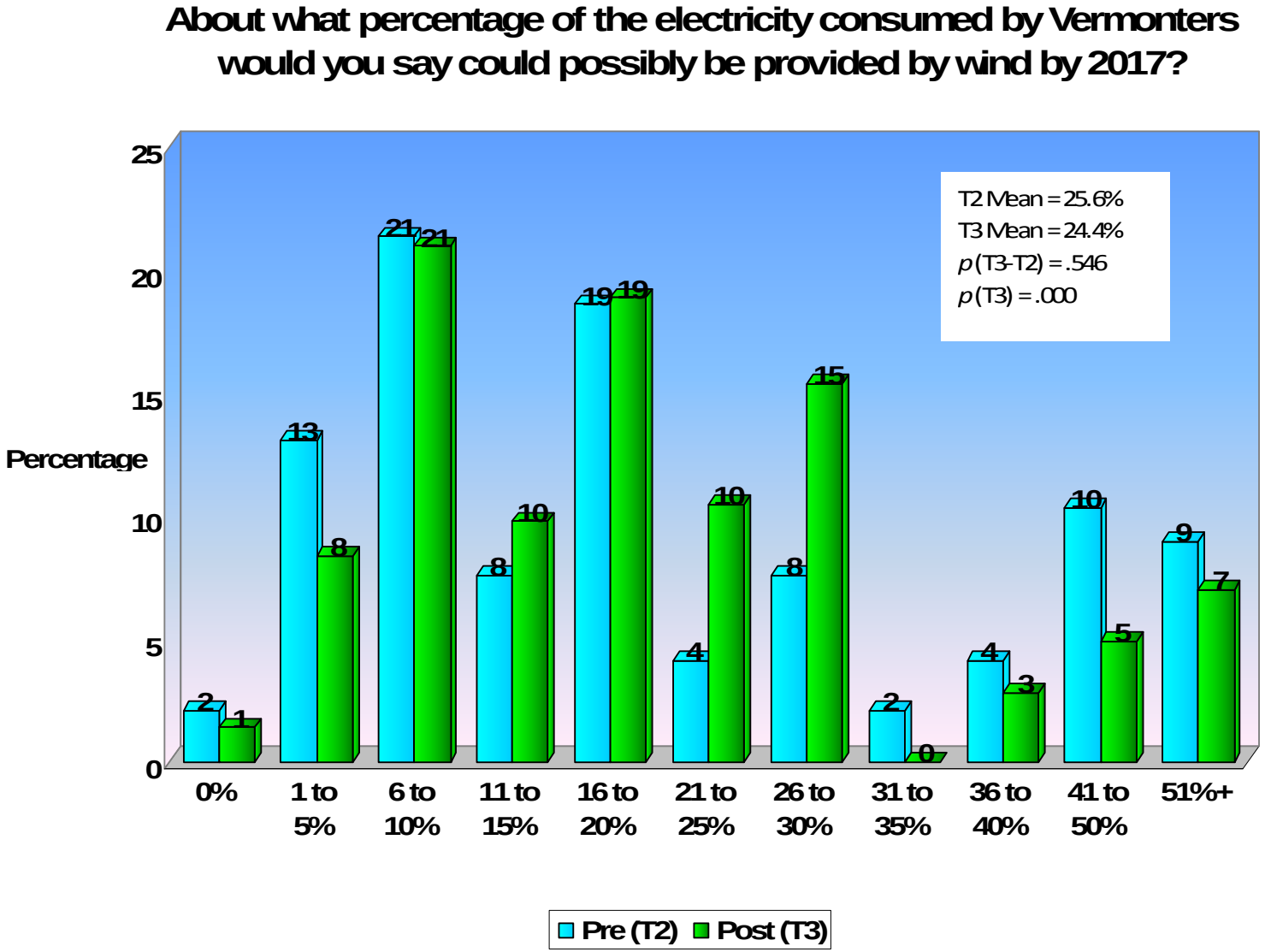


Figure 51: Percentage Possible by 2017: Oil

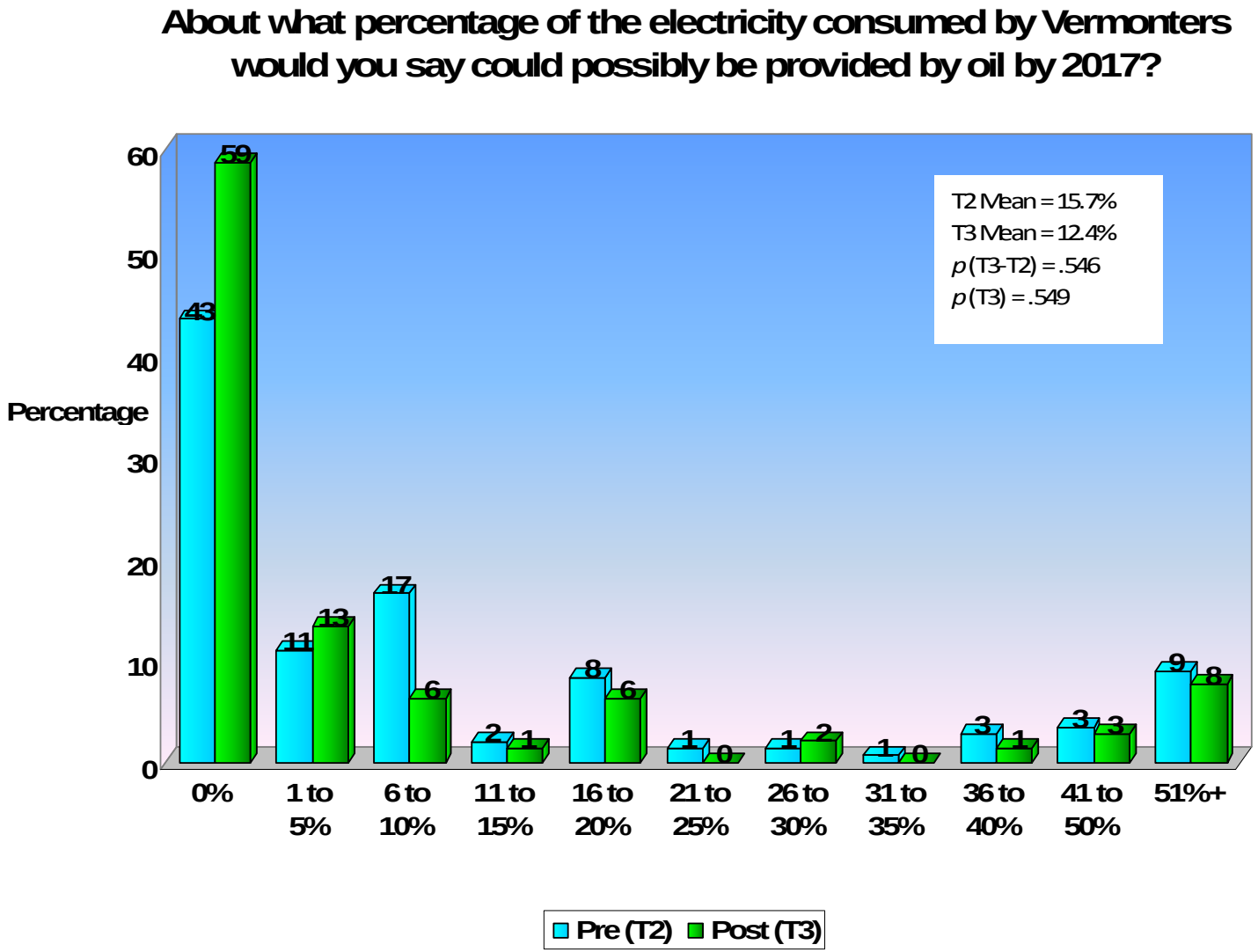


Figure 52: Percentage Possible by 2017: Natural Gas

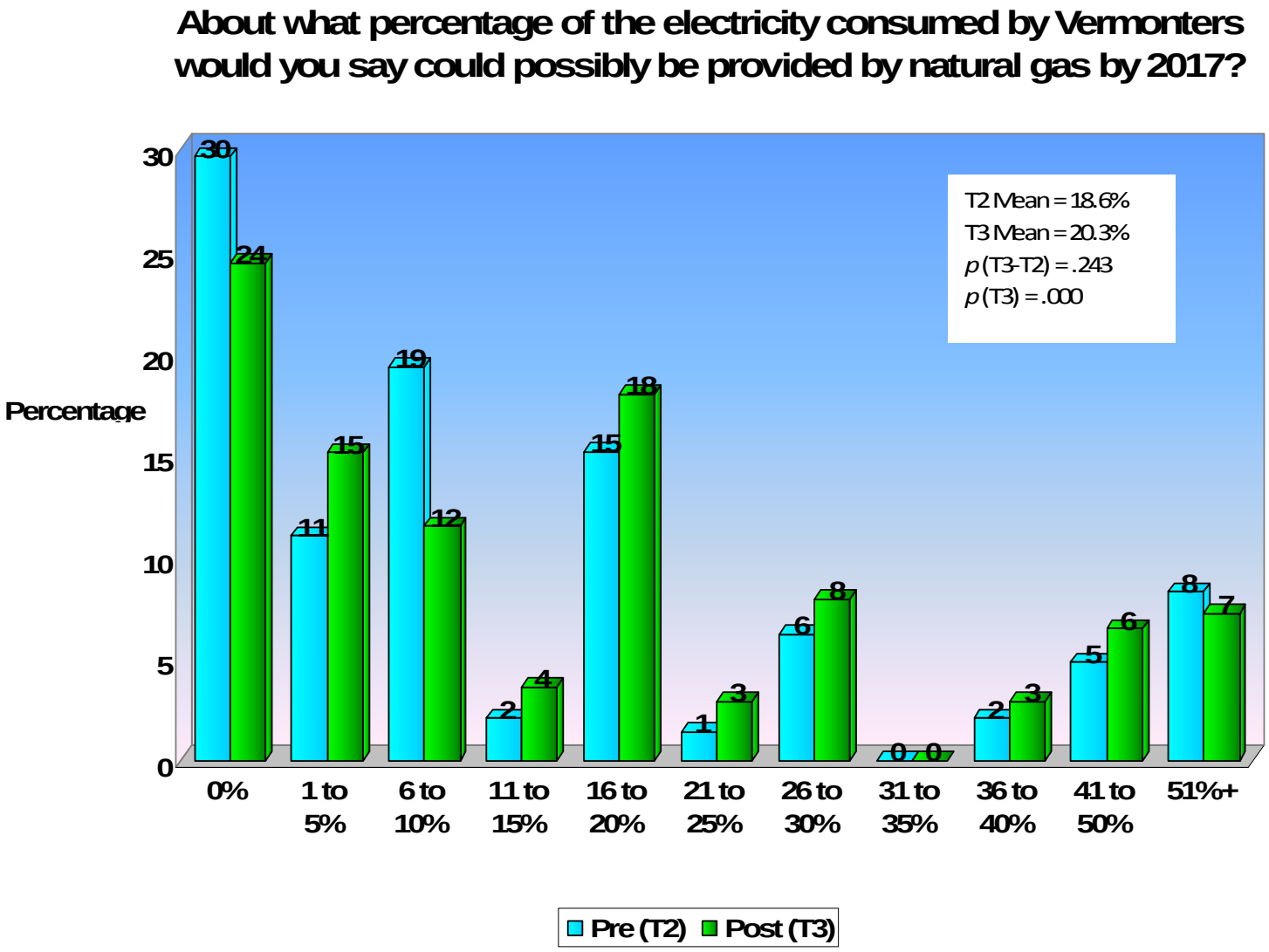


Figure 53: Percentage Possible by 2017: Coal

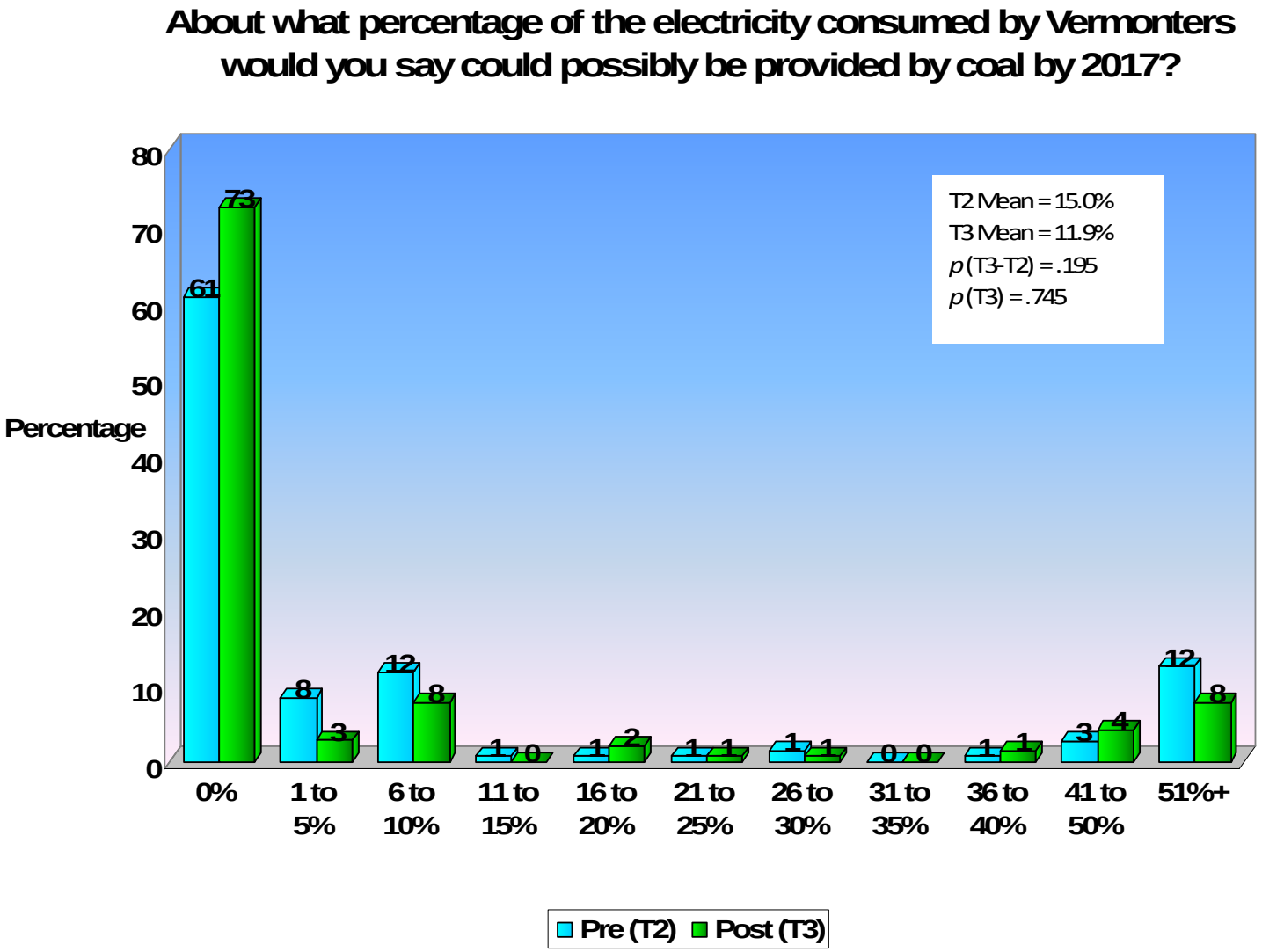


Figure 54: Percentage Possible by 2017: Nuclear

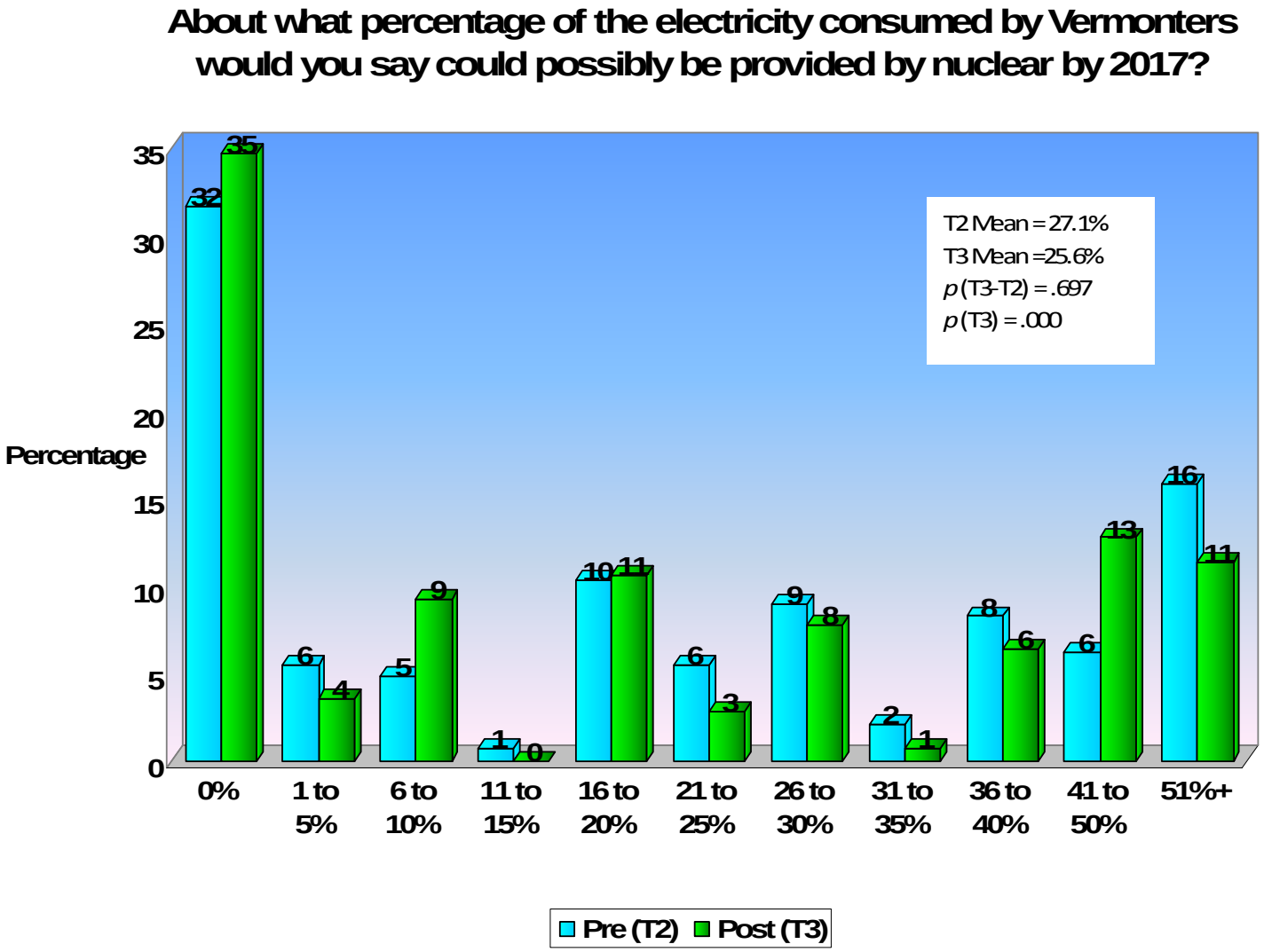
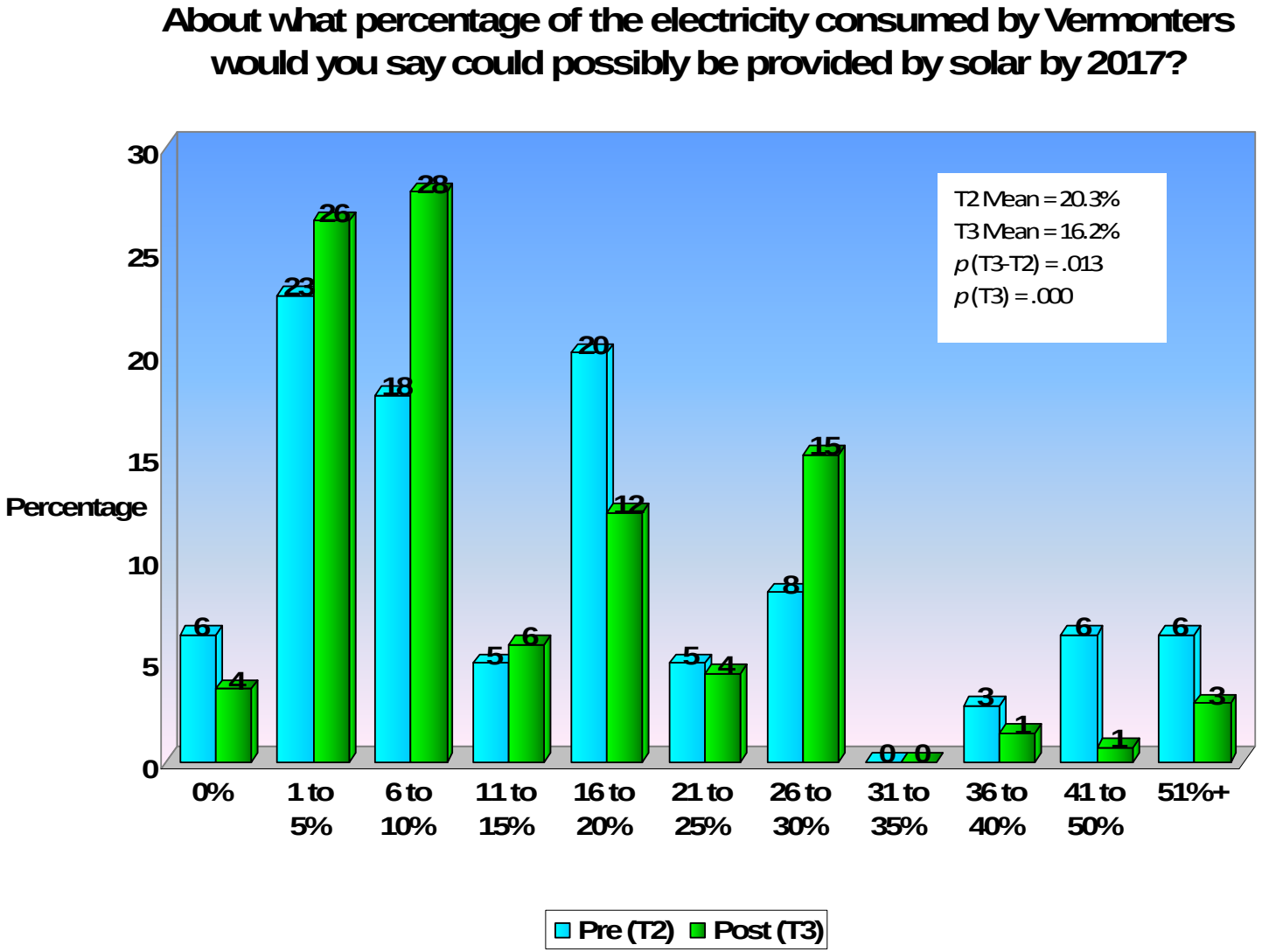
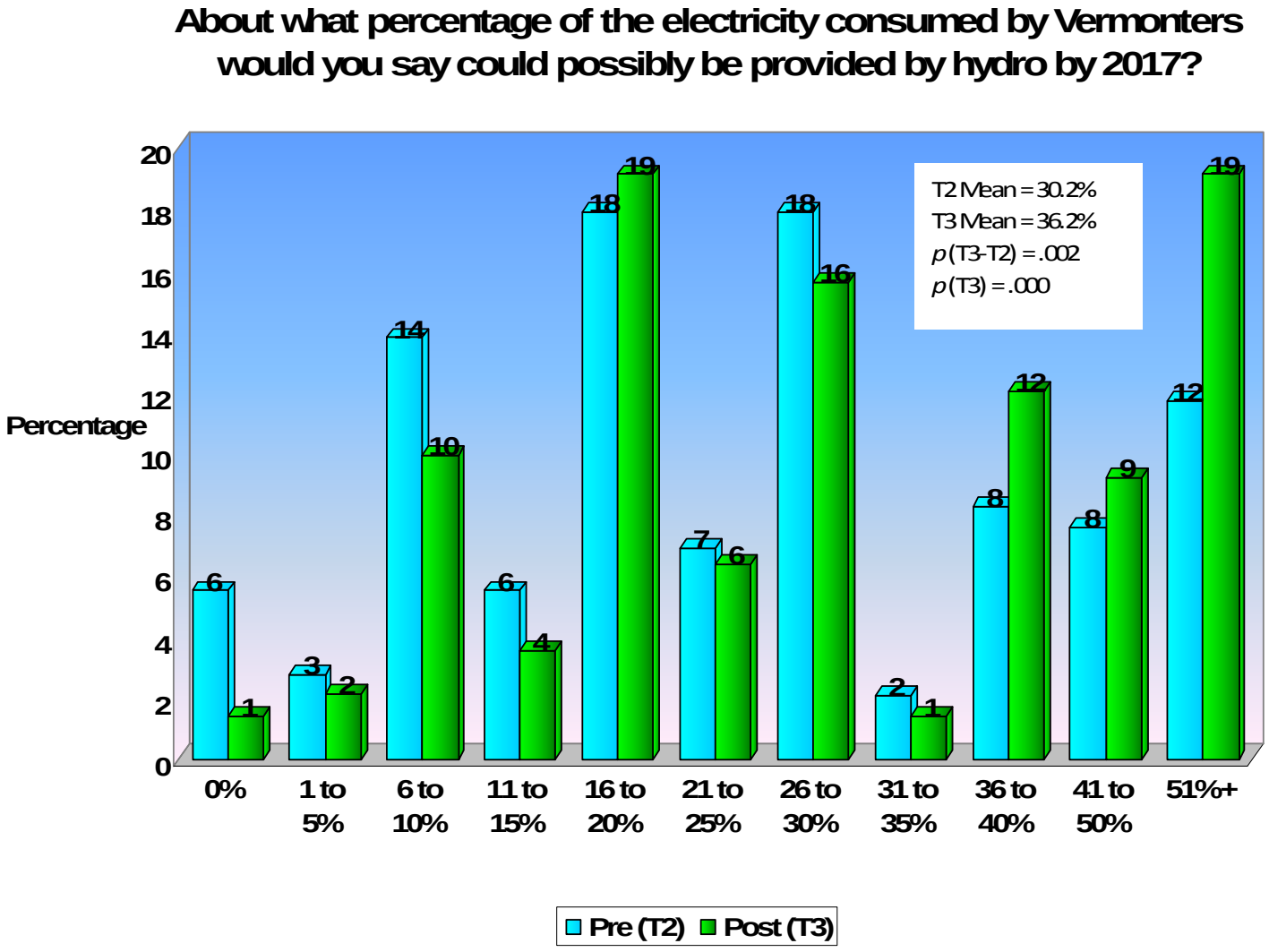


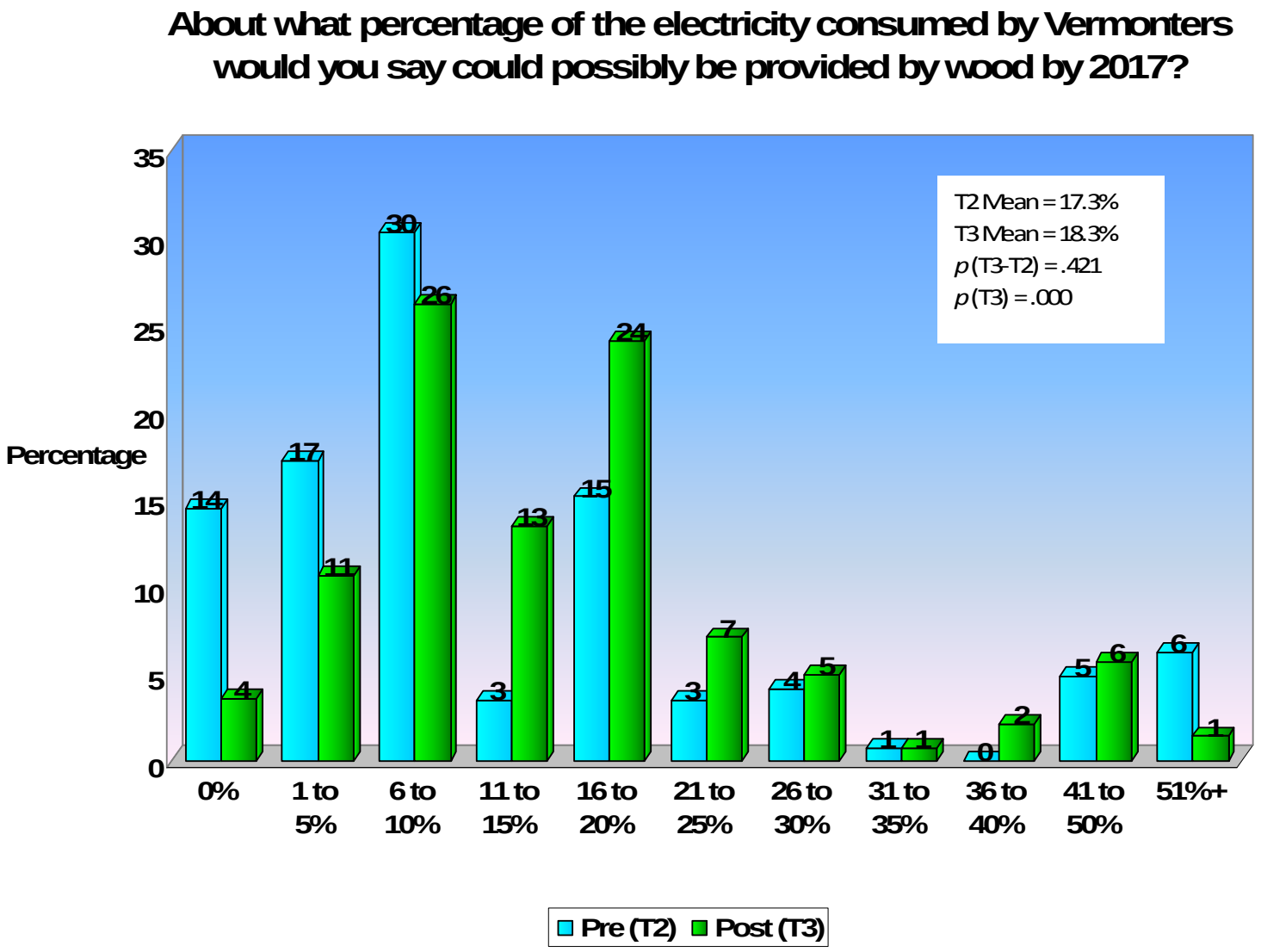
Figure 55: Percentage Possible by 2017: Solar



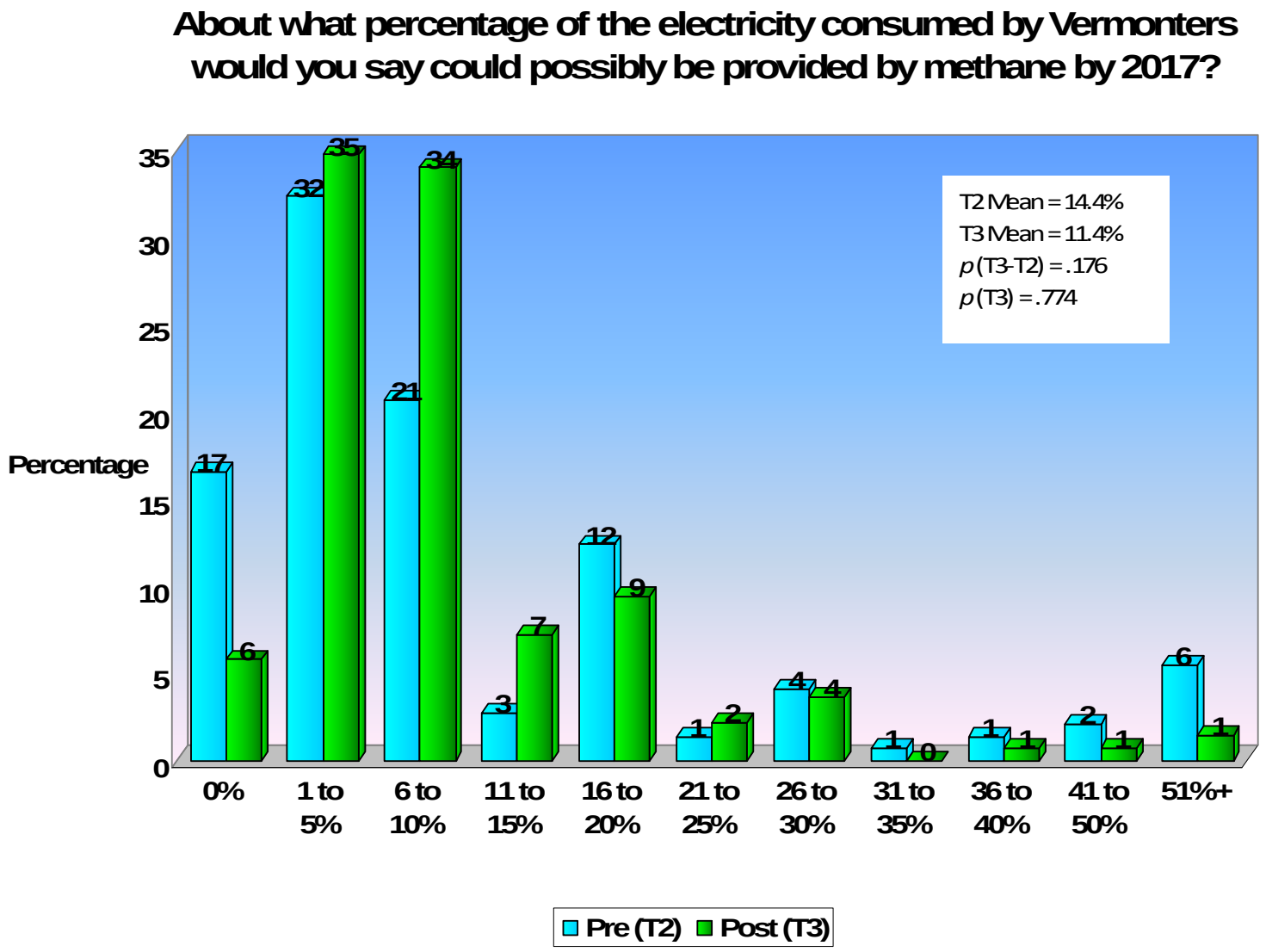
# Figure 56: Percentage possible by 2017: Hydro



# Figure 57: Percentage Possible by 2017: Wood

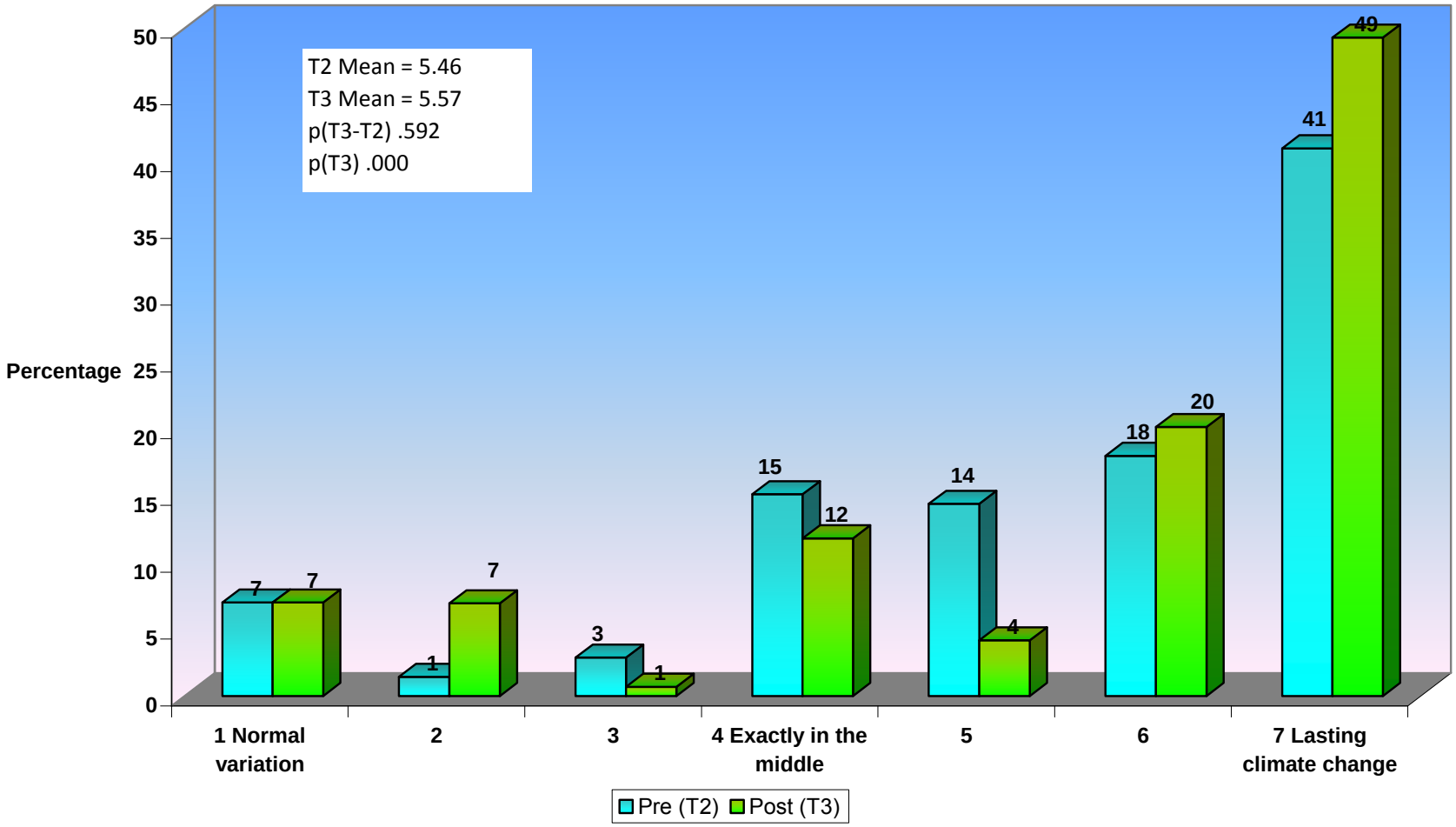


# Figure 58: Percentage Possible by 2017: Methane

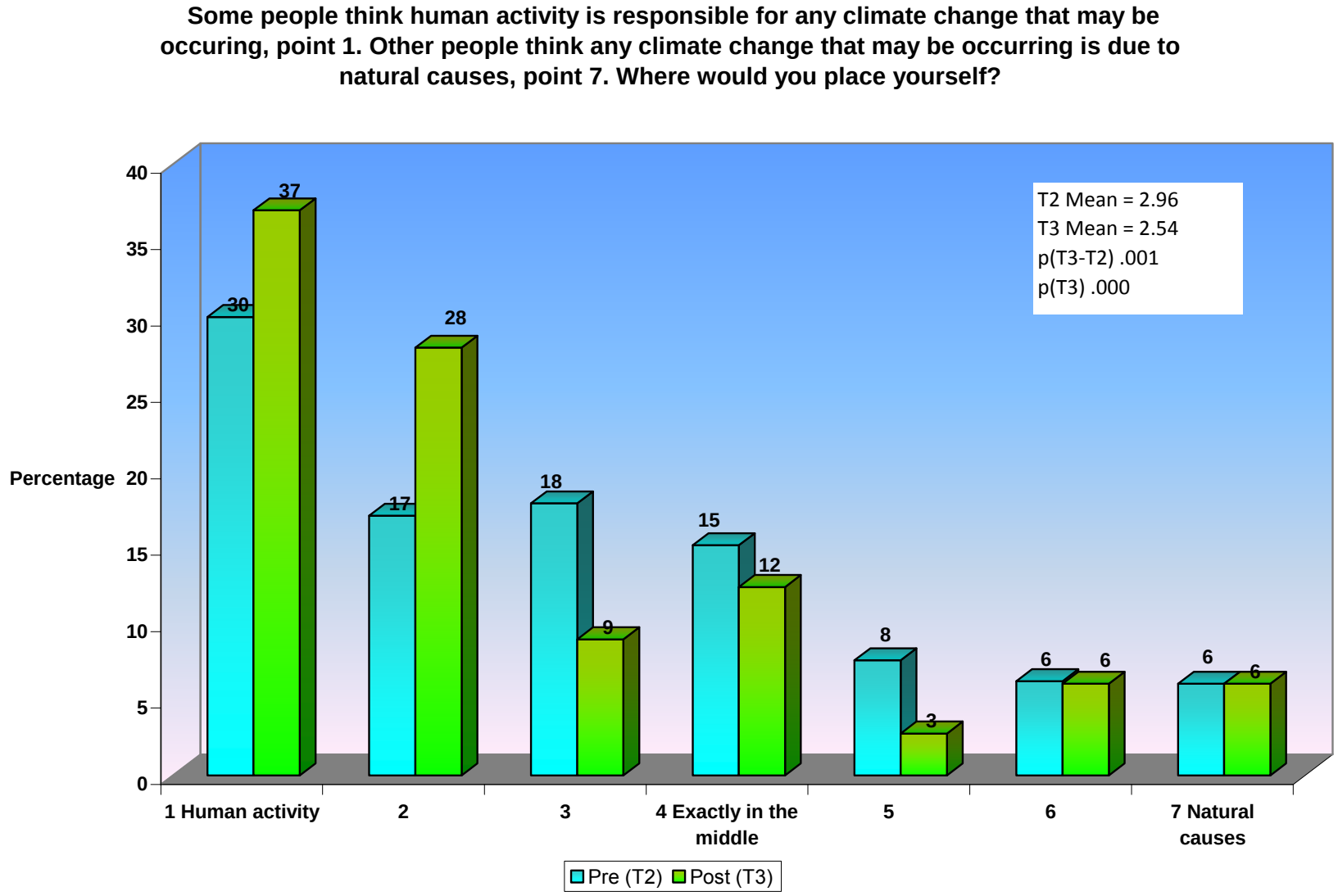


# Figure 59: Normal Variation vs. Lasting Climate Change

**Some people think the weather of the past few decades is just an example of normal variation over time, point 1. Other people think the weather of the past decade is part of a lasting climate change, point 7. Where would you place yourself?**

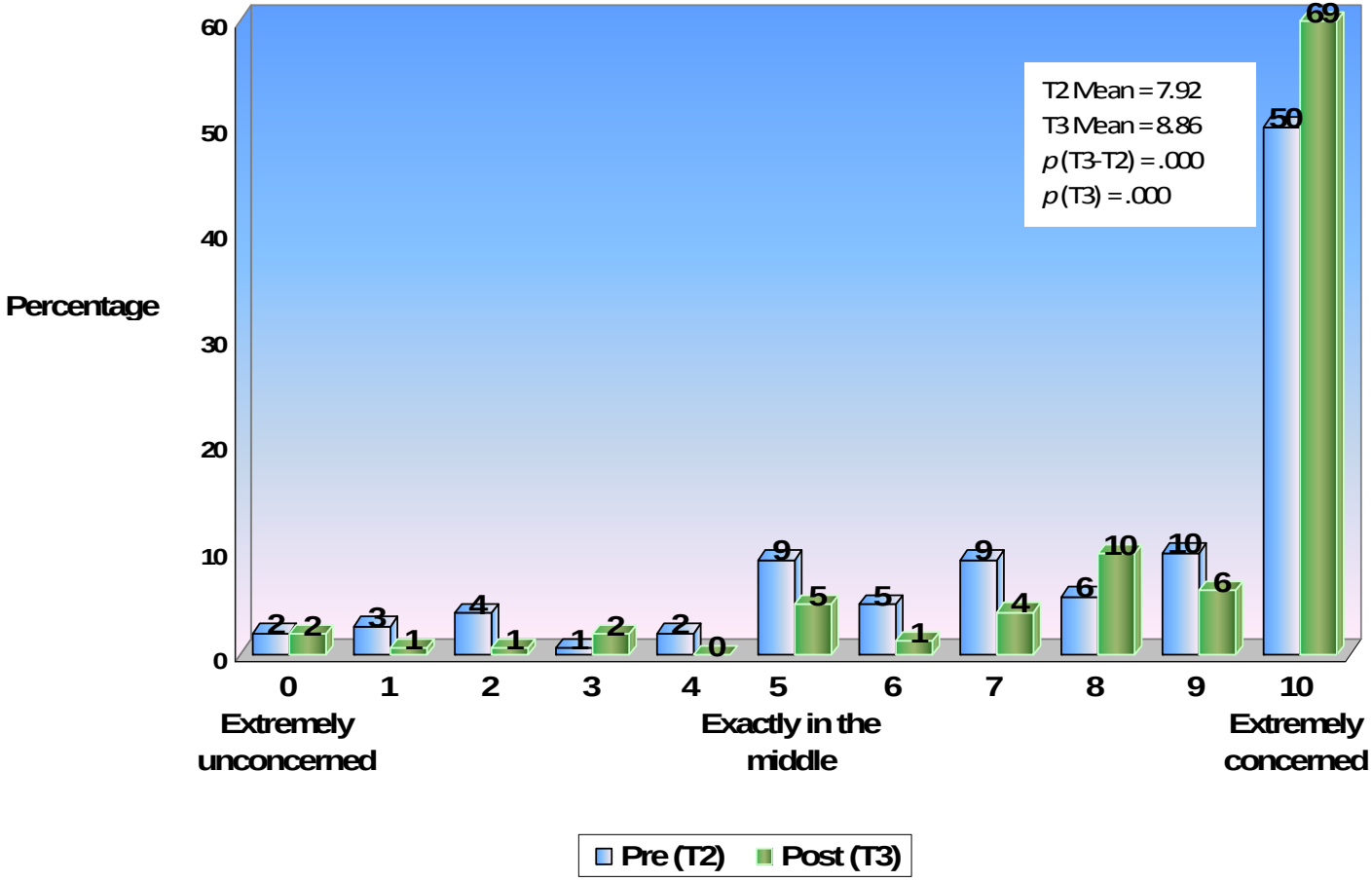


# Figure 60: Human Activity vs. Natural Causes



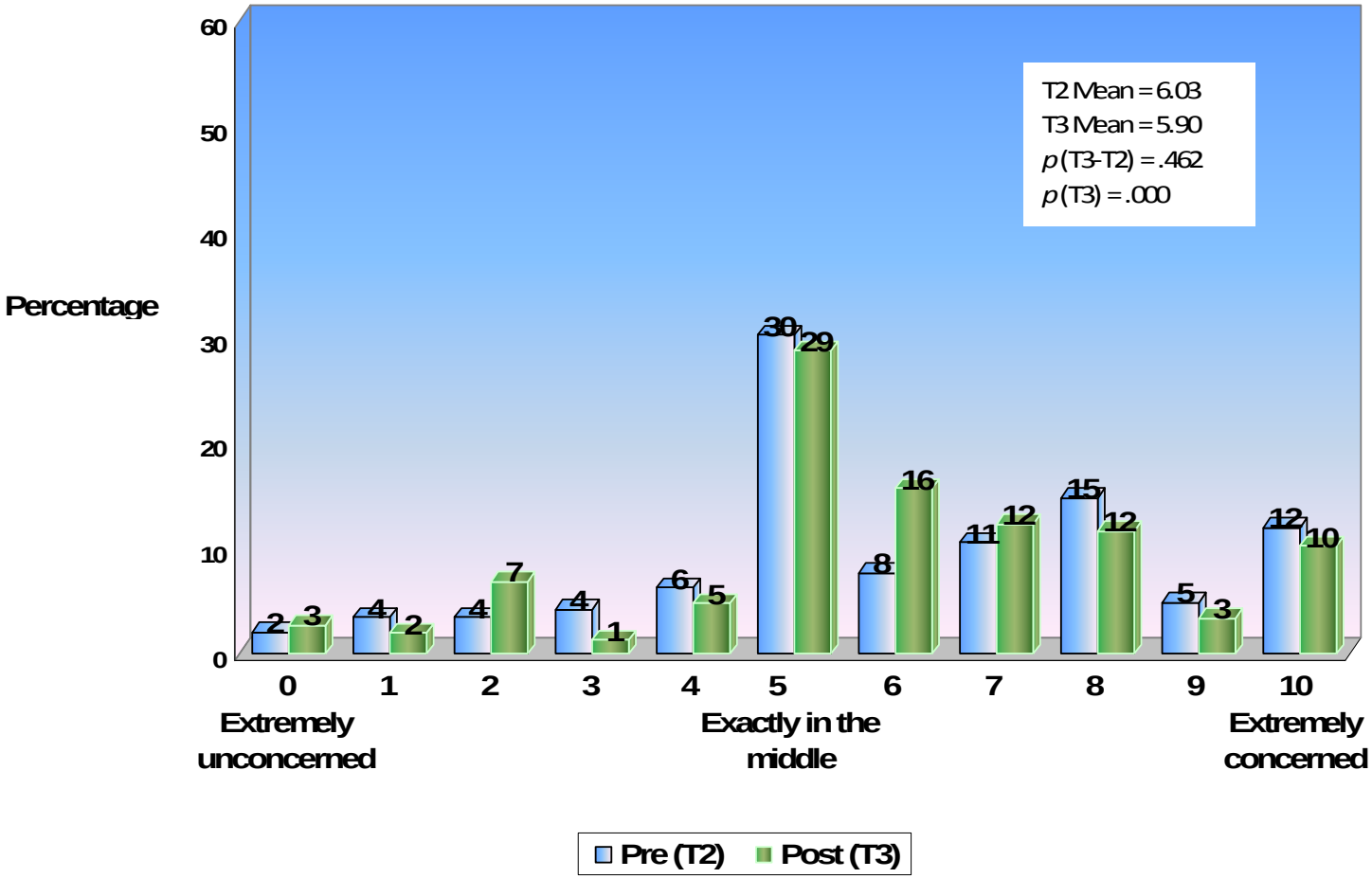
# Figure 61: Threat to Scenic Beauty: Coal-Fired Plant

**On another scale of 0 to 10, where 0 is extremely unconcerned, 10 is extremely concerned, and 5 is exactly in the middle, how much of a threat to Vermont's scenic beauty would you say is posed by a coal-fired electric generating plant?**



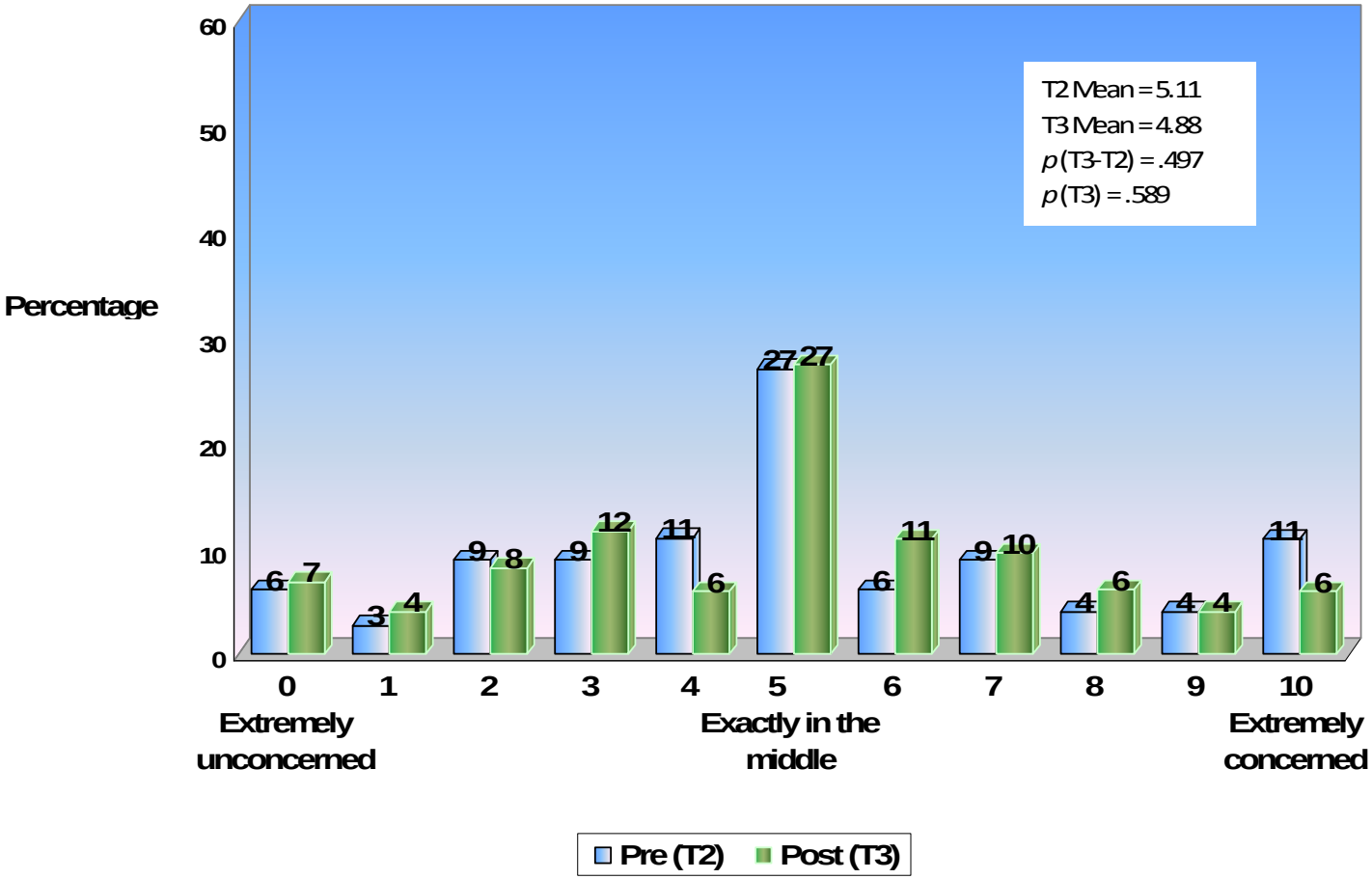
# Figure 62: Threat to Scenic Beauty: Natural Gas Plant

**On another scale of 0 to 10, where 0 is extremely unconcerned, 10 is extremely concerned, and 5 is exactly in the middle, how much of a threat to Vermont's scenic beauty would you say is posed by a natural gas-fired electric generating plant?**

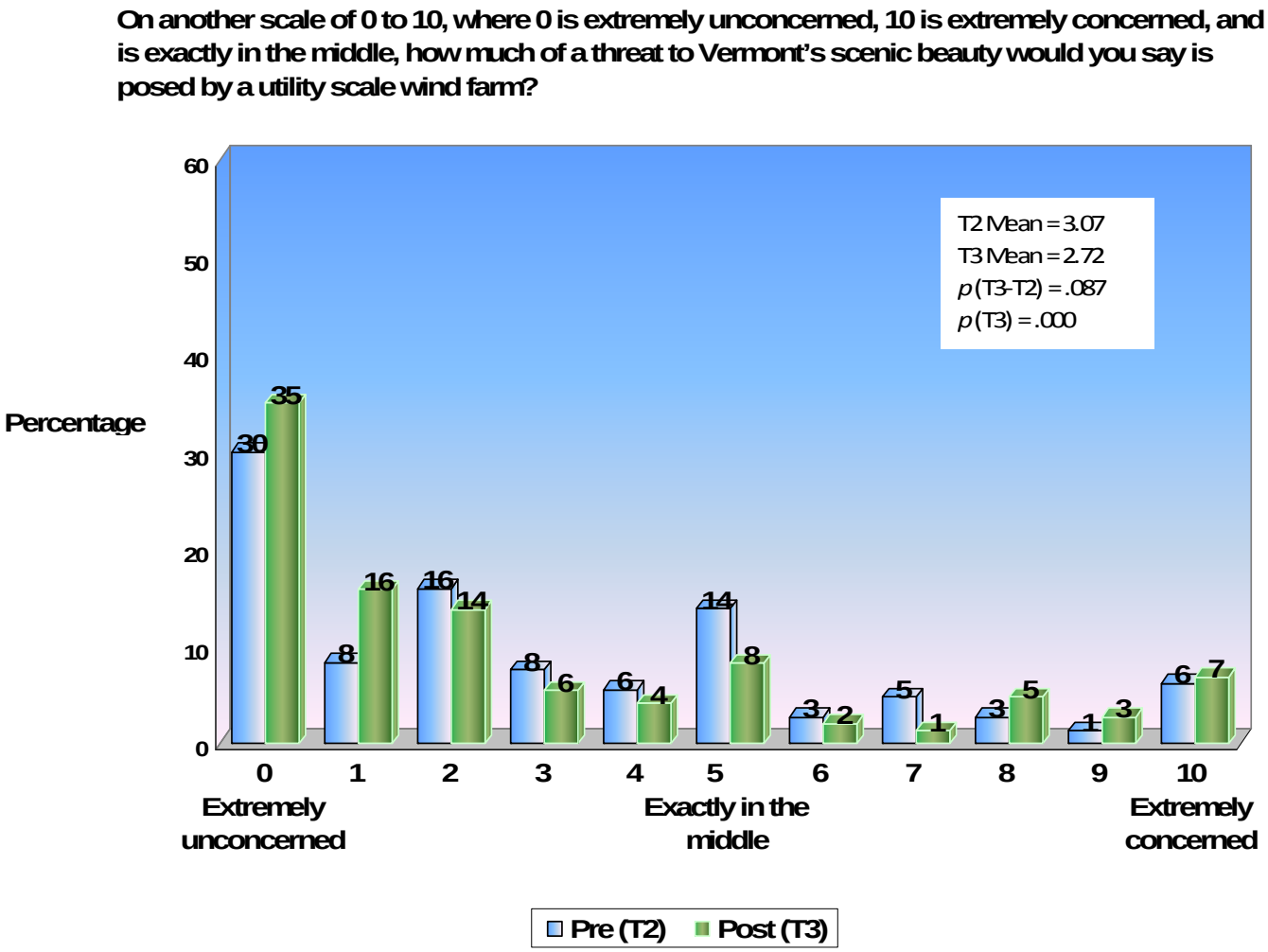


# Figure 63: Threat to Scenic Beauty: Transmission Lines

**On another scale of 0 to 10, where 0 is extremely unconcerned, 10 is extremely concerned, and 5 is exactly in the middle, how much of a threat to Vermont's scenic beauty would you say is posed by electricity transmission lines?**

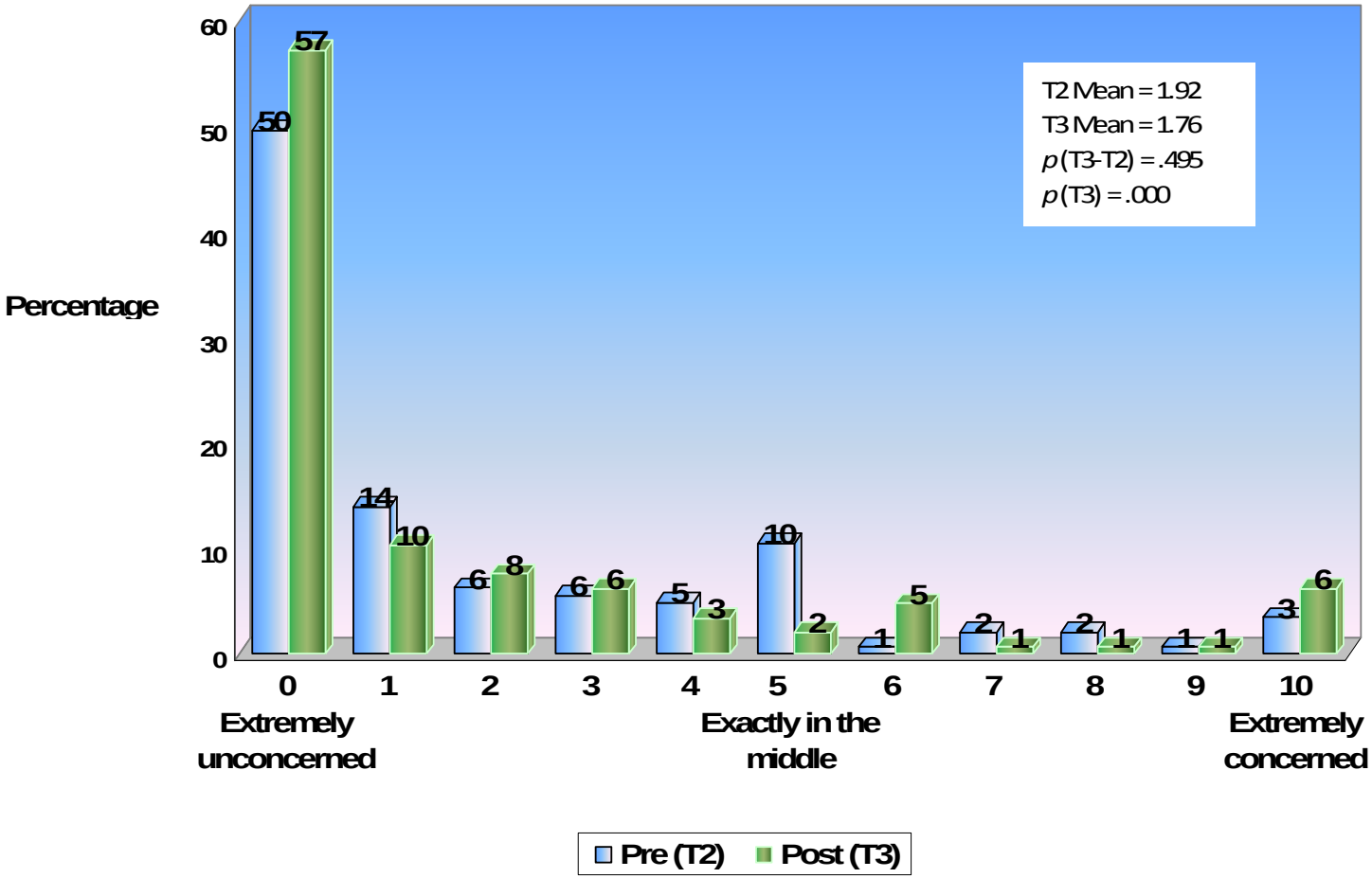


# Figure 64: Threat to Scenic Beauty: Utility Scale Wind Farm

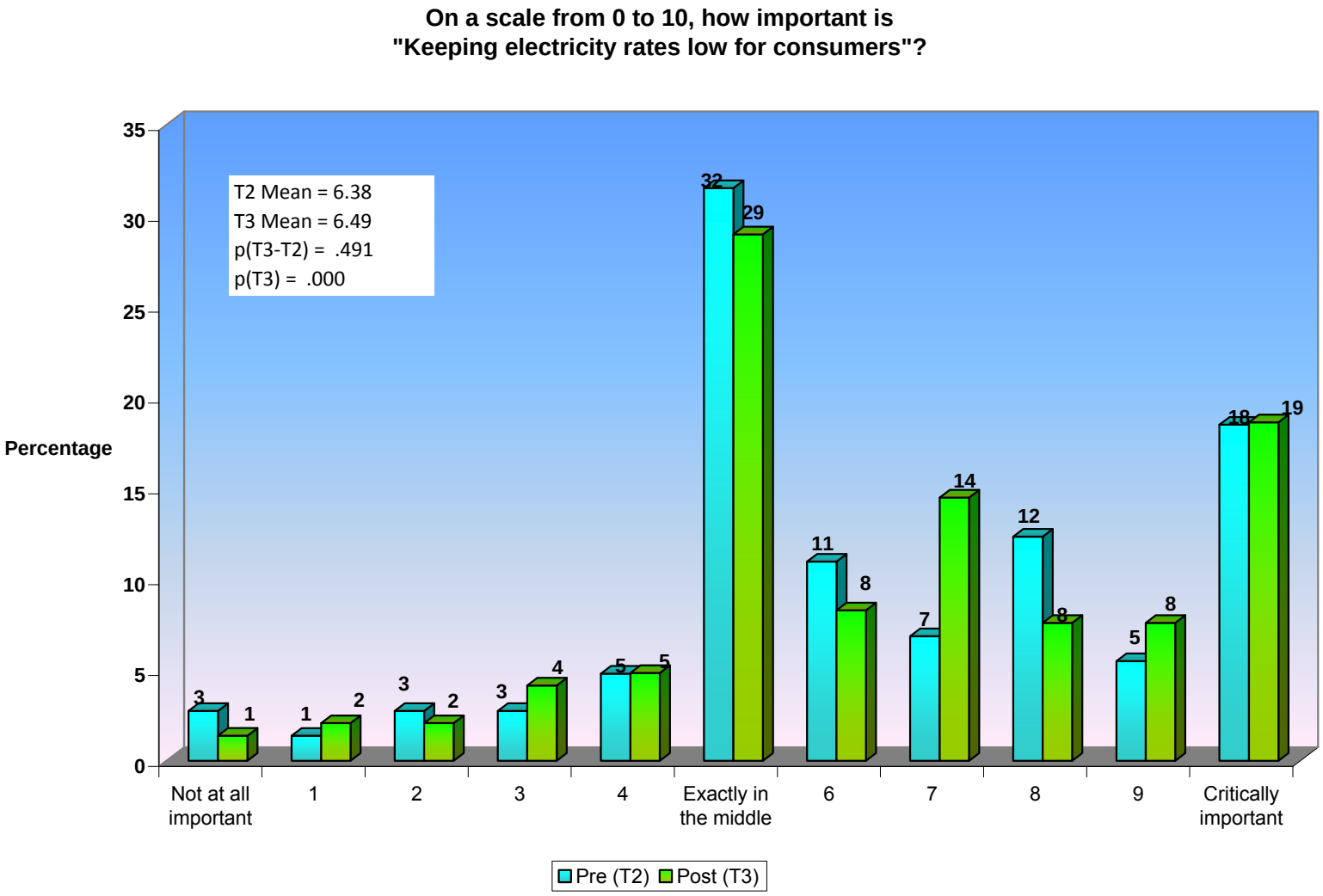


# Figure 65: Threat to Scenic Beauty: Residential Scale Wind Farm

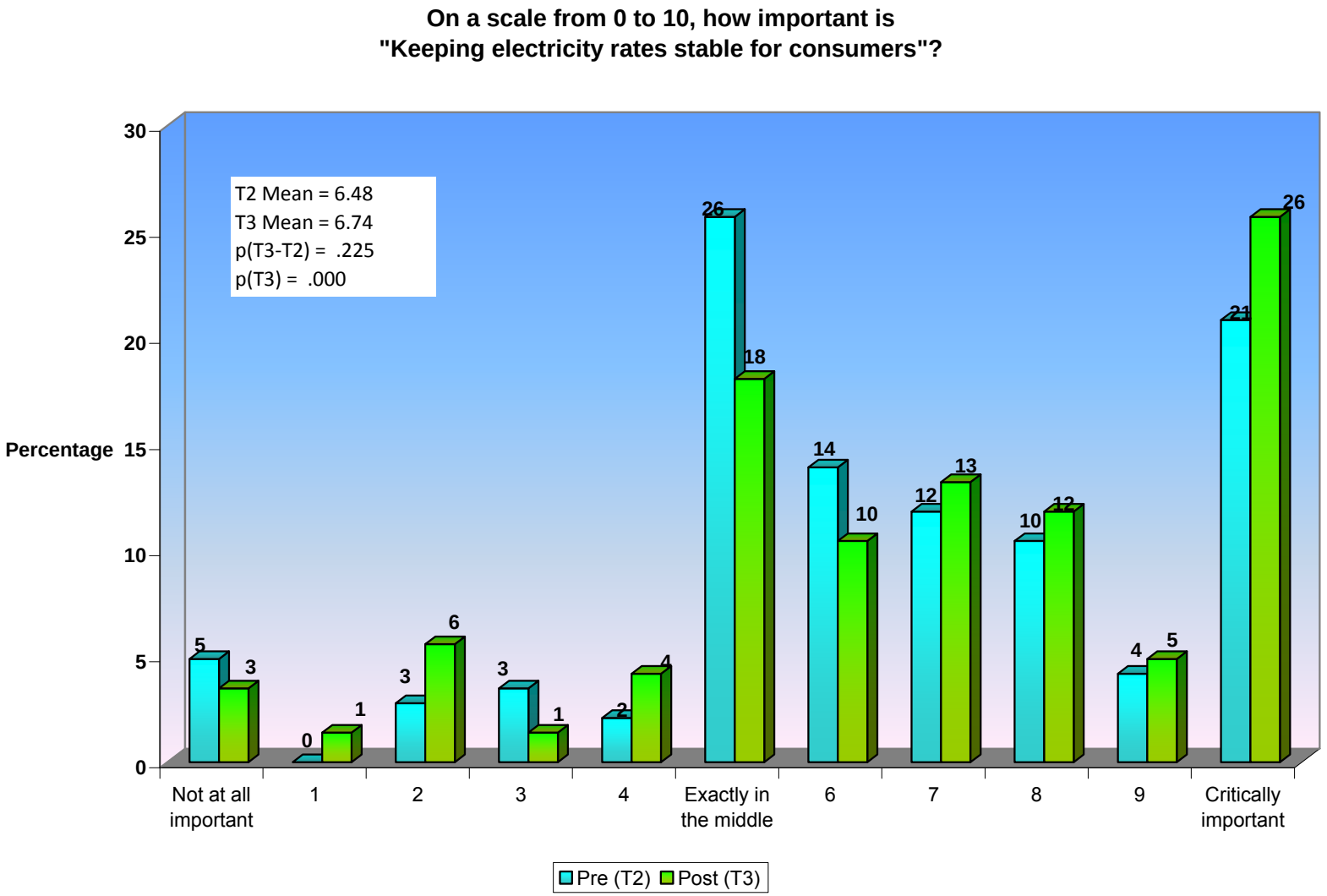
**On another scale of 0 to 10, where 0 is extremely unconcerned, 10 is extremely concerned, and 5 is exactly in the middle, how much of a threat to Vermont's scenic beauty would you say is posed by a residential scale wind farm?**



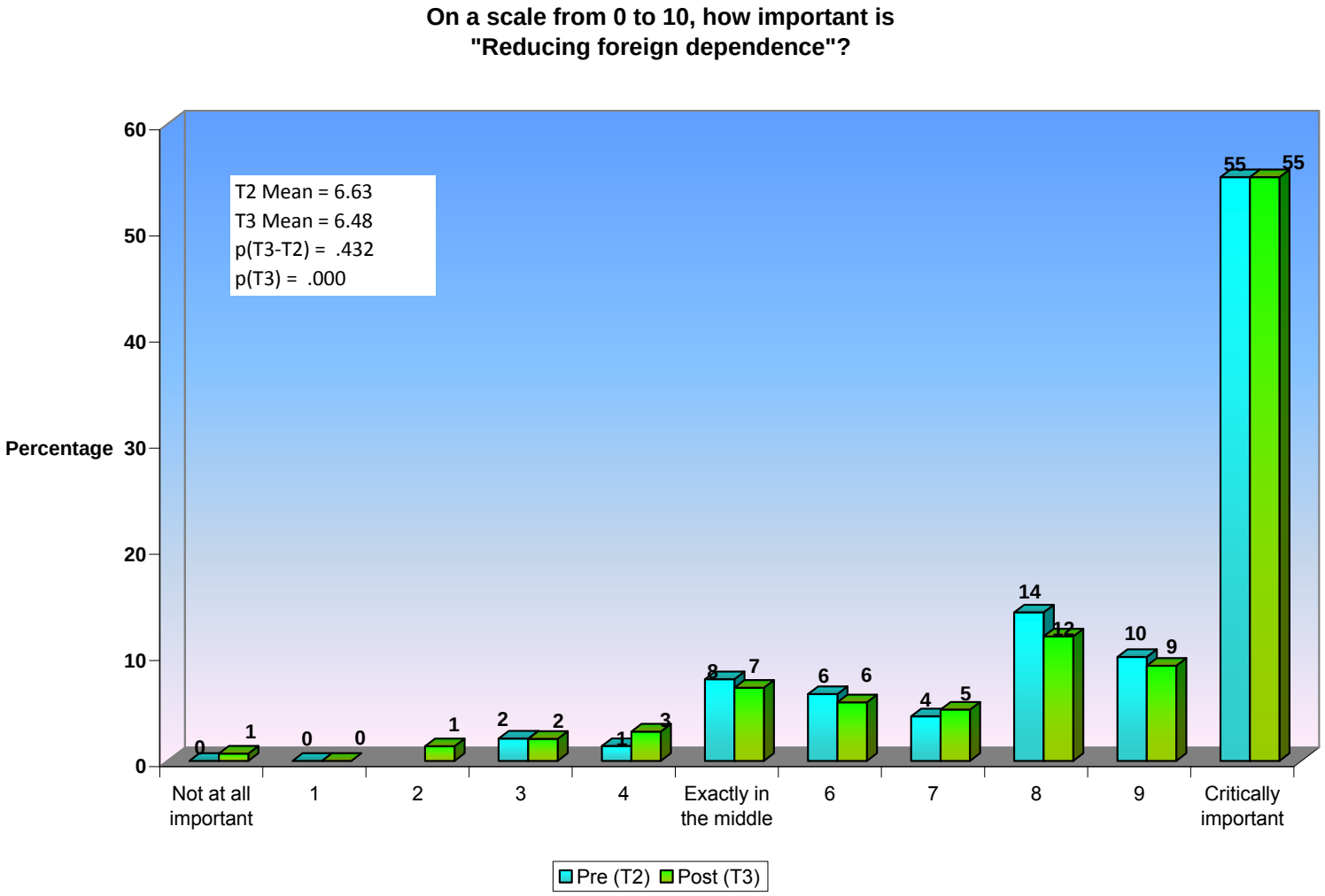
# Figure 66: How Important: Low Rates



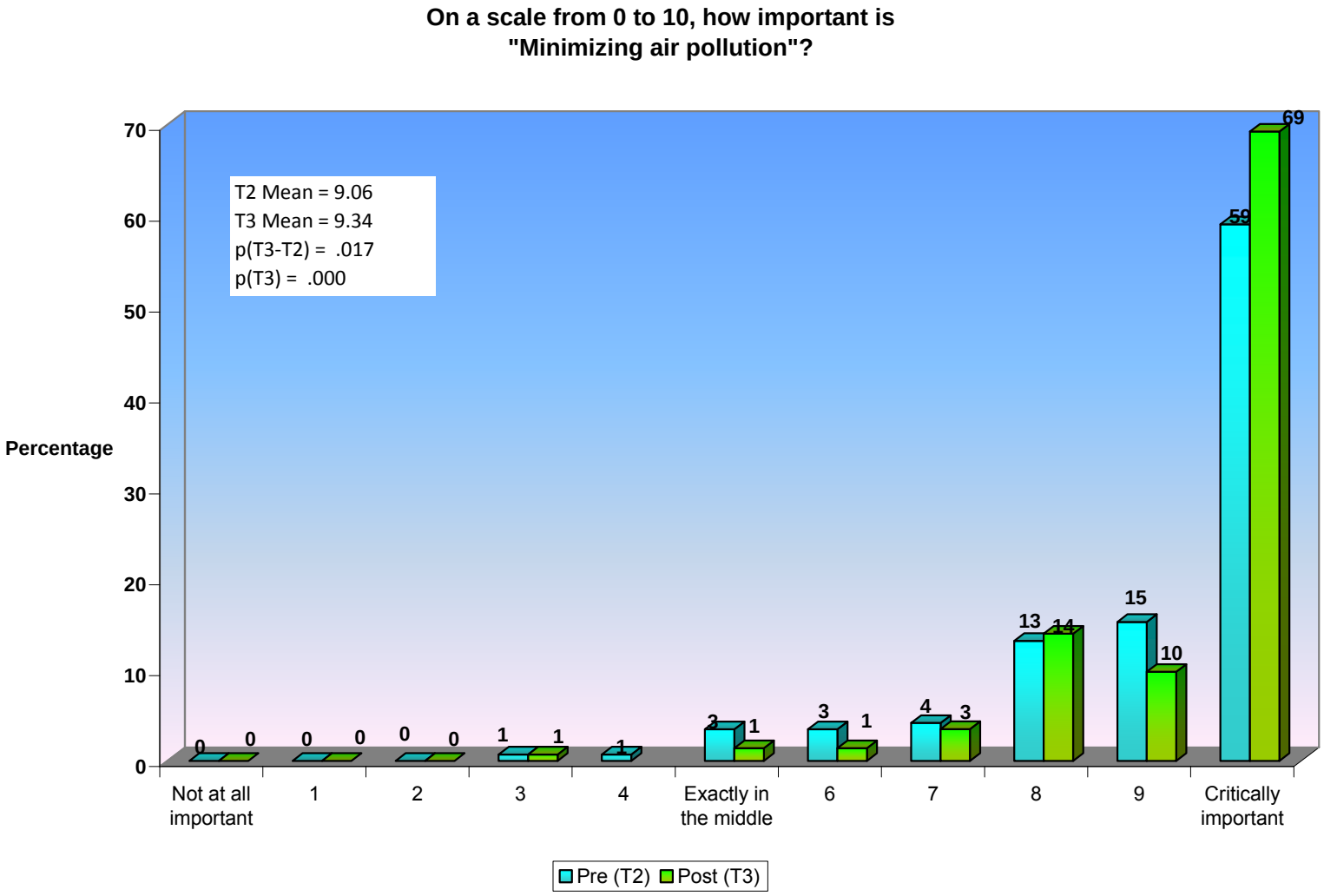
# Figure 67: How Important: Stable Rates



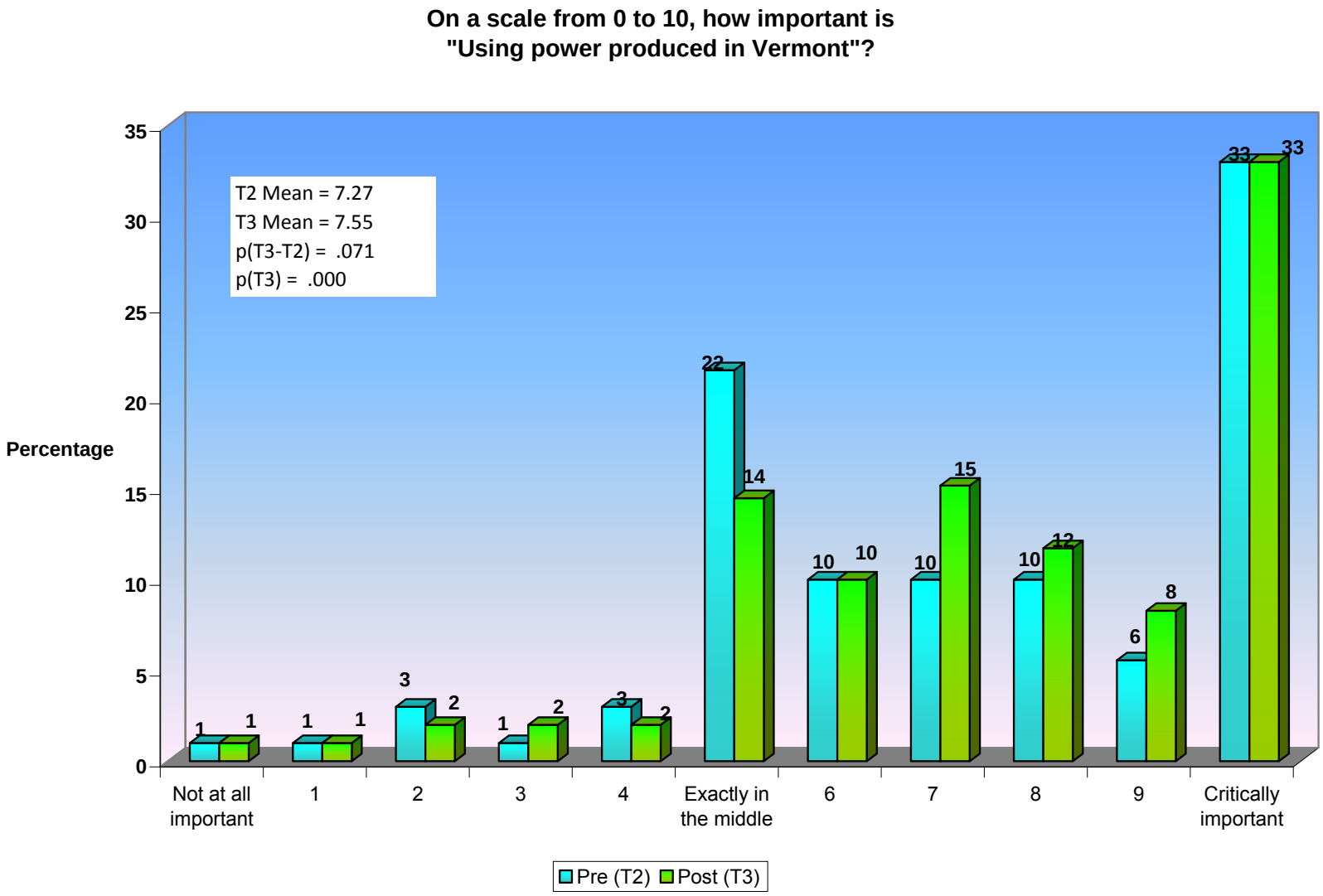
# Figure 68: How Important: Reducing Foreign Dependence



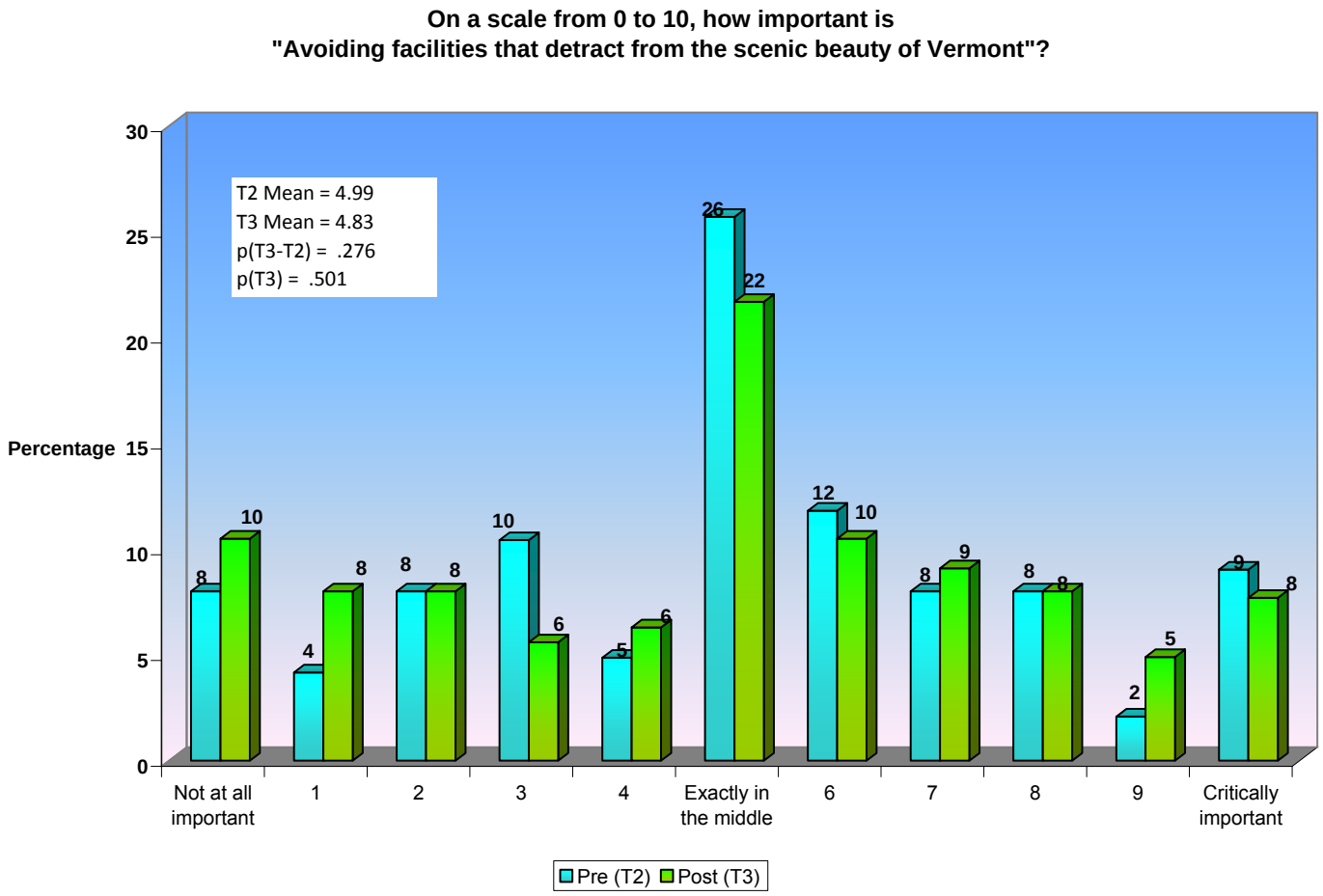
# Figure 69: How Important: Minimizing Air Pollution



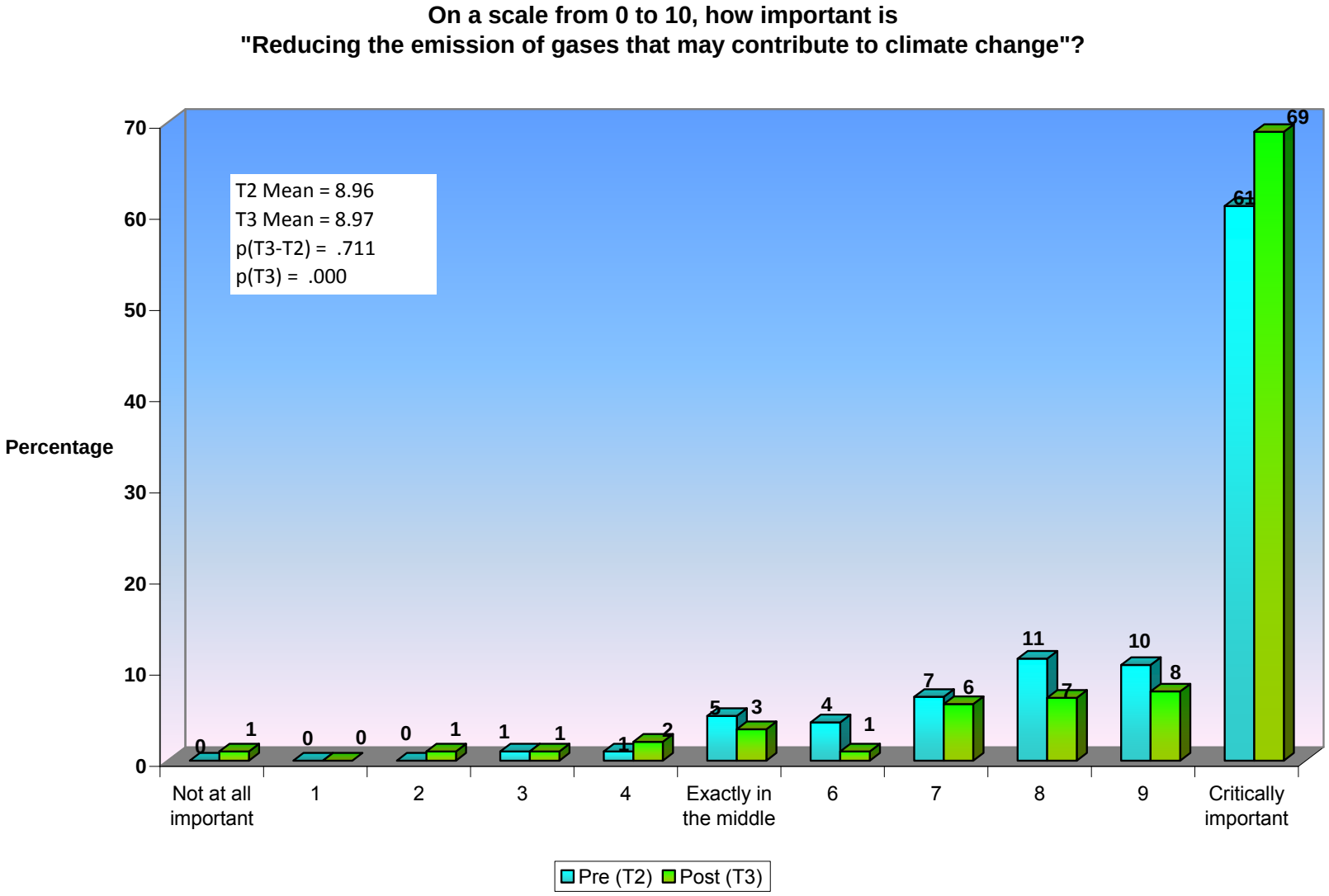
# Figure 70: How Important: Using Power Produced in Vermont



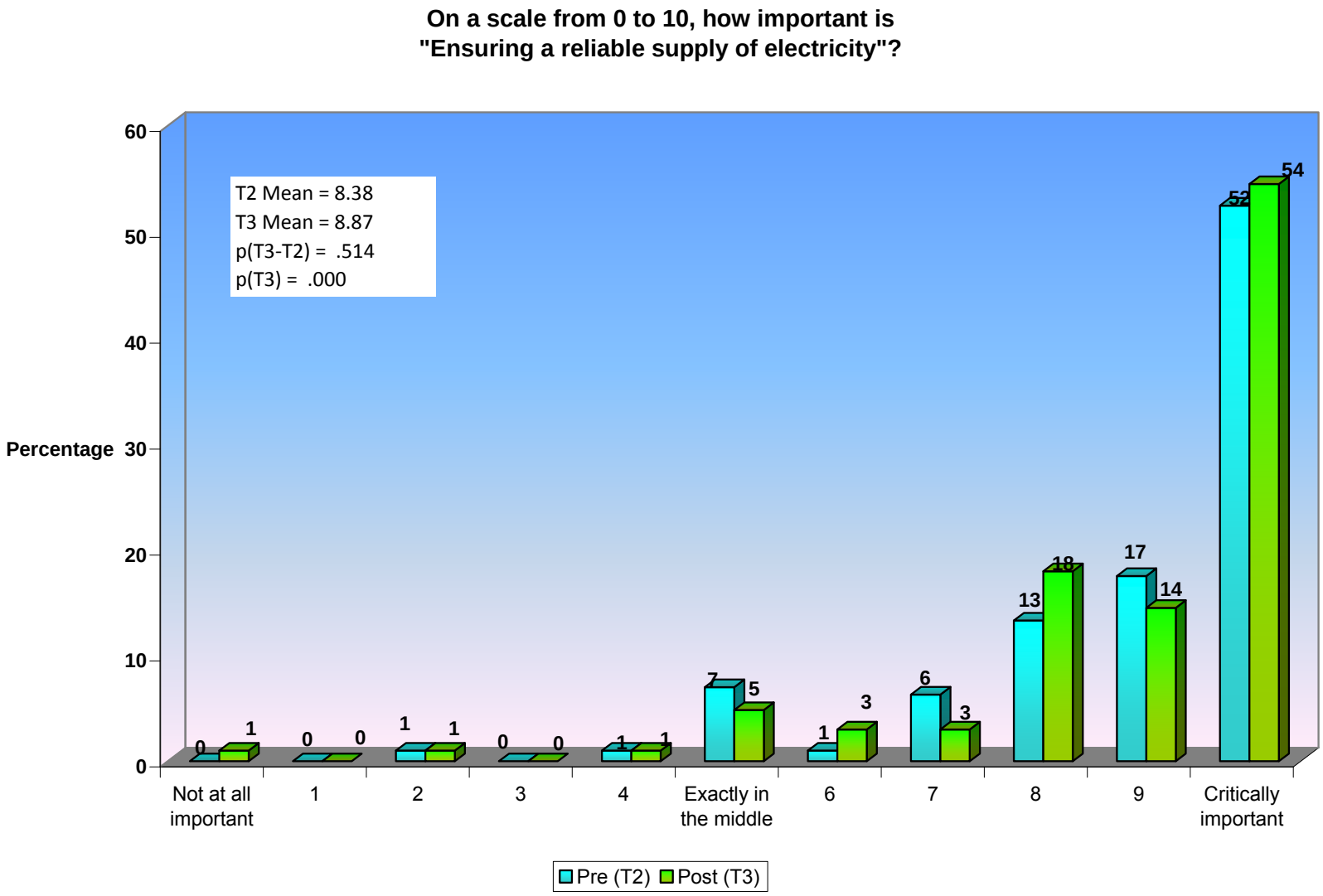
# Figure 71: How Important: Preserving Scenic Beauty



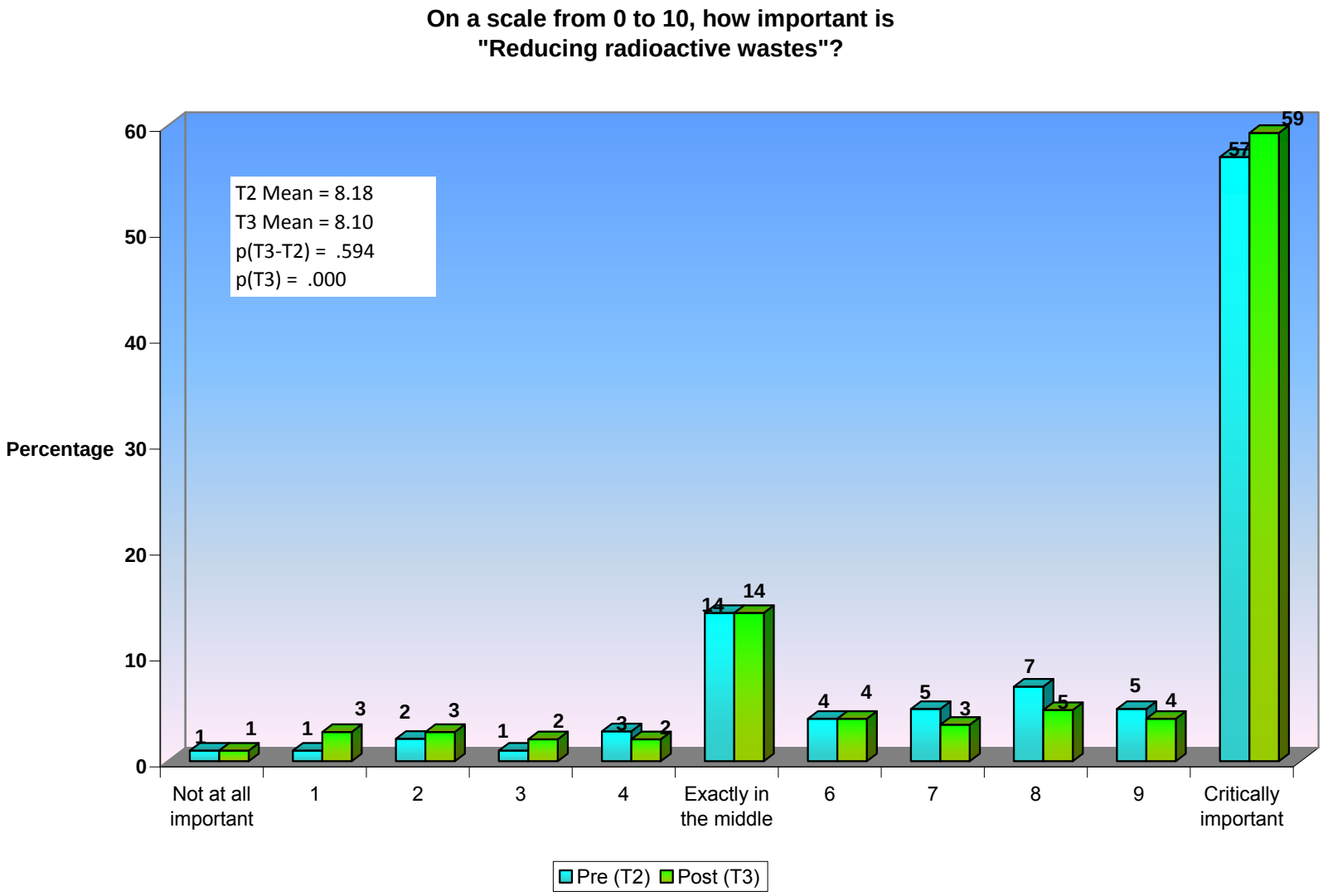
# Figure 72: How Important: Reducing Greenhouse Gas Emissions



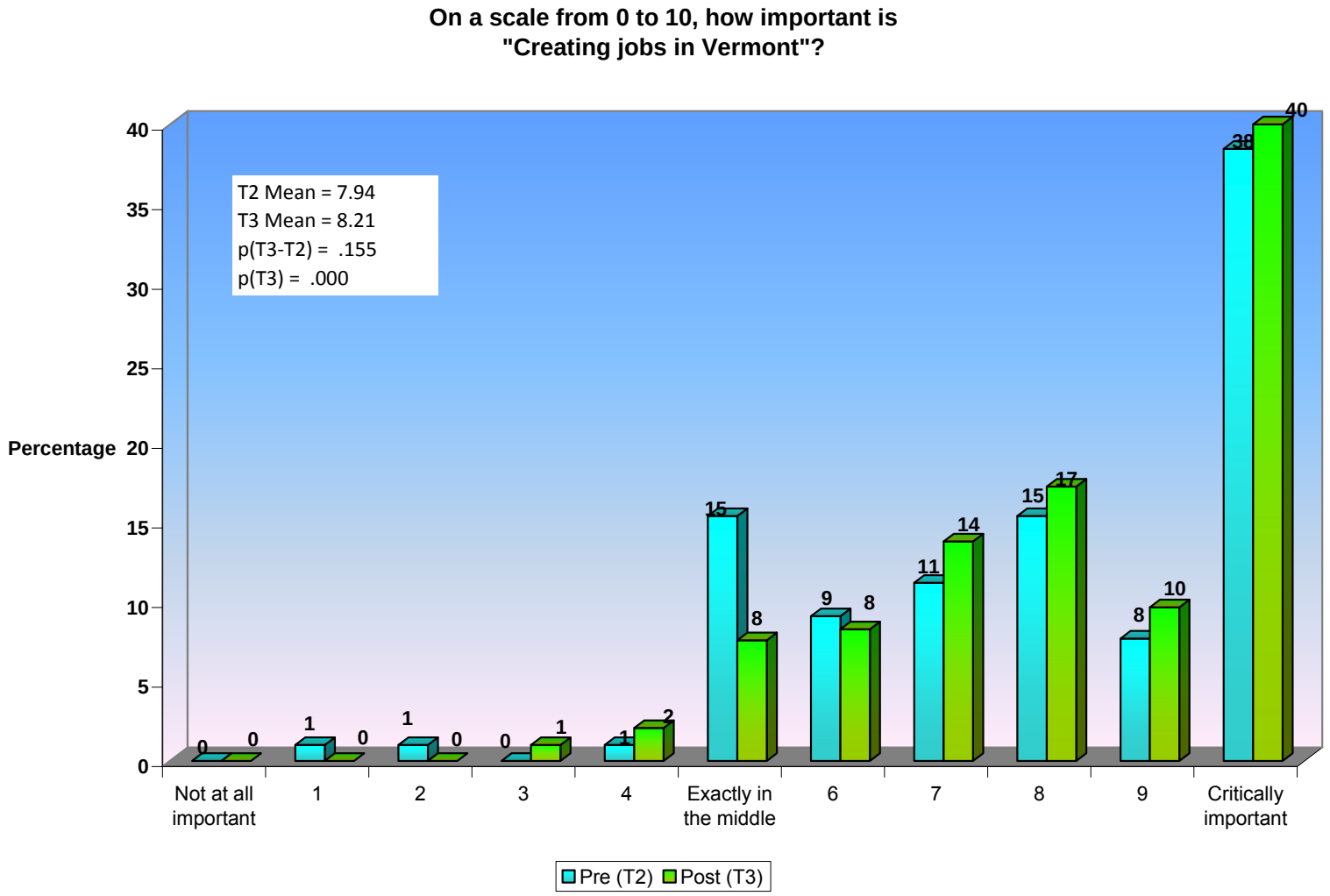
# Figure 73: How Important:  Reliable Supply



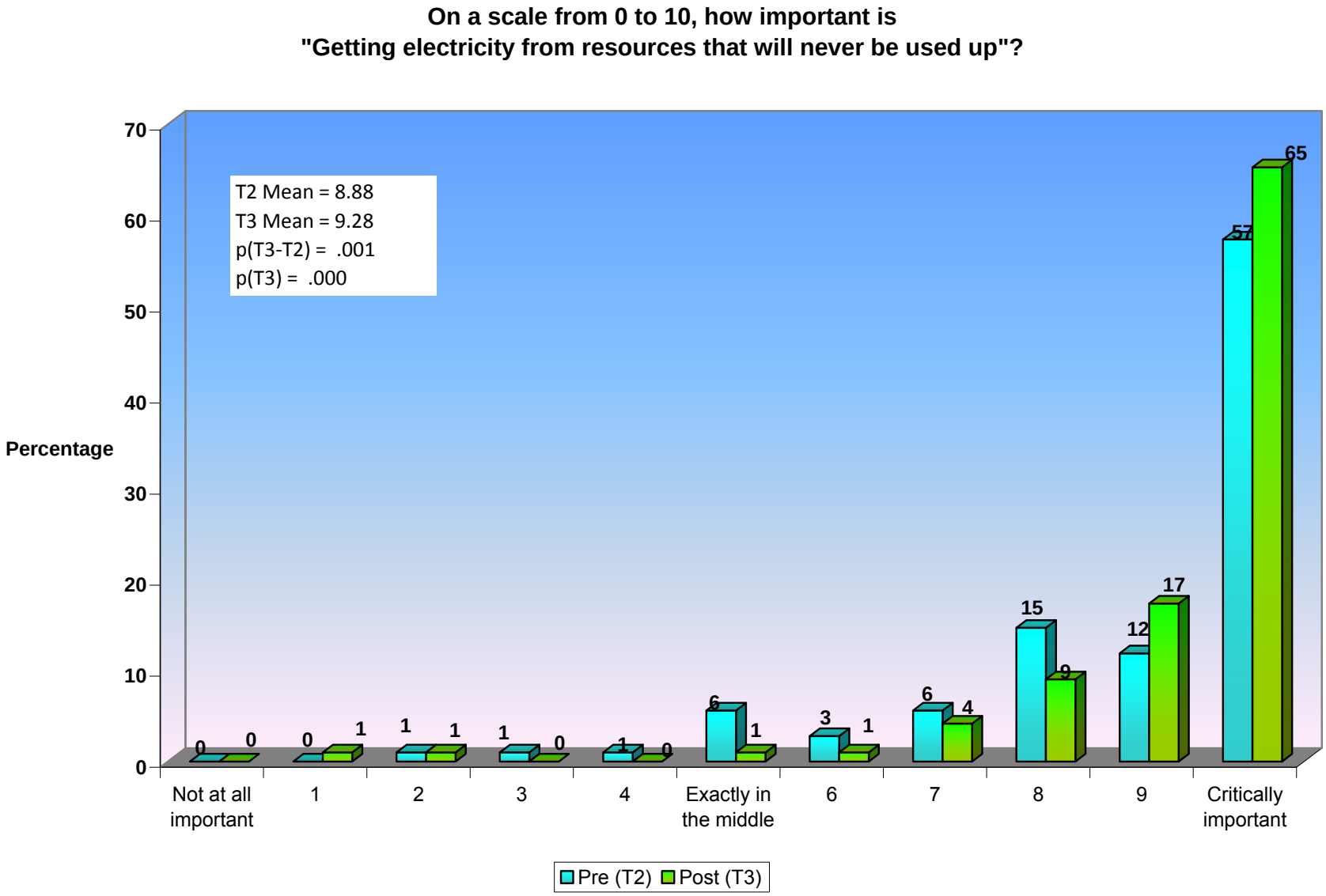
# Figure 74: How Important: Reducing Radioactive Wastes



# Figure 75: How Important: Creating Jobs in Vermont

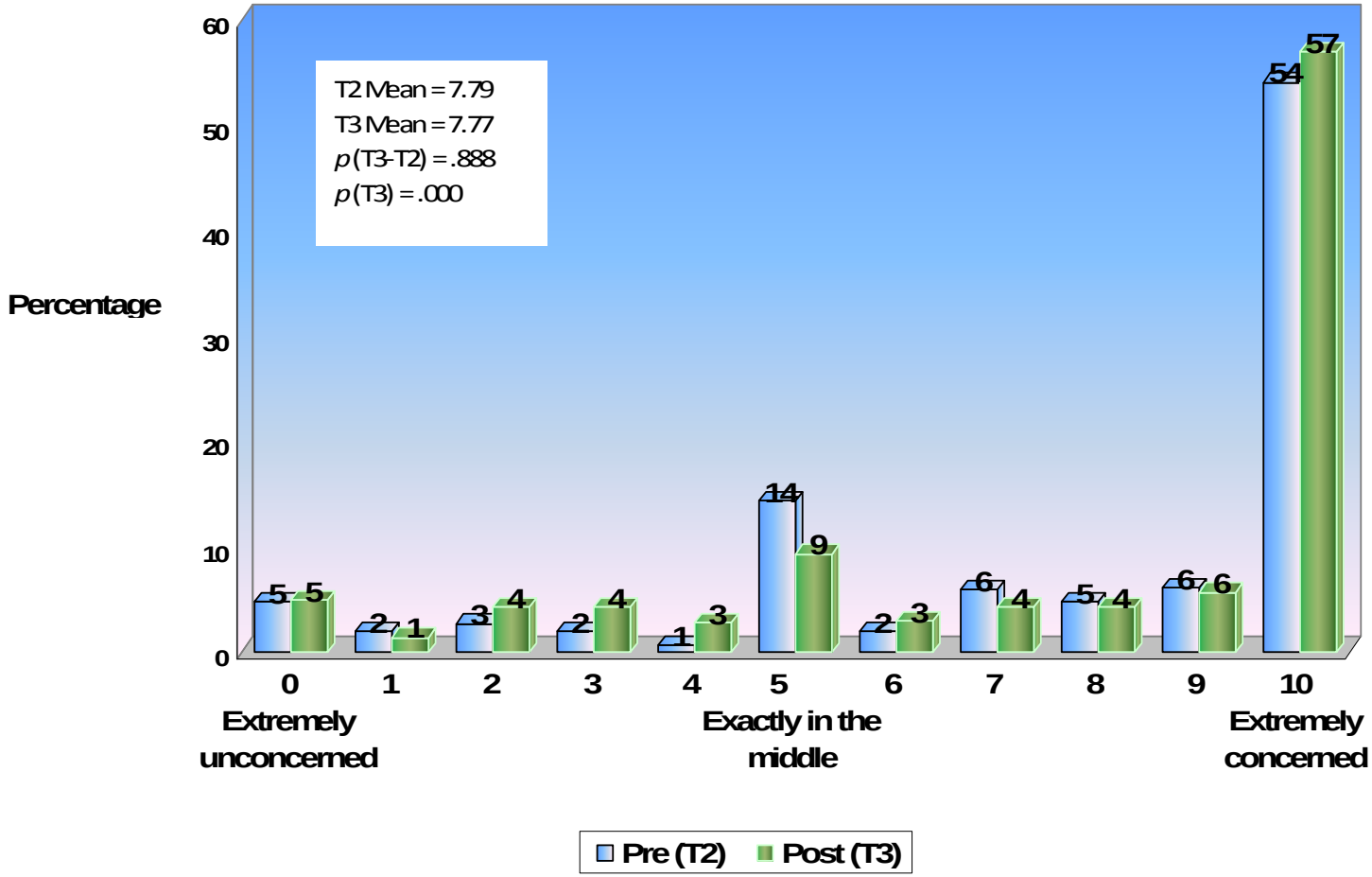


# Figure 76: How Important: Using **Resources That Will Never Be Used up**



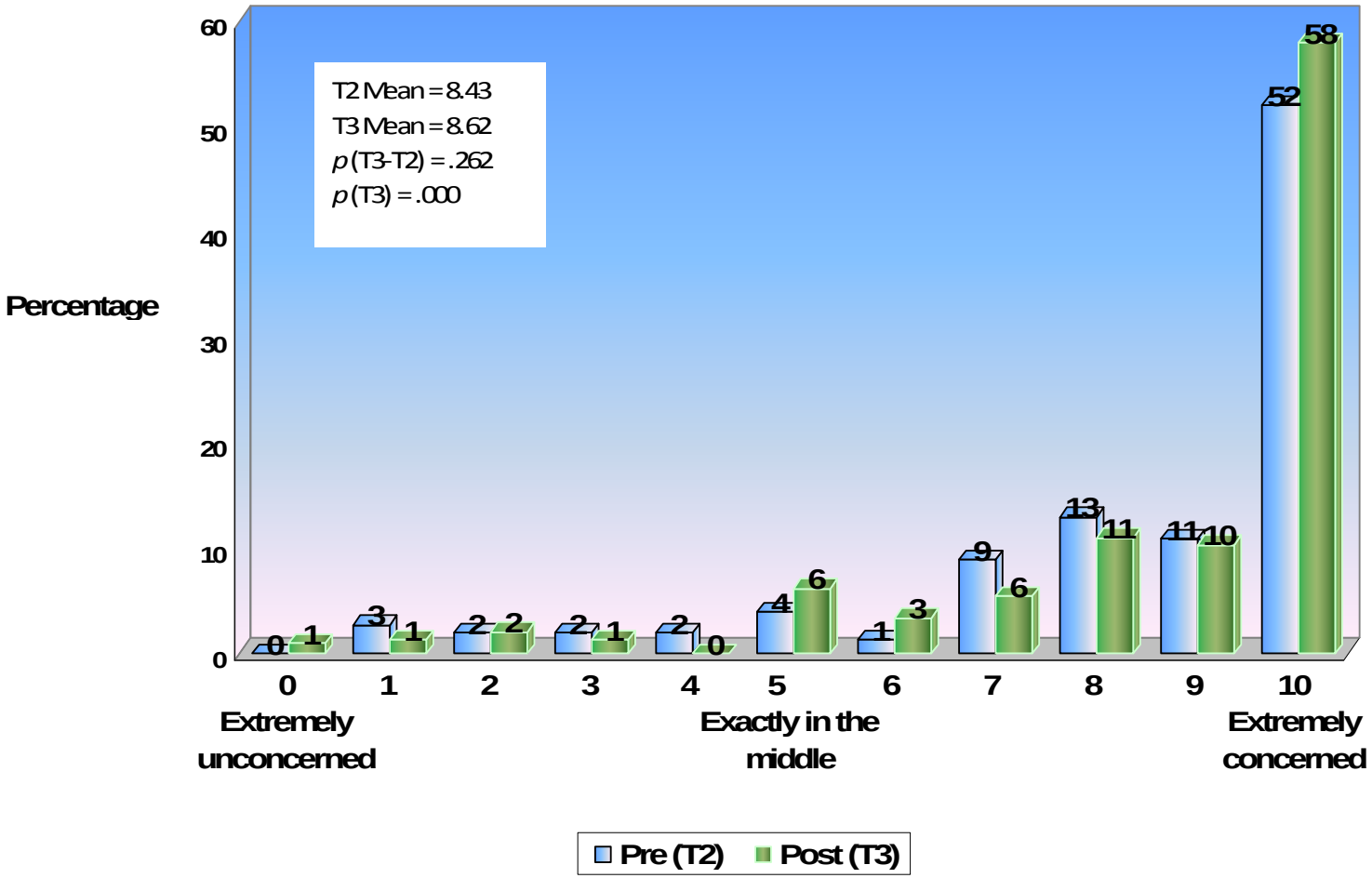
# Figure 77: How Concerned: Radioactive Waste

**On another scale of 0 to 10, where 0 is extremely unconcerned, 10 is extremely concerned, and 5 is exactly in the middle, how concerned do you are you about radioactive waste from nuclear plants?**



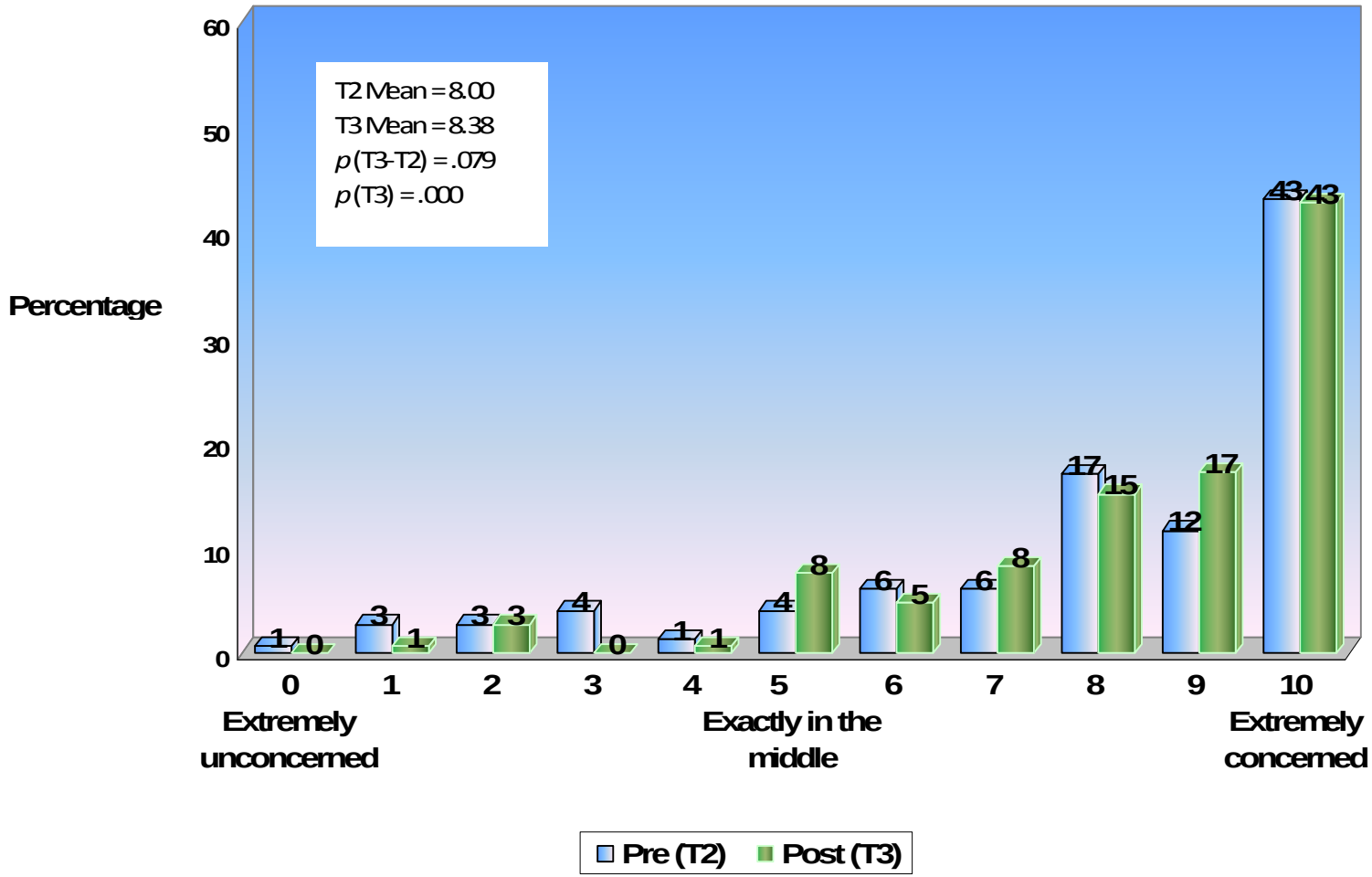
# Figure 78: How Concerned: Greenhouse Gases

**On another scale of 0 to 10, where 0 is extremely unconcerned, 10 is extremely concerned, and 5 is exactly in the middle, how concerned do you are you about greenhouse gases produced by burning the fuel to make electricity?**



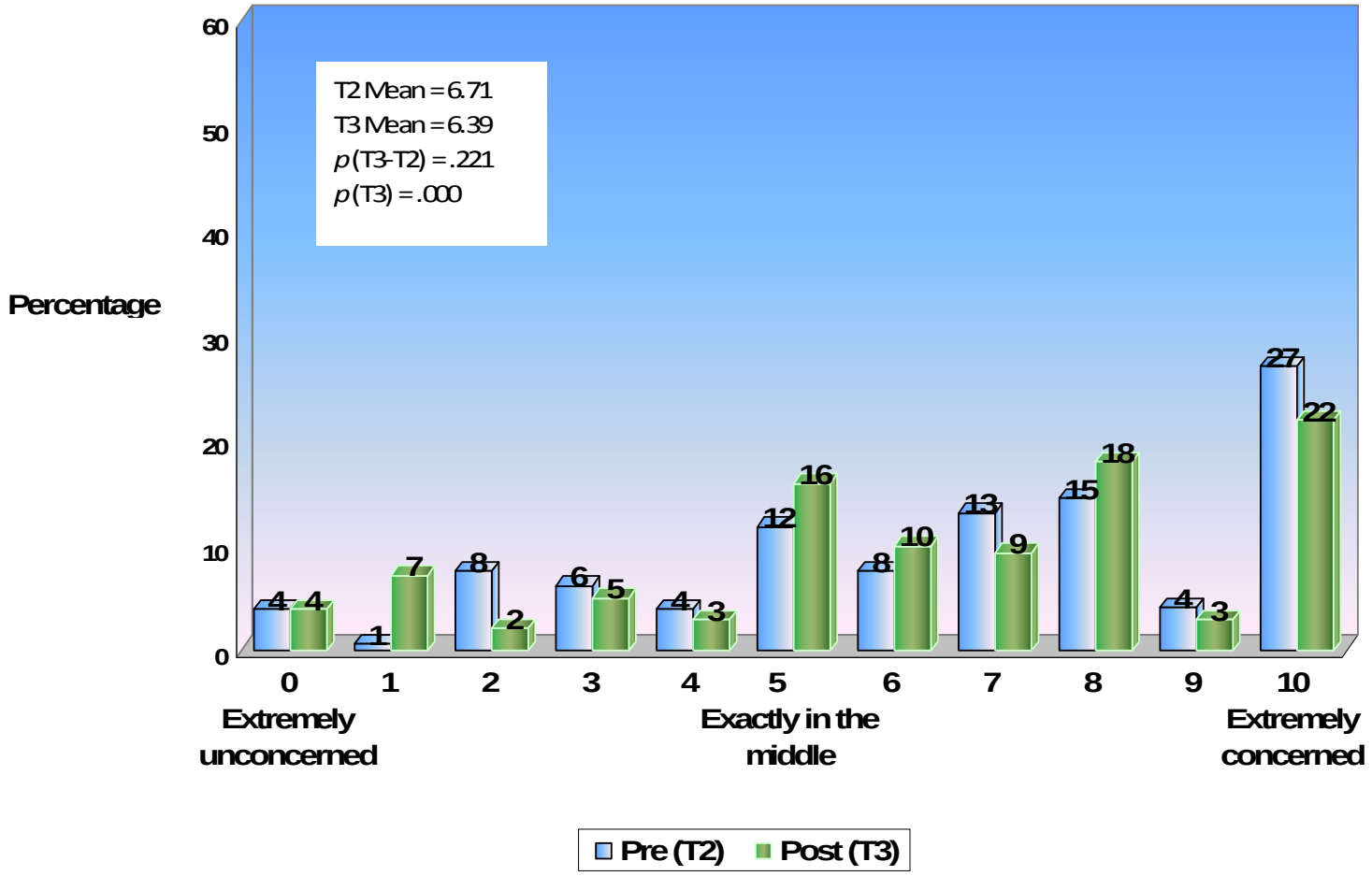
# Figure 79: How Concerned: Other Air Pollution

**On another scale of 0 to 10, where 0 is extremely unconcerned, 10 is extremely concerned, and 5 is exactly in the middle, how concerned do you are you about other air pollution produced by burning fuel to make electricity?**

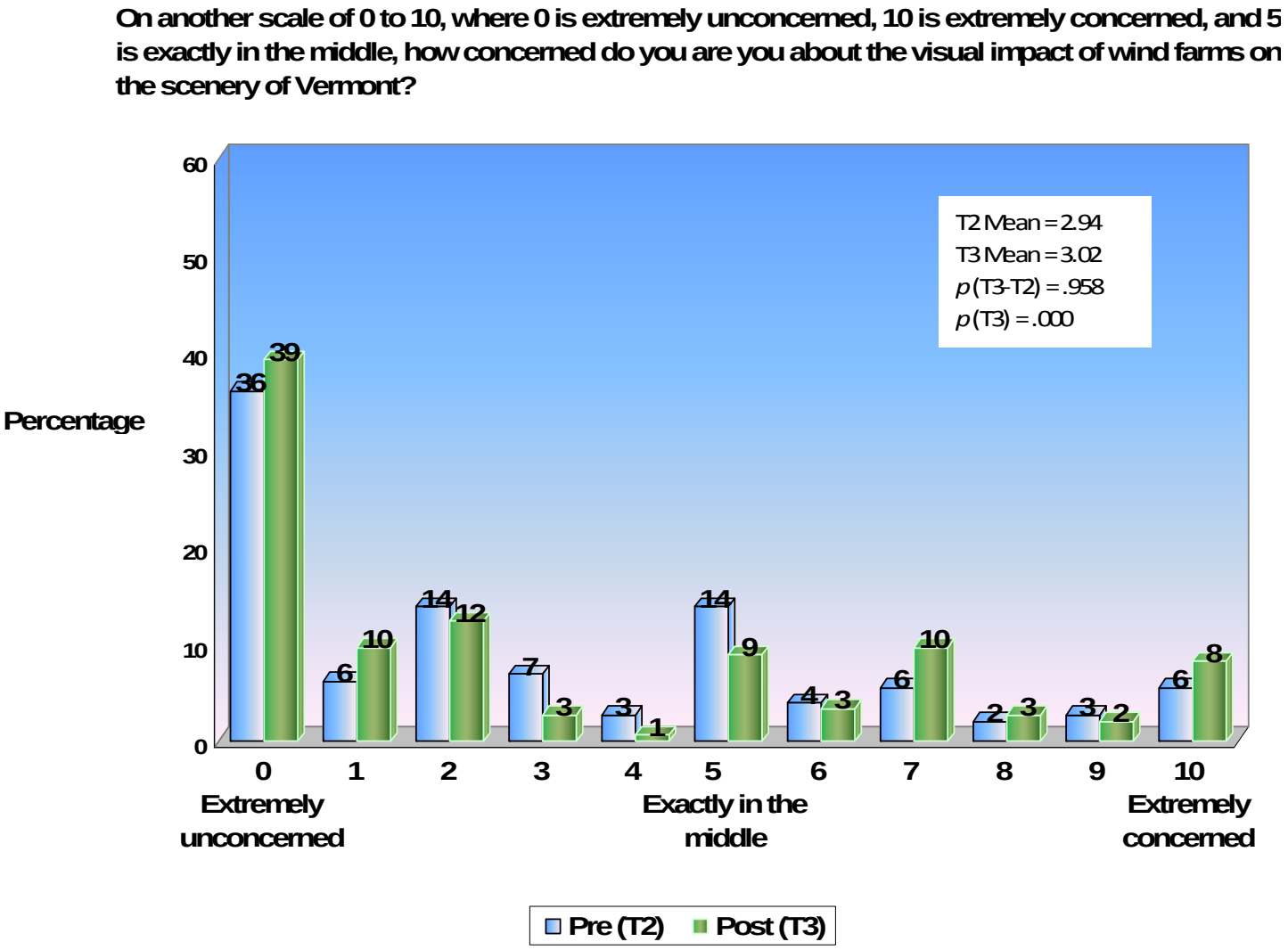


# Figure 80: How Concerned: Damage to River Habitats

**On another scale of 0 to 10, where 0 is extremely unconcerned, 10 is extremely concerned, and 5 is exactly in the middle, how concerned do you are you about damage to river habitats from building hydro power facilities?**



# Figure 81: How Concerned: Visual Impact of Wind Farms



# Figure 82: Only Direct Costs vs. Indirect Costs as Well

**Some people think that in choosing a source for electricity only the direct costs should be considered, at point 1. Other people think that indirect costs should also be considered, at point 7. Where would you place yourself?**

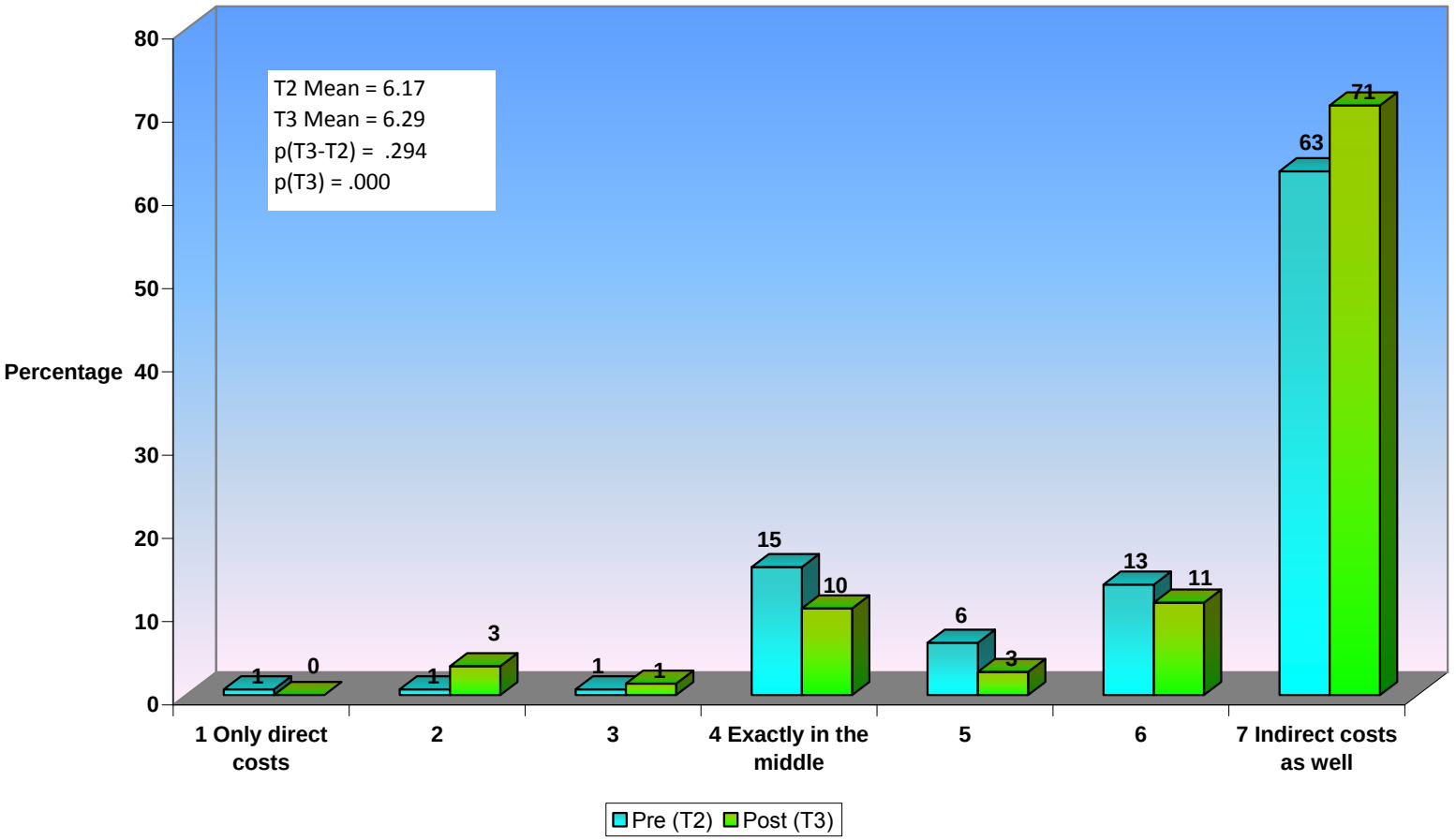
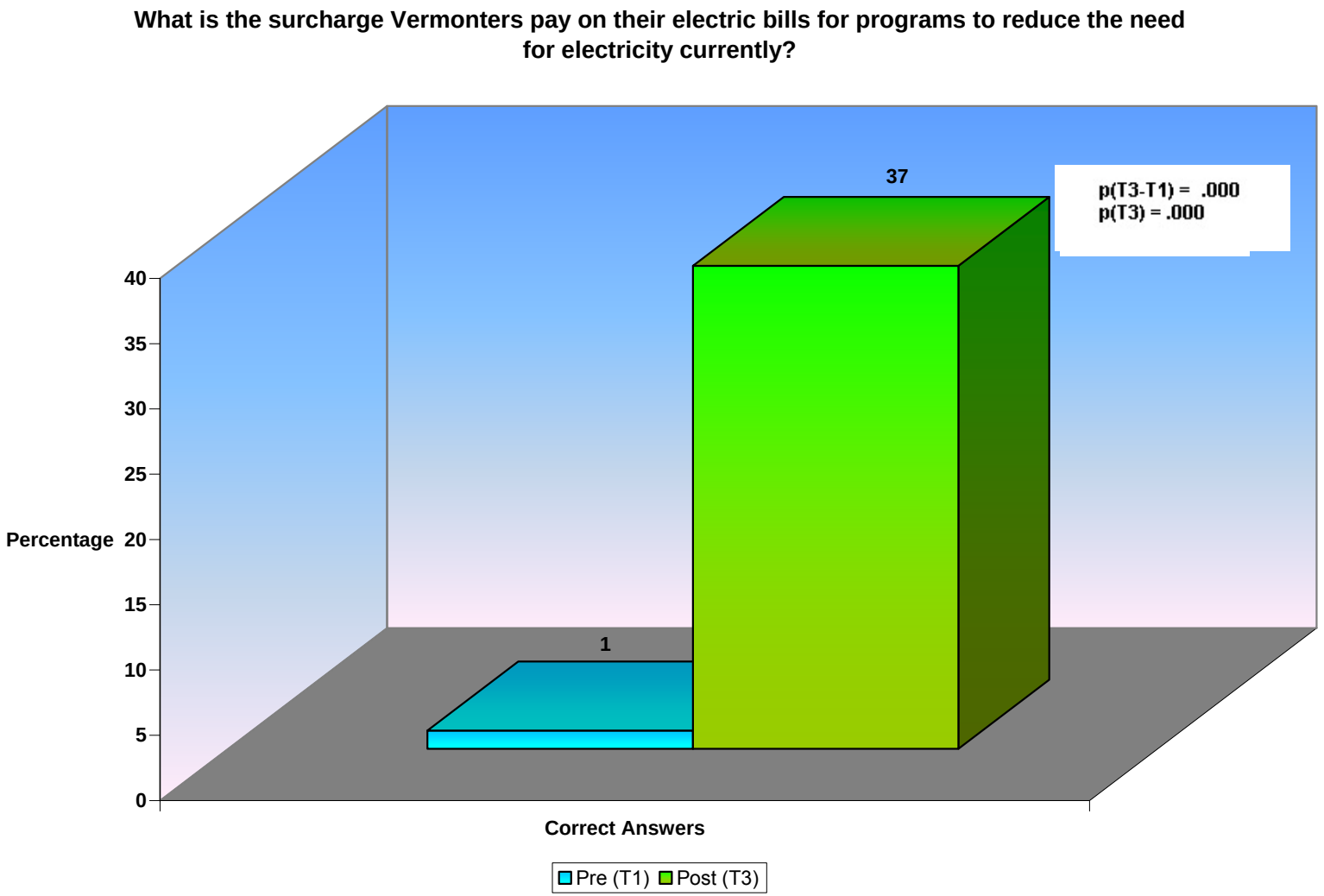
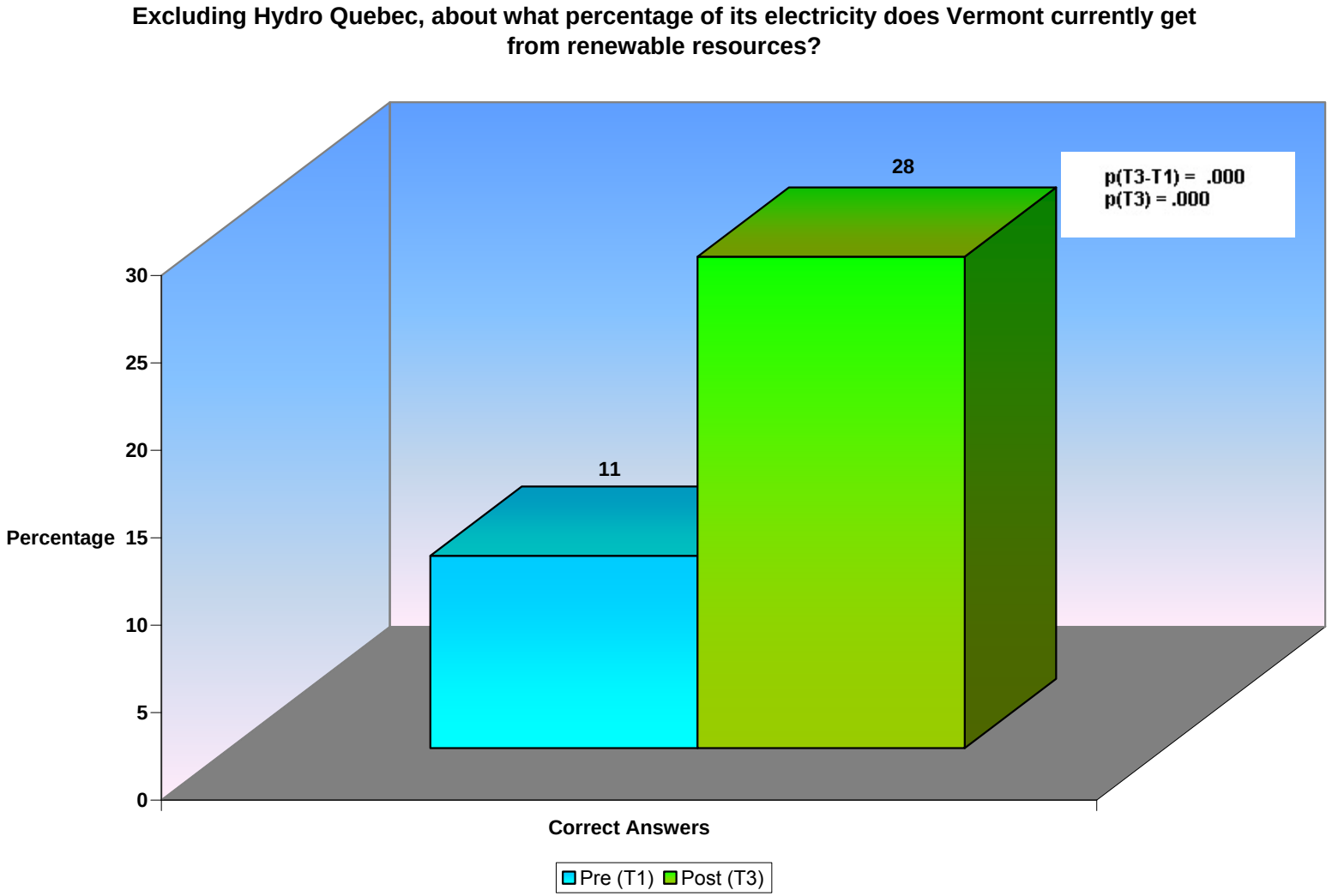


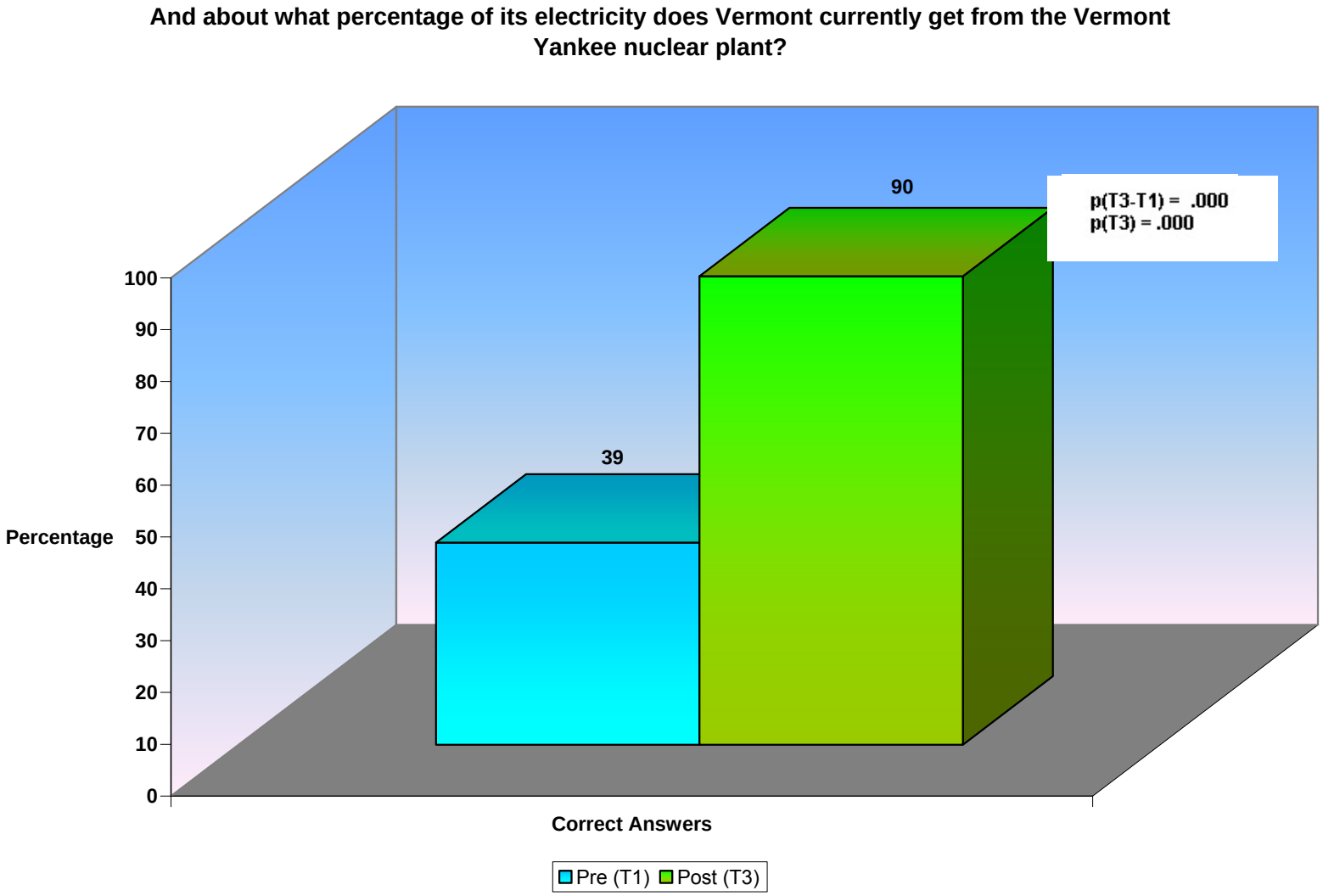
Figure 83: What is the surcharge of VT electric bill



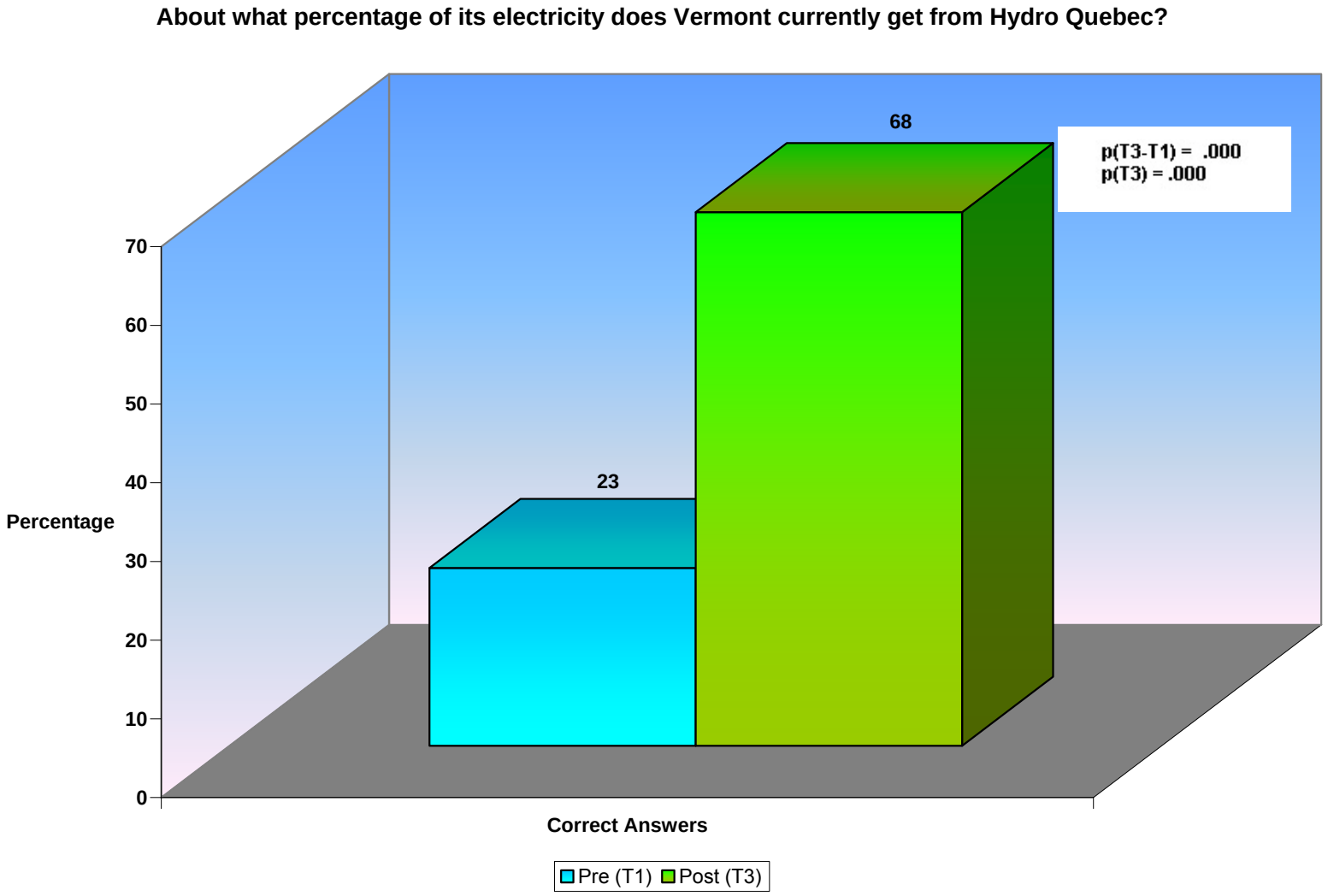
# Figure 84: What percentage from renewables



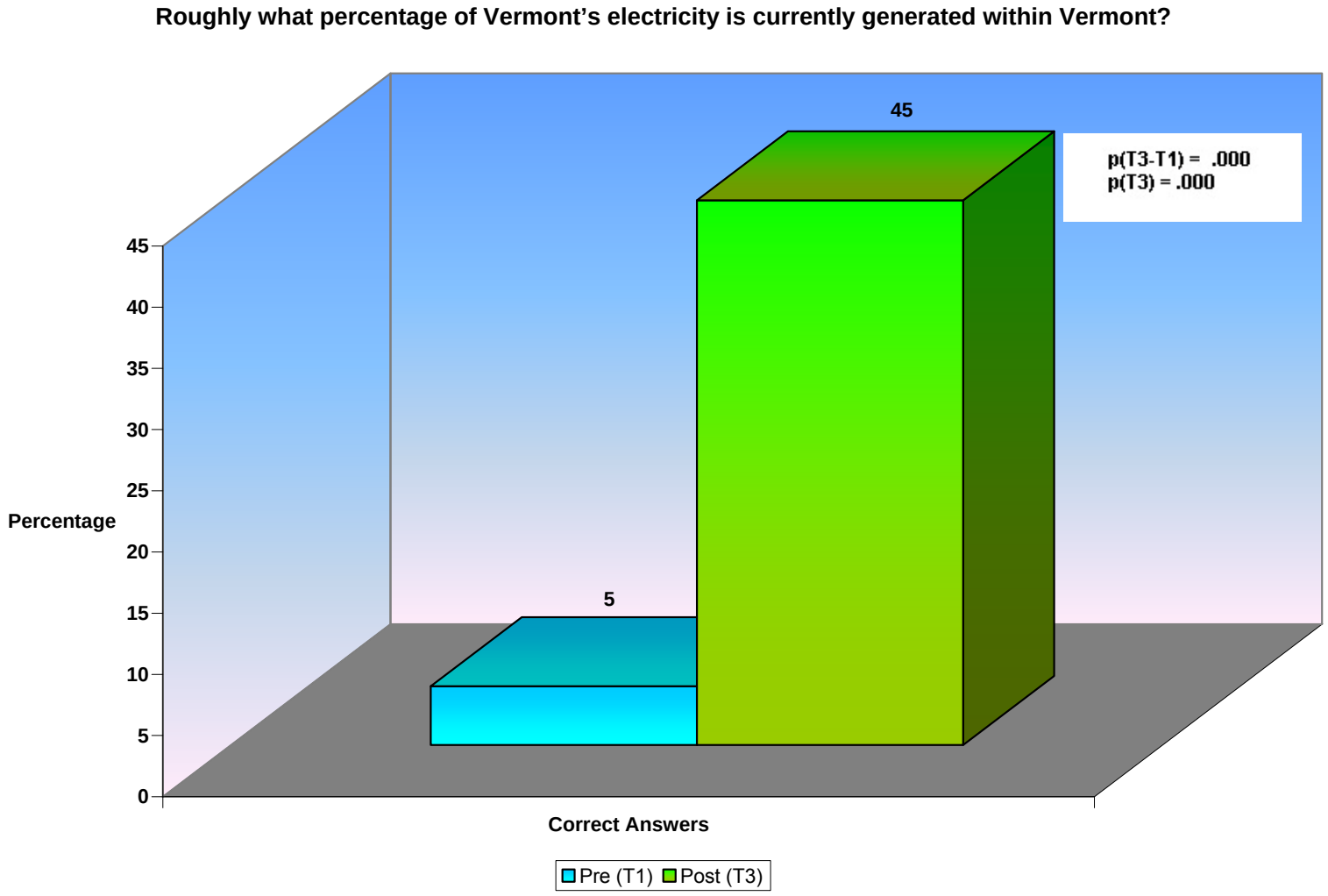
# Figure 85: What percentage from Yankee nuclear plant



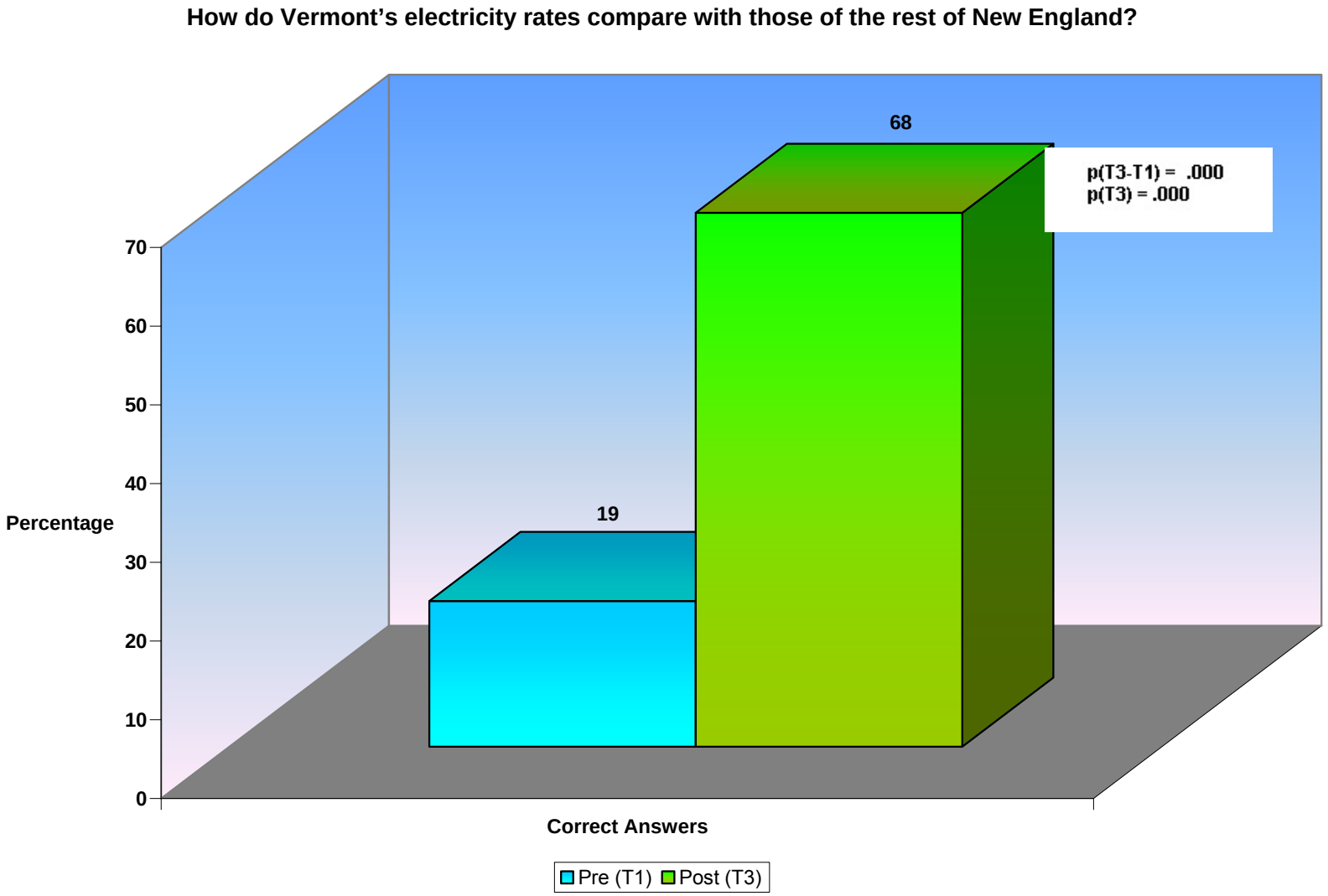
# Figure 86: What percentage from Hydro Quebec



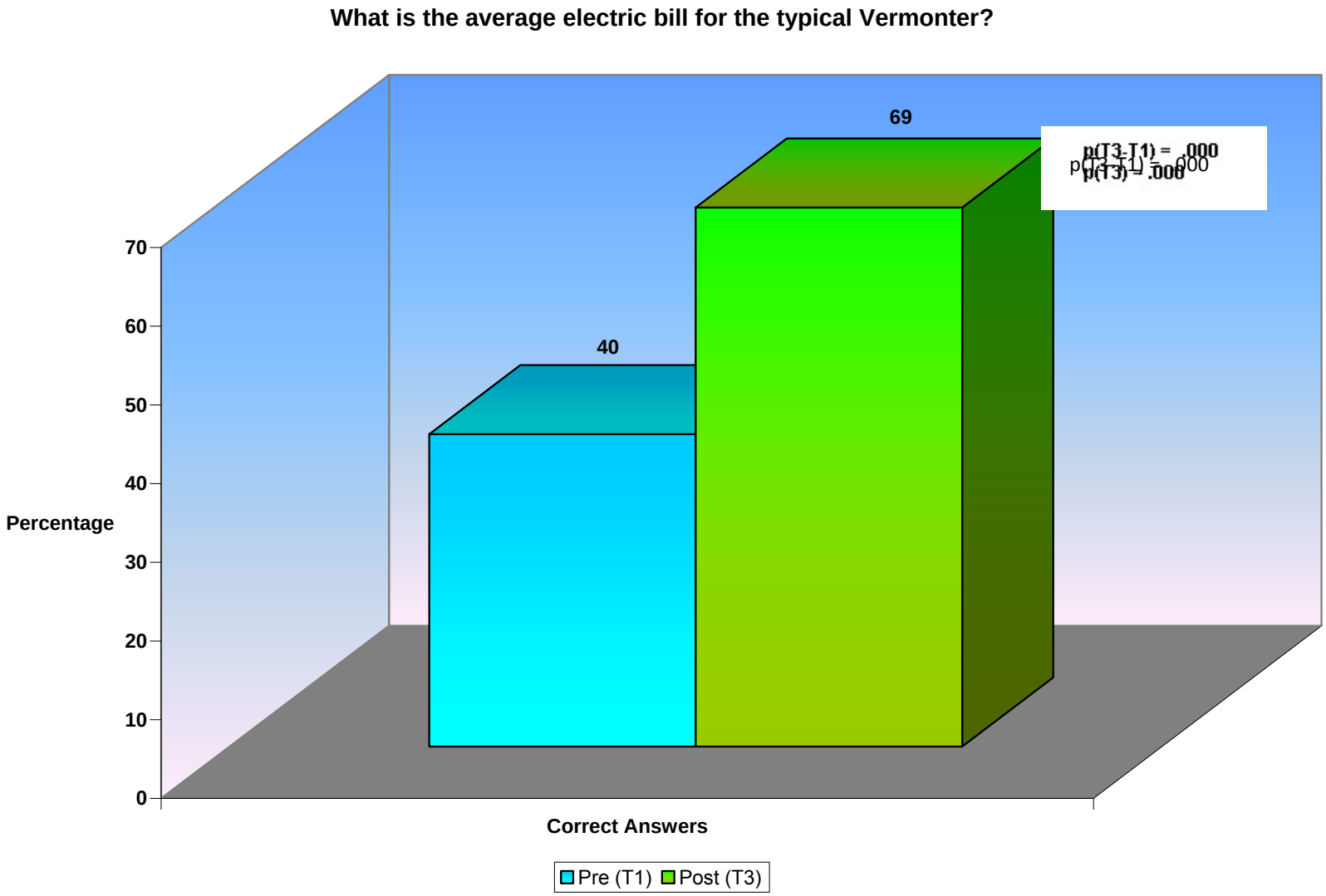
# Figure 87: What percentage from within Vermont



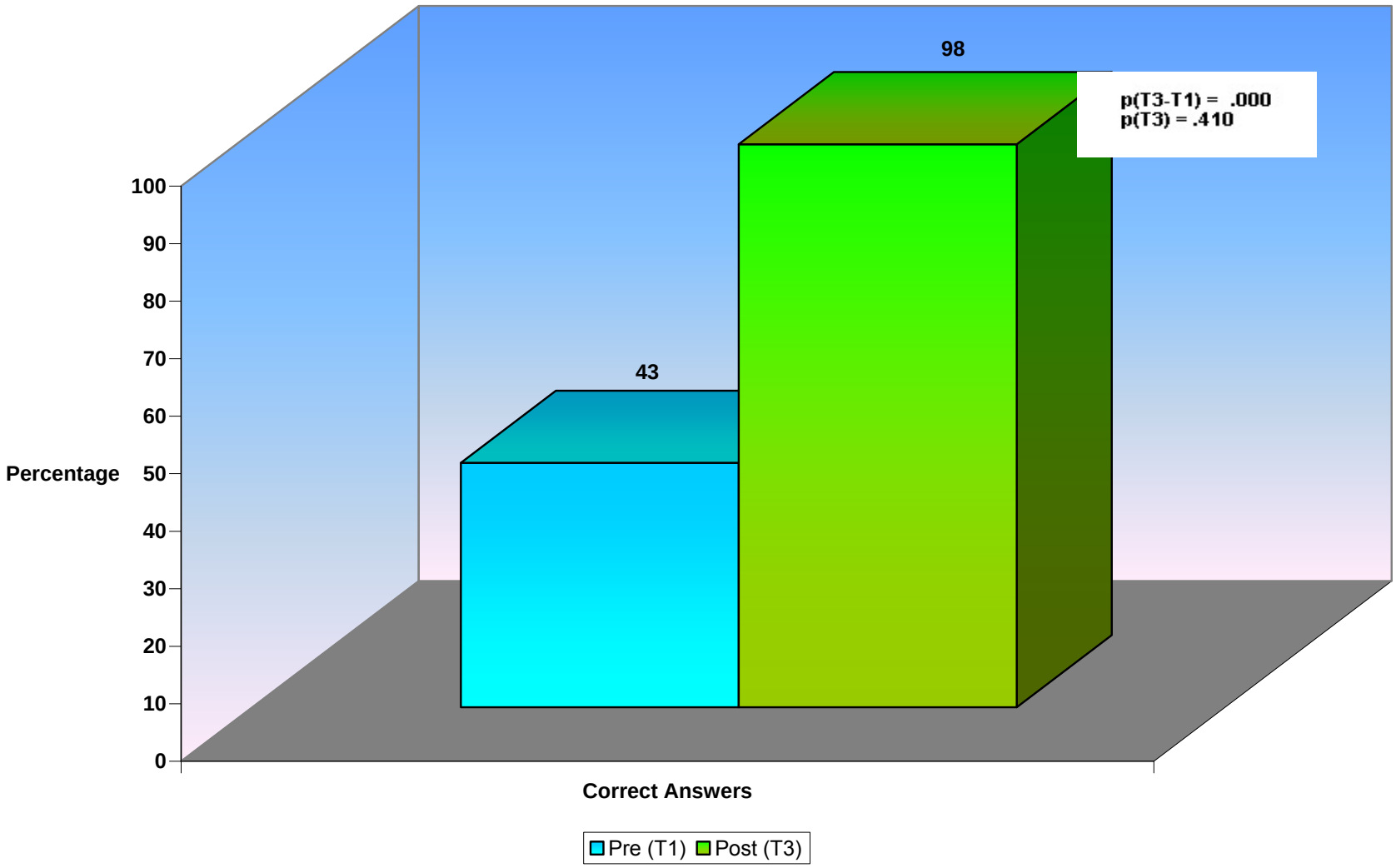
# Figure 88: Rates compared to rest of New England



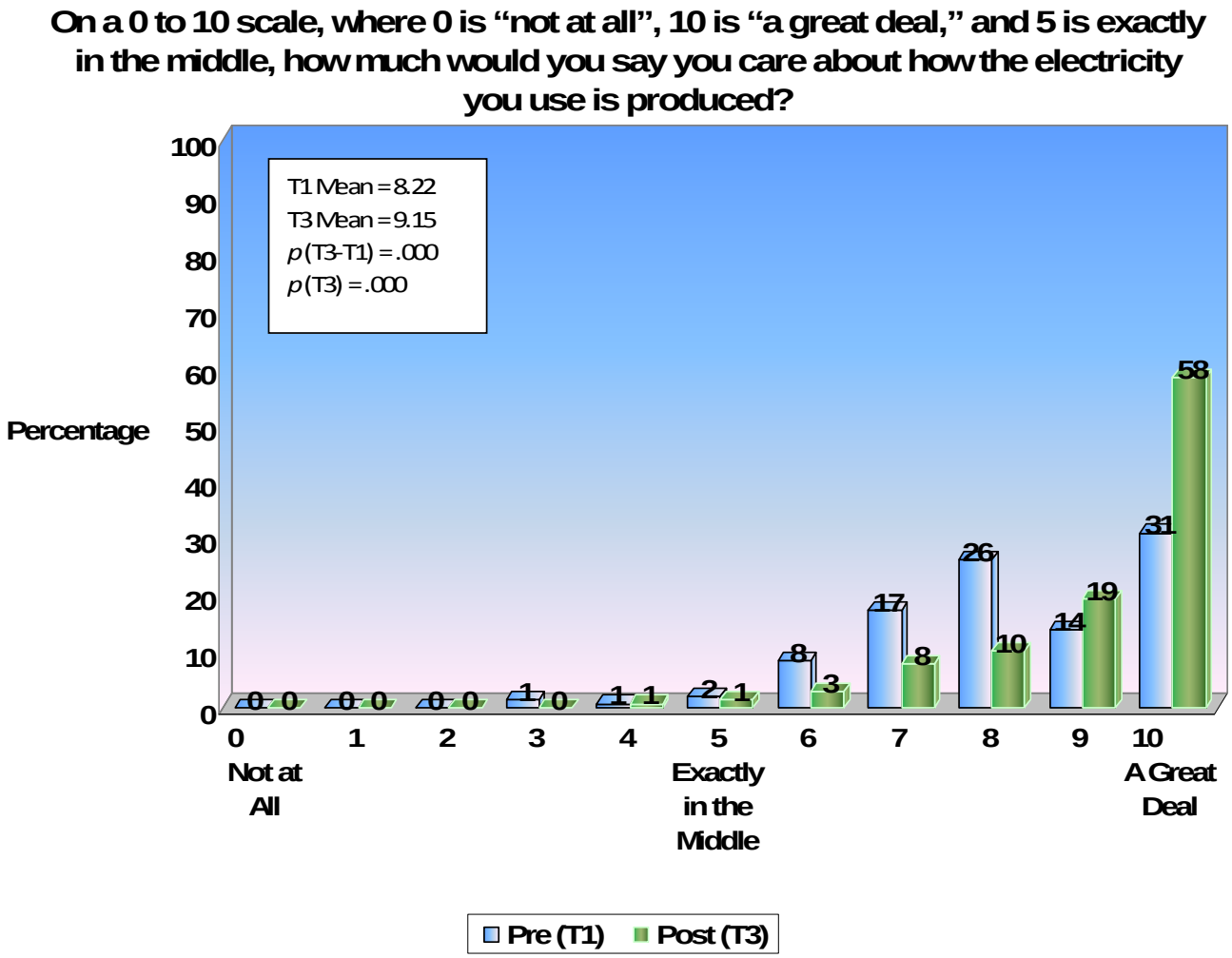
# Figure 89: Average bill for Vermonter



# Figure 90: Contract with Yankee Nuclear expires

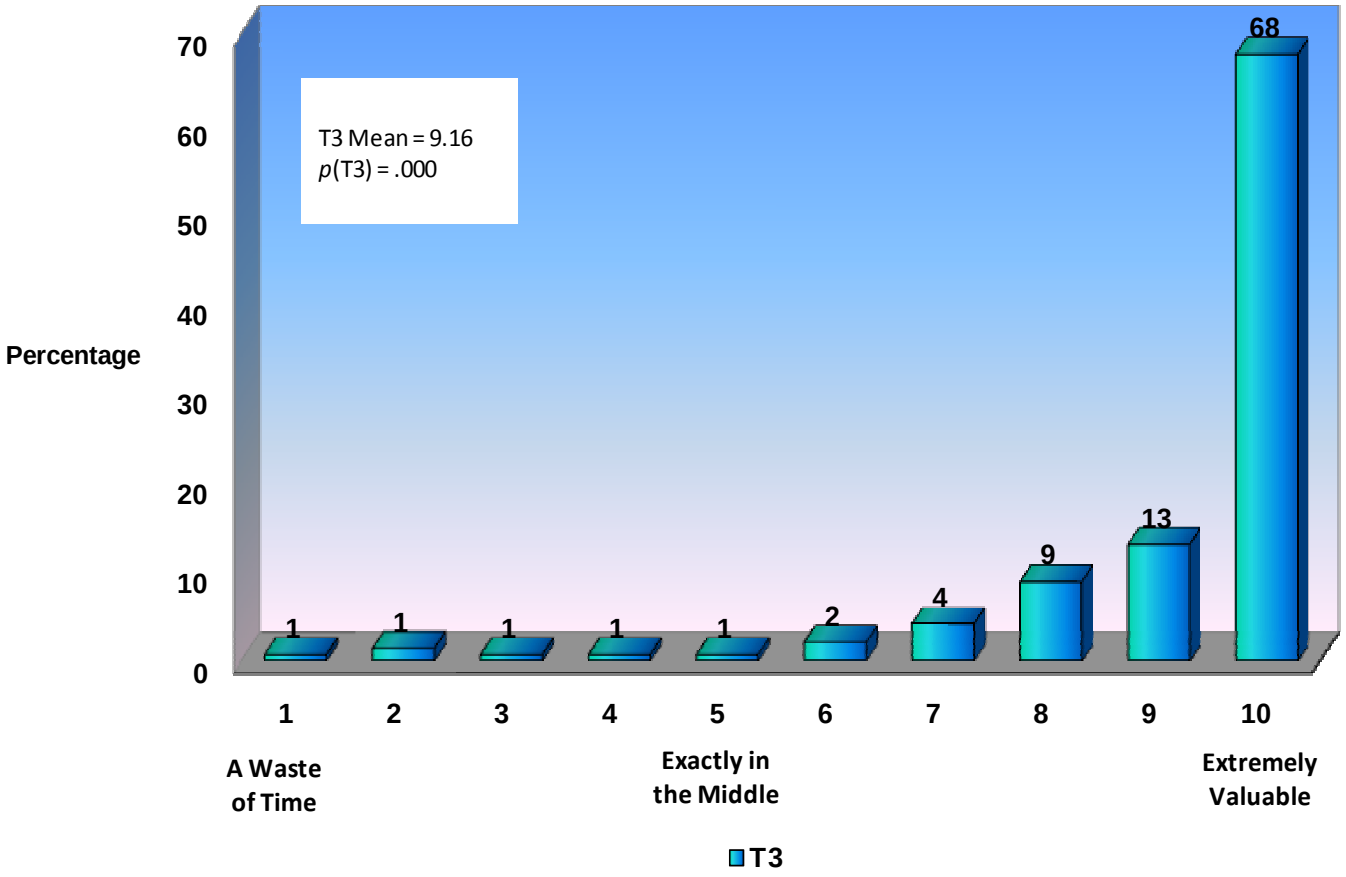


# Figure 91: How Much Do You Care?



# Figure 92: How valuable: Event as a whole

On a scale of 0 to 10, where 0 is "a waste of time", 10 "extremely valuable," and 5 is exactly in the middle, how valuable was the event as a whole in helping you clarify your positions on the issues?



# Figure 93: How Valuable: Small Group Discussions

On a scale of 0 to 10, where 0 is "a waste of time", 10 "extremely valuable," and 5 is exactly in the middle, how valuable was participating in the small group discussions in helping you clarify your positions on the issues?

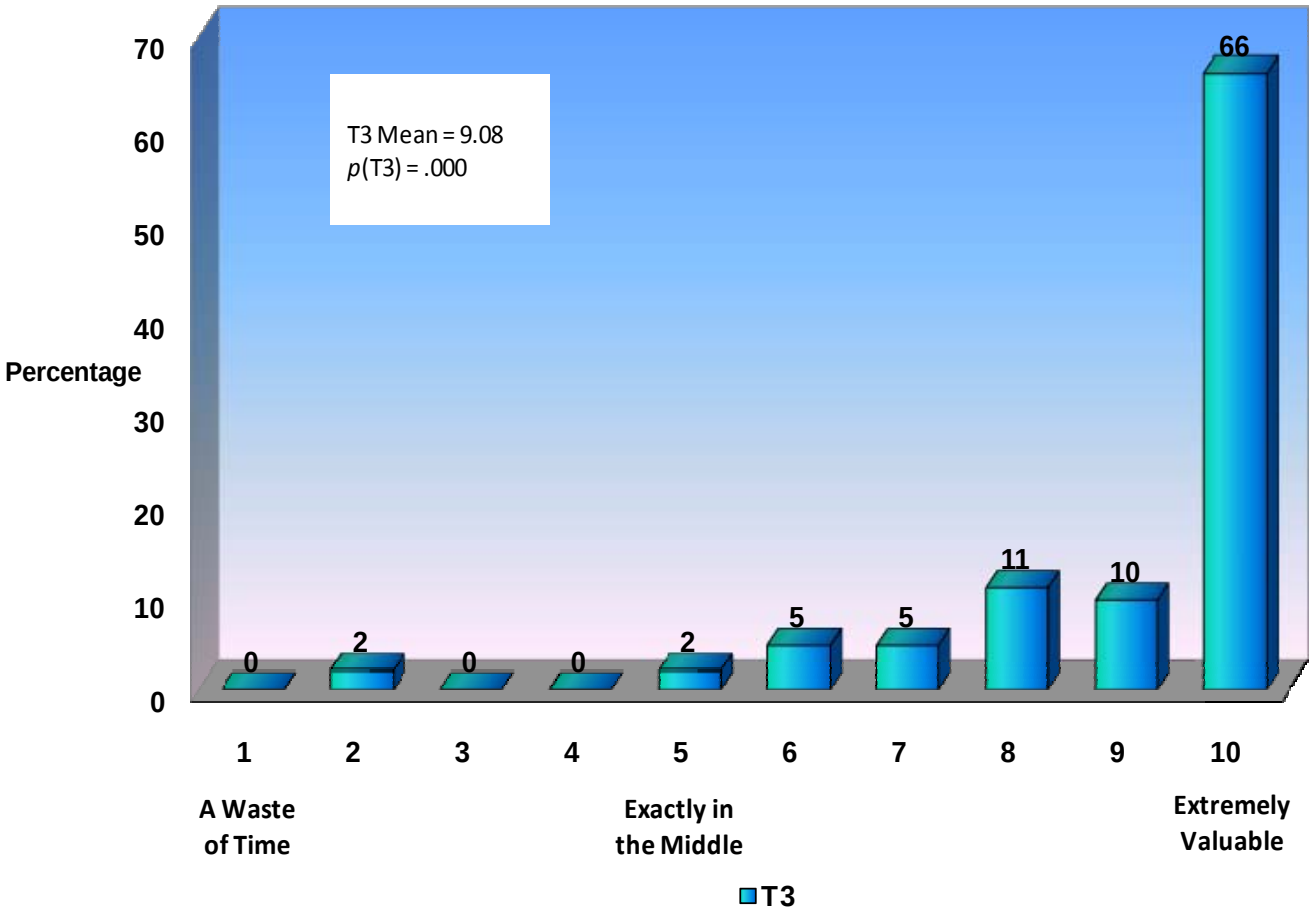
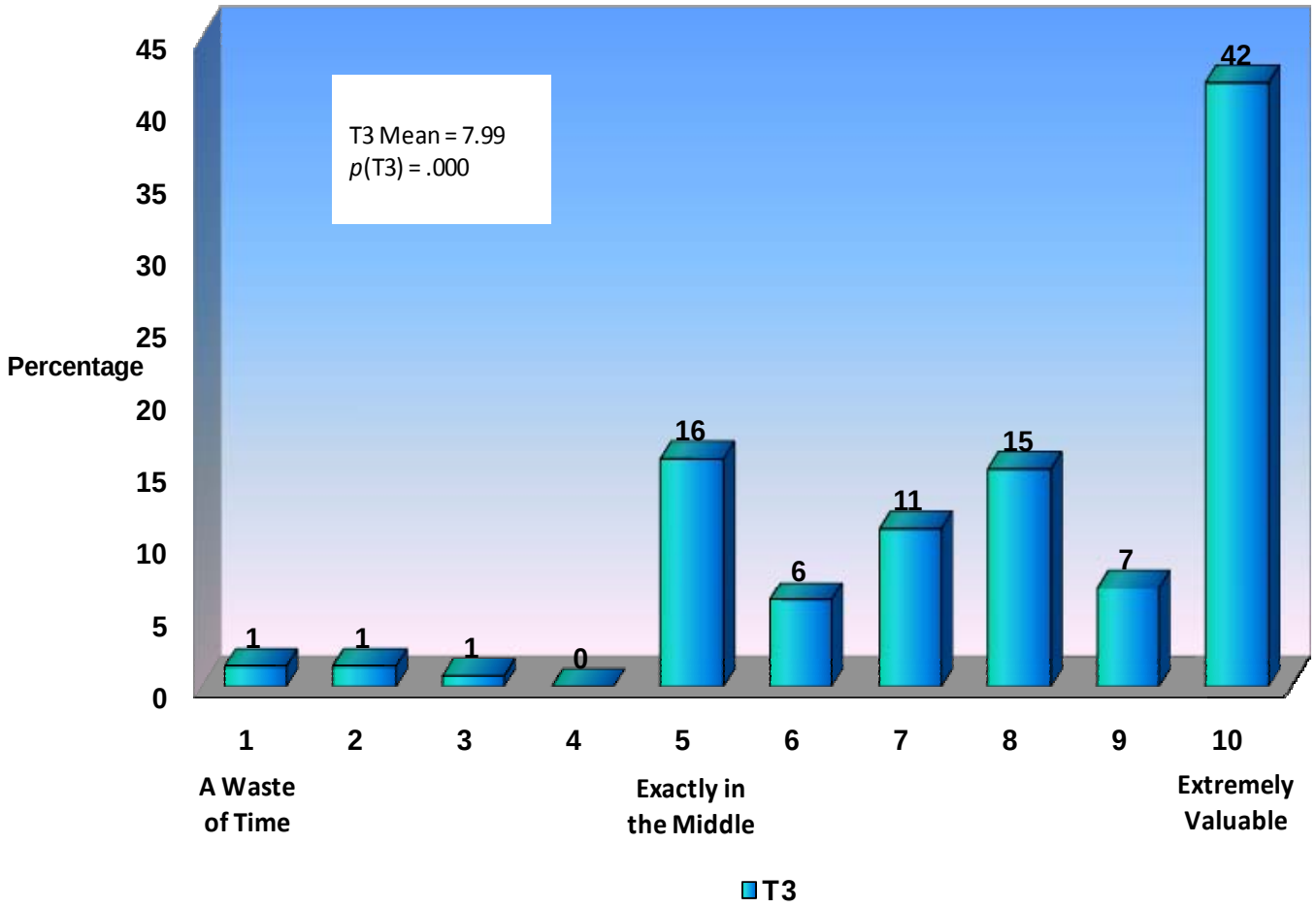


**Figure 94: How Valuable: Talking outside Formal**

On a scale of 0 to 10, where 0 is "a waste of time", 10 "extremely valuable," and 5 is exactly in the middle, how valuable was talking outside of the formal discussions in helping you clarify your positions on the issues?




## Discussions

**Figure 95: Moderator Fostered Equal Participation**

And how strongly would you agree or disagree with each of the following statements? My small group moderator provided the opportunity for everyone to participate in the discussion

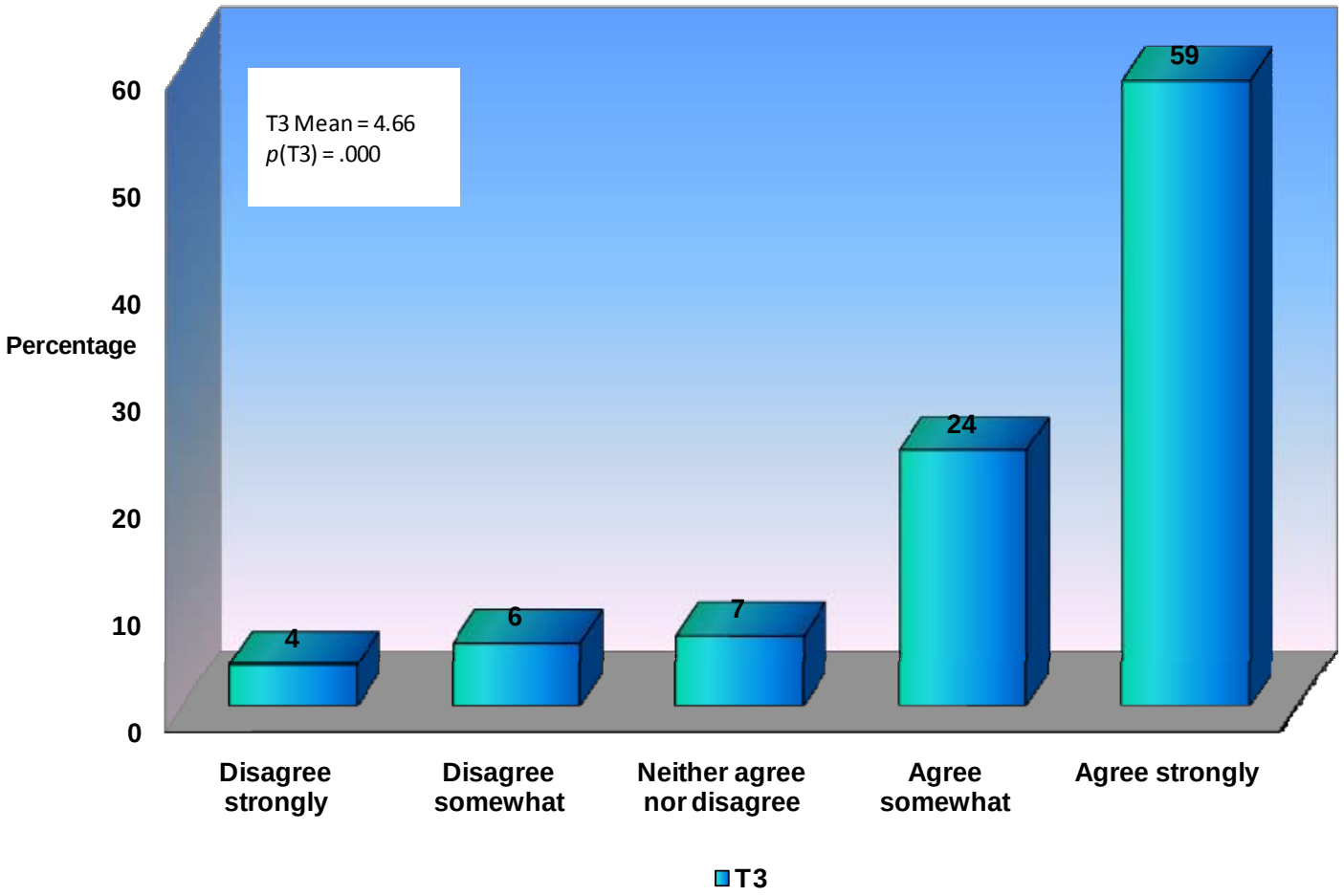
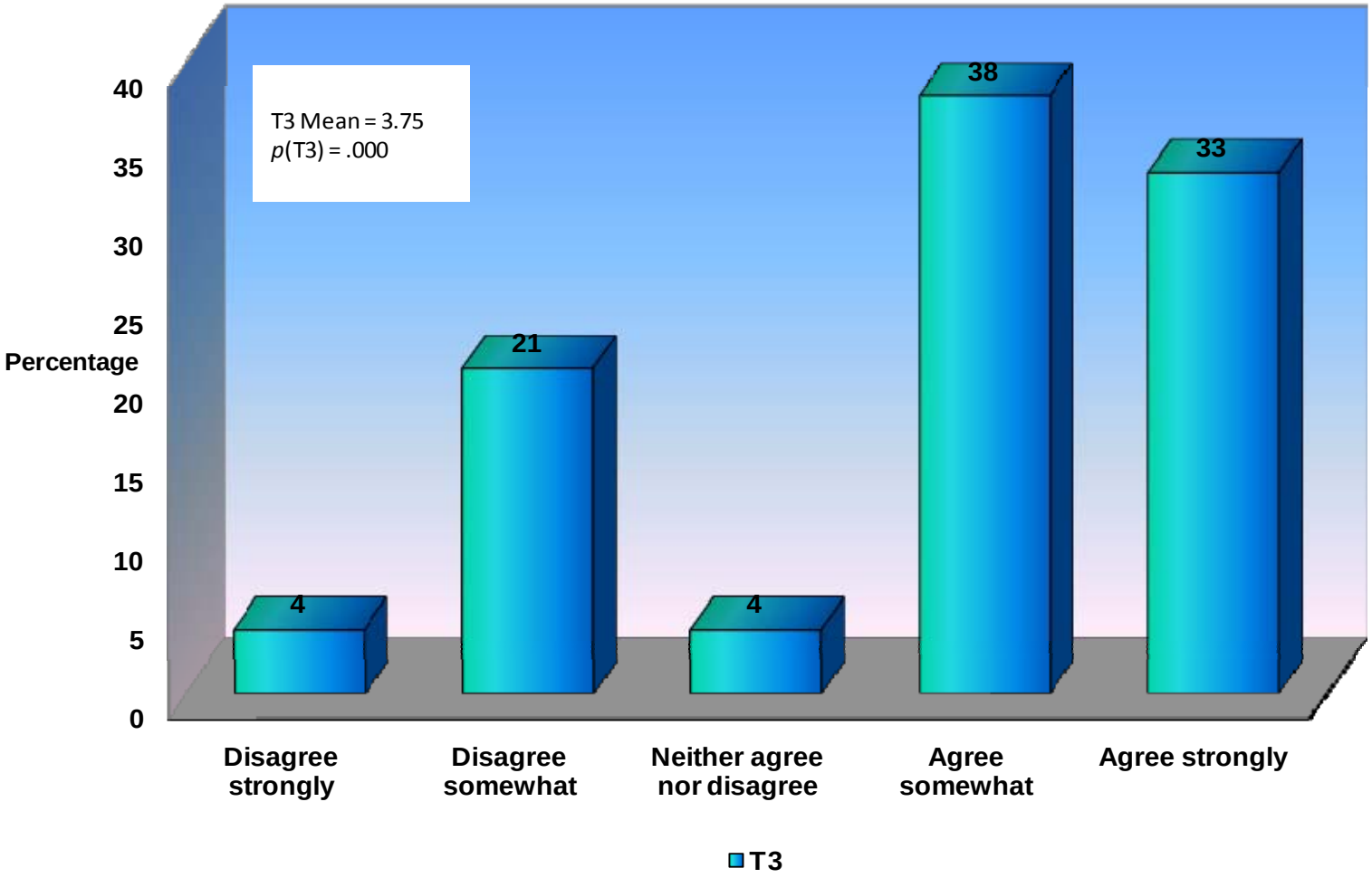


**Figure 96: Small Group Members Participated Equally**

And how strongly would you agree or disagree with each of the following statements? The members of my small group participated relatively equally in the discussions



## Figure 97: Important Aspects Covered

And how strongly would you agree or disagree with each of the following statements? The important aspects of the issues were covered in the group discussions.

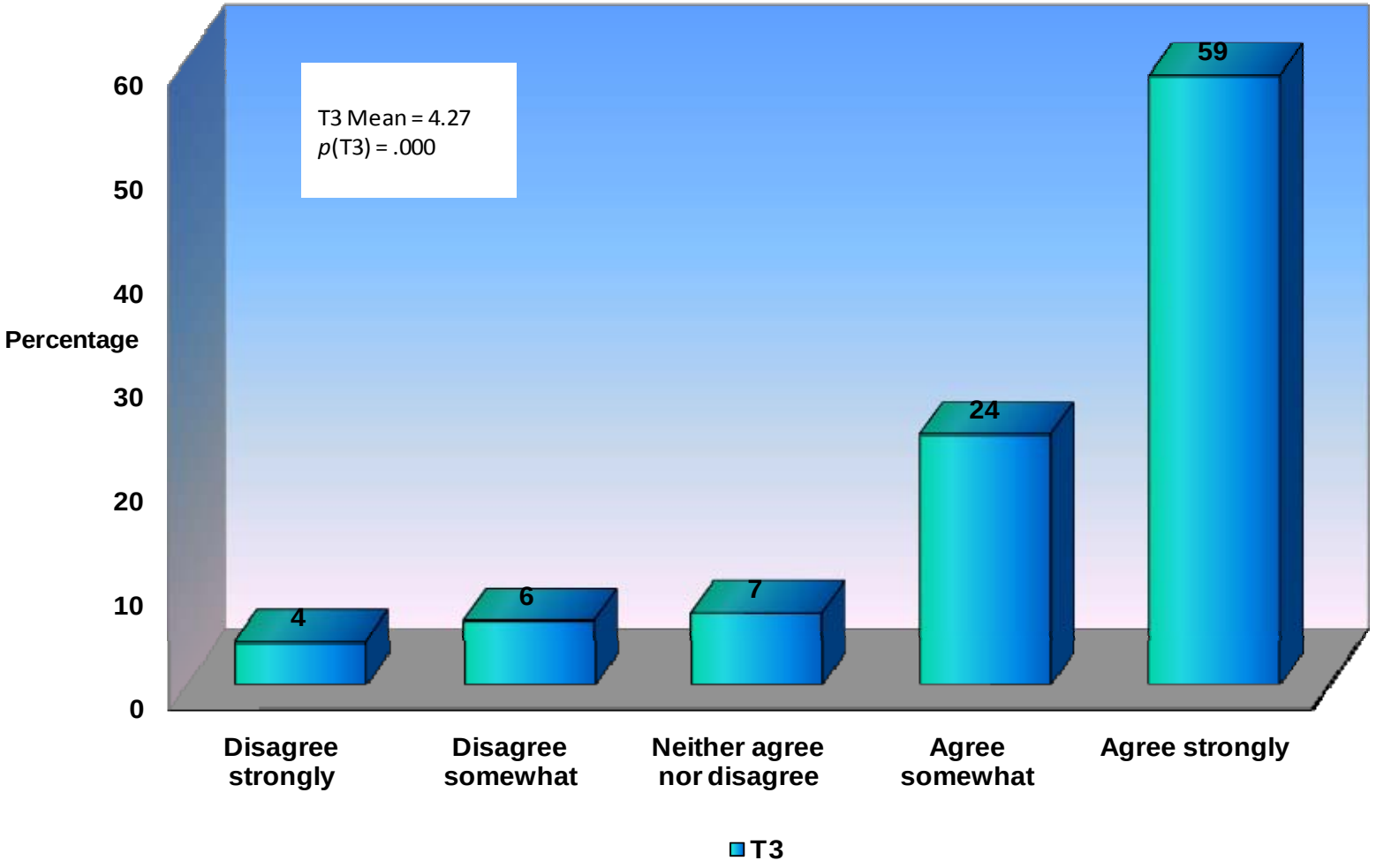


**Figure 98: Briefing Document Fair**

And how strongly would you agree or disagree with each of the following statements? The briefing document presented competing arguments fairly.

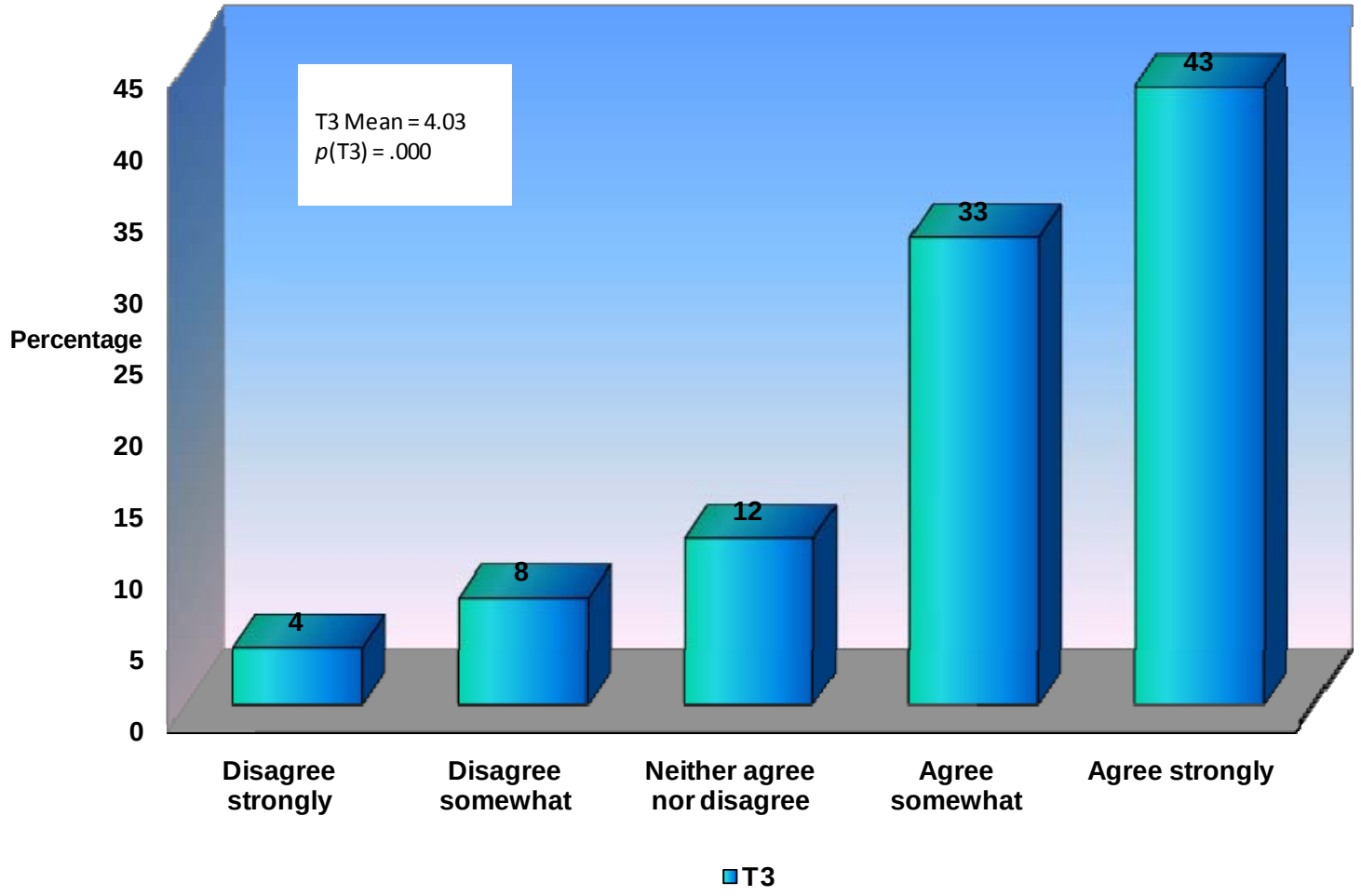
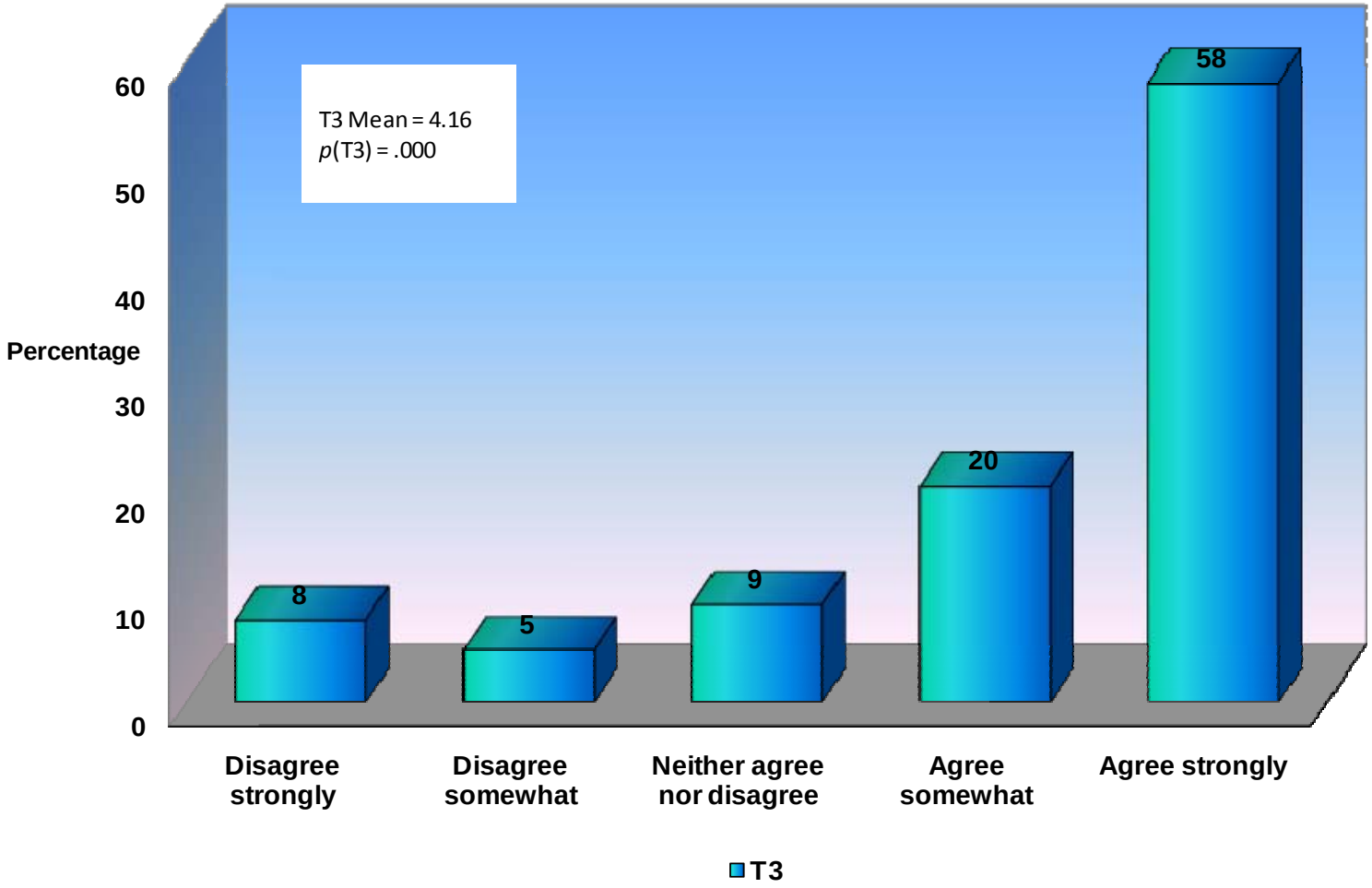


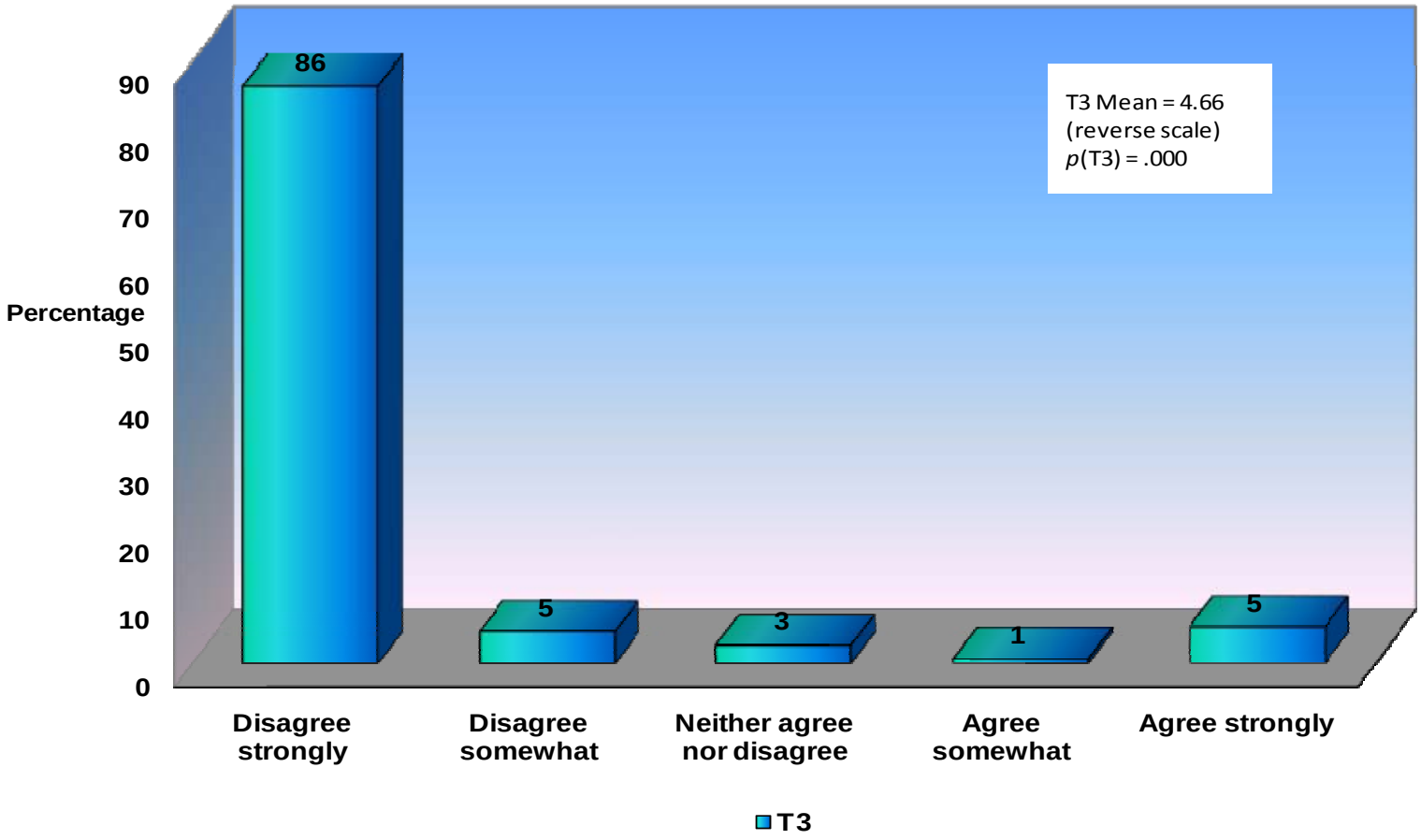
**Figure 99: Moderator Ensured Consideration of Opposing Arguments**

And how strongly would you agree or disagree with each of the following statements? My small group moderator tried to make sure that opposing arguments were considered.

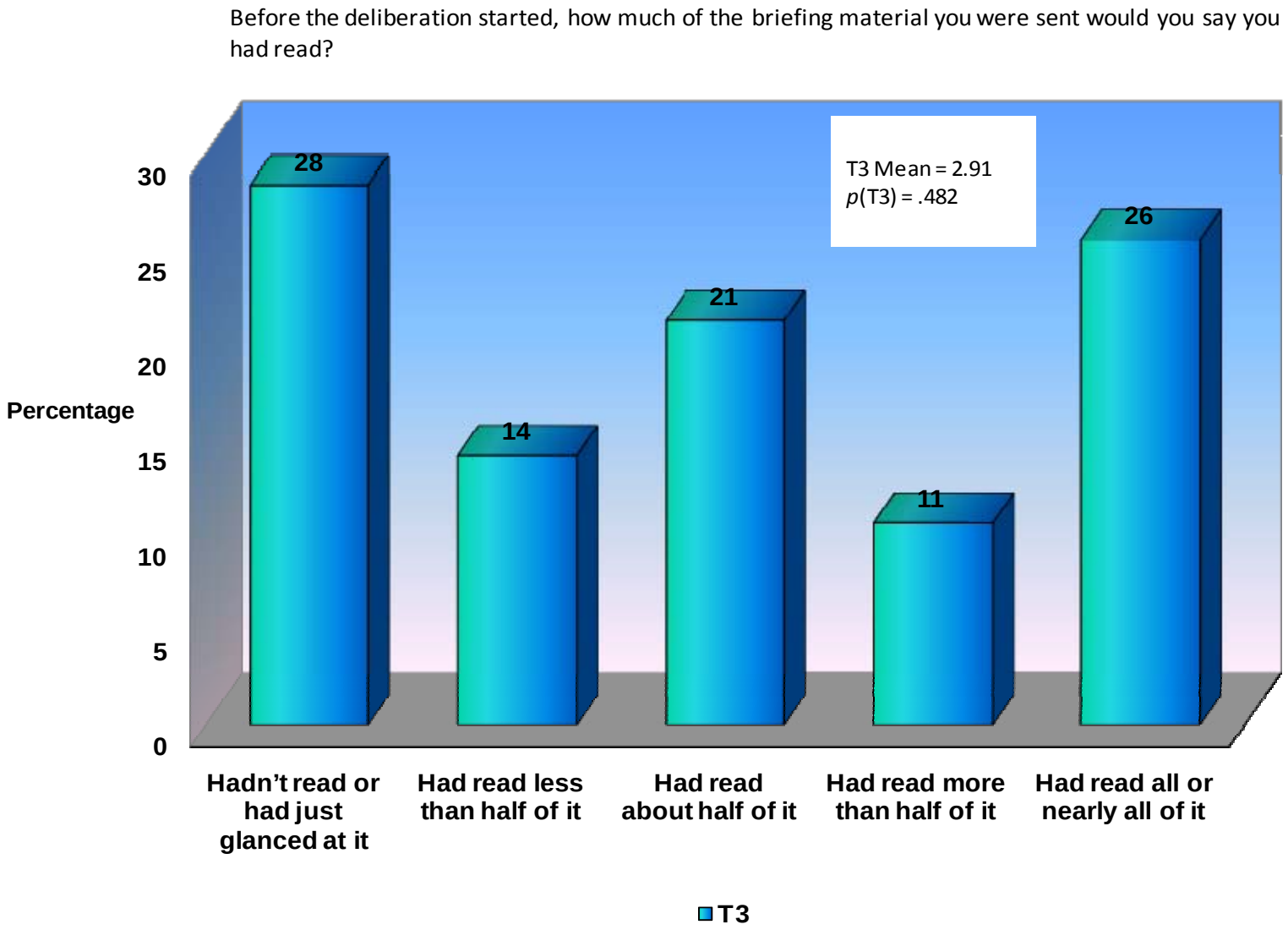


## Figure 100: Moderator Tried to Influenced Group

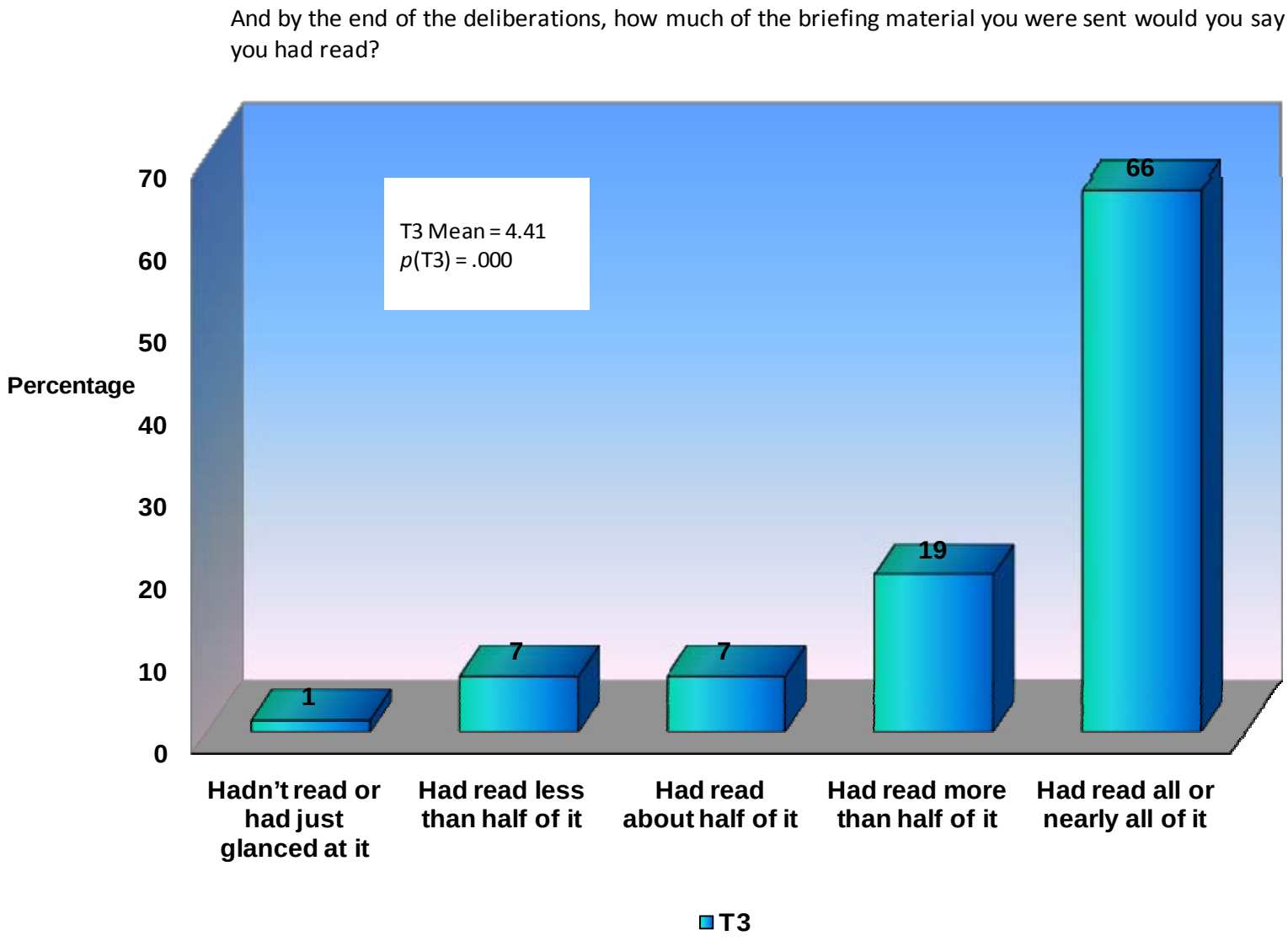
And how strongly would you agree or disagree with each of the following statements? My small group moderator sometimes tried to influence the group with this or her own views.



# Figure 101: How Much of the Briefing Document Read before Deliberating



# Figure 102: How Much of the Briefing Document Read by the End



# Figure 103: Learning about People Very Different from Oneself

And how strongly would you agree or disagree with each of the following statements? I learned a lot about people very different from me—about what they and their lives are like.