

Yukon Energy Corporation

Knowledge, Awareness and Opinion Research Public and Stakeholder Survey Results Research Report 2

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YUKON ENERGY CORPORATION PUBLIC OPINION ONLINE SURVEY RESULTS – JUNE 2010

Introduction

A combination of telephone and online surveys were conducted with the public and community and business leaders in communities throughout the Yukon between June 2 – July 15, 2010.

The survey methods covered a range of questions on the Yukon Energy Corporation and energy related issues.

This report focuses on the results of two online surveys: an open public survey; and a targeted survey directed to community and business leaders. A report on the result of two telephone surveys of these same groups was filed previously and should be reviewed as complimentary findings to this report. A narrative summary of findings of the two telephone surveys is included in this report. Data from the two telephone surveys can be found in the previously filed report.

Both phone surveys were conducted prior to the launch of the public awareness campaign. The online surveys were conducted simultaneous with the campaign.

Participation in the public survey was promoted through an awareness campaign as well as on the Yukon Energy Corporation's website and an incentive was offered (public survey only) to enhance participation.

Research Goals

- To provide the Yukon Energy Corporation with current Knowledge, Awareness and Behaviour (KAB) among Yukon residents and business and community leaders toward the corporation and current and future energy needs.
- To build a renewed sense of trust and confidence among Yukon residents in the corporation supporting its vision of a clean energy future.

Research Objectives

- To establish baseline KAB data
- To effectively position the Yukon Energy Corporation and its vision for a clean energy future
- To inform public communications initiatives and campaign information and messaging undertaken by the Yukon Energy Corporation

Research Targets

To achieve a confidence level of 95% an overall target for all methodologies was 380 respondents. Research targets were surpassed.

- | | |
|---|-----|
| • Public phone survey: | 184 |
| • Public online survey: | 356 |
| • Business and community leaders phone survey: | 25 |
| • Business and community leaders online survey: | 41 |

TOTAL:	606
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SECTION I

Summary of Public Telephone Survey Findings

Introduction

A telephone survey of 184 randomly selected Yukon residents in six communities was conducted between June 2 – 8, 2010.

- The majority of Yukon residents are aware the Yukon Energy Corporation is both a producer and distributor of power. However a significant number are not aware of the dual responsibility of the corporation with regard to the production and distribution of power as indicated by those who said the corporation was only a producer or only a distributor or did not know.
- A strong majority of respondents said it is important for them to know who produces and who distributes power.
- Hydro generated power is a clearly preferred alternative to diesel-generated power across all communities.
- There is a strong preference for the development of alternative energy sources. (For the purposes of the survey, 'alternative' was described as wind and geo-thermal).
- Carmacks showed the highest level of support for alternative sources at 70% and residents of Marsh Lake showed the lowest support at 56%. In Whitehorse 65% of respondents identified alternative as a preferred source of power.
- When asked to think about the energy production and future needs, only slightly more than half (52%) of residents agreed that Yukon will not have enough energy to meet future needs. This was relatively consistent across all communities with the exception of Carmacks where 80% of respondents agree with this projection.
- A clear majority of respondents do not support diesel-generated power as a future energy source. The strongest support is for the development of new alternative energy sources followed by hydro.
- Yukon residents see large scale industry as the big driver in terms of creating the greatest demand for future energy needs followed by population growth (residential consumption). There was however a wide variance in response by different communities to this question ranging from a low of 50% (Dawson City) who see large industry as the biggest future power consumer, to 80% of respondents from Carmacks. In Whitehorse 52% of respondents said they saw large industry as creating the biggest energy demand.
- With reliability of the power supply, the majority of respondents feel there has been little change or it has improved over the past 12 months . Responses varied marginally by community with most in the 75%+ range in saying reliability has been better or the same.

- The majority of Yukon residents (78%) feel the reliability of power over the next five years is likely to remain unchanged or get better.
- Using Nunavut/NWT and Edmonton for comparison, survey respondents were asked to indicate if they felt they paid more, less or the same for power. While Yukon residents feel they pay less or are not sure in relation to other northern residents they clearly feel they pay more than residents of Edmonton. Forty-four per cent (44%) of respondents said they were not sure.
- On the question of confidence in the Yukon Energy Corporation related to planning and developing clean energy sources to meet future needs, 58% said they had confidence in the corporation. The level of confidence ranged from a low of 30% in Haines Junction to a high of 80% in Carmacks. In Whitehorse 62% said they have confidence in the corporation.
- On the question of Yukoners assuming more personal responsibility toward energy conservation, 89% are in agreement.
- An equally high number (87%) of respondents agreed with a planning approach that would see new alternative energy sources developed in conjunction with hydro development to meet future needs.
- A strong majority (88%) reinforced their support for alternative and hydro by saying the Yukon needs to move away from diesel-generated power. Support for moving away from diesel-generated power ranged from a low of 70% in Haines Junction to a high of 90% in Whitehorse and Dawson City.
- Almost half (49%) of respondents were 51 years or older with over a one-third (37%) in the 31 to 50 year age group. The majority of respondents were also longer-term residents with 59% indicating 20 or more years of residency. Gender of respondents was relatively evenly divided.
- Sixty percent (60%) of respondents were surveyed in Whitehorse with 25 residents in Marsh Lake and Dawson City participating in the survey. For the smaller communities of Haines Junction and Carmacks 10 phone surveys were done in each community. In Teslin four surveys were conducted.
 - Note: It is important to note that the sample size in communities outside Whitehorse is not significant enough from which any conclusions can be drawn with any degree of confidence at an individual community level. The data indicated on a community-basis for some questions in this report is provided as a point of interest only and cannot be considered statistically significant unto itself.

SECTION II

Summary of Community and Business Leaders Telephone Survey Findings

Introduction

A telephone survey of 25 business and community leaders representing a cross sample of businesses, Yukon-wide associations and local community leaders was conducted between June 4 – 11, 2010.

- Yukon business and community leaders indicate a high degree of confidence (88%) in the Yukon Energy Corporations' assessment that new energy sources will be needed within the next five years in order to meet future demands.
- Consistent with the public phone survey, business and community leaders believe large industry will be a primary driver in future energy demands and indicate a strong preference for alternative energy followed by hydro development. Support for diesel-generated power is very low.
- Approximately one-third (32%) of business and community leaders feel energy reliability worsened over the past 12 months as compared to about 18% of public survey respondents while two thirds (66%) said reliability was the same or better .
- In terms of expected reliability over the next five years, business and community leaders feel more confident with almost half (45%) expecting reliability to improve and only 16% expecting reliability to get worse and over one-quarter (28%) expecting no change.
- Over three-quarters (76%) of business and community leaders feel Yukon businesses need to do more toward energy conservation. While this is a strong indicator that businesses feel the need to assume greater responsibility for conservation, the public's sense of personal responsibility is much higher at 89%.
 - Comments related to this question indicate that conservations is a 'shared responsibility' across all sectors.
- There is a high degree of support (84%) among business and community leaders for the development of alternative energy sources in combination with hydro. Alternative energy also received strong support from the general public.
- Also consistent with the public's view, business and community leaders strongly believe that moving away from a reliance on diesel-generated power is the right goal for the Yukon Energy Corporation to be pursuing.
- Additional comments suggested that multiple alternative sources need to be further explored including things like bio-fuels and waste-energy in addition to hydro, wind and geo-thermal and natural gas should also considered. Some suggest the corporation lacks creativity with respect to new clean energy sources and opportunities.

- While a strong majority (84%) believe the Yukon Energy Corporation should be developing clean energy sources, just over half (56%) of business and community leaders have confidence in the corporation's ability to effectively plan and develop clean energy.

Additional comments included:

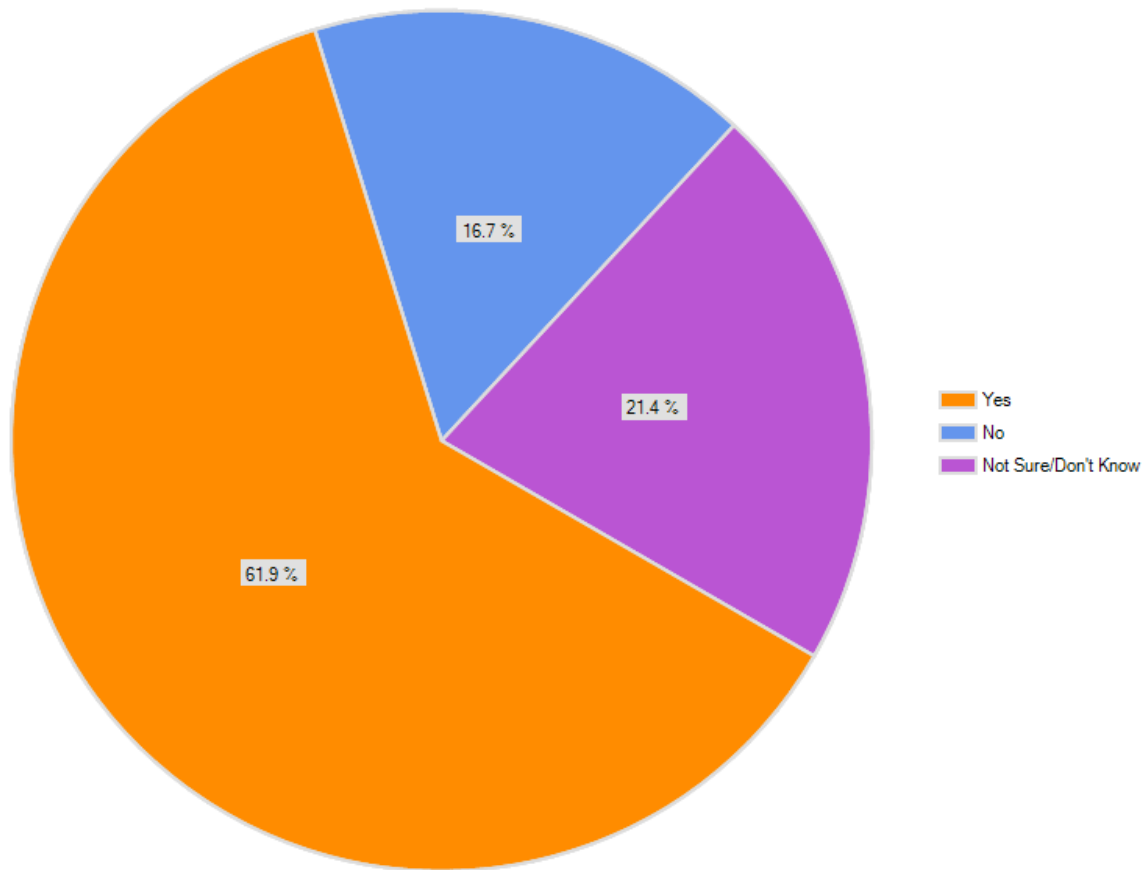
- Political influence and interference with the Yukon energy sector affects productivity and the ability to plan effectively. (Several mentions)
- Responding to external opposition and special interest groups interferes with effective planning.
- Years of opportunity to develop new clean energy sources have yielded little results.
- Reliability and cost need to be considered when developing alternative energy sources.
- Investment needs to be made in Yukon's power distribution system.
- Open up power generation to enable third parties to become involved.
- The corporation needs to do more public consultation (this survey was a good start).
- Lack of a strategic plan and cost-benefit analysis.
- Lack of talk related to encouraging energy conservation.
- Important to plan and develop now to meet future needs and not get caught energy short. (Yukon Energy Corporation appears to be doing a good job projecting what future needs will be).
- More communication is needed on energy issues and options.

SECTION III
Findings from Community and Business Leaders Online Survey

Introduction

An online survey of 41 community and business leaders was conducted between July 7 – 15, 2010 representing individual businesses and organizations, Yukon-wide associations and local community leaders.

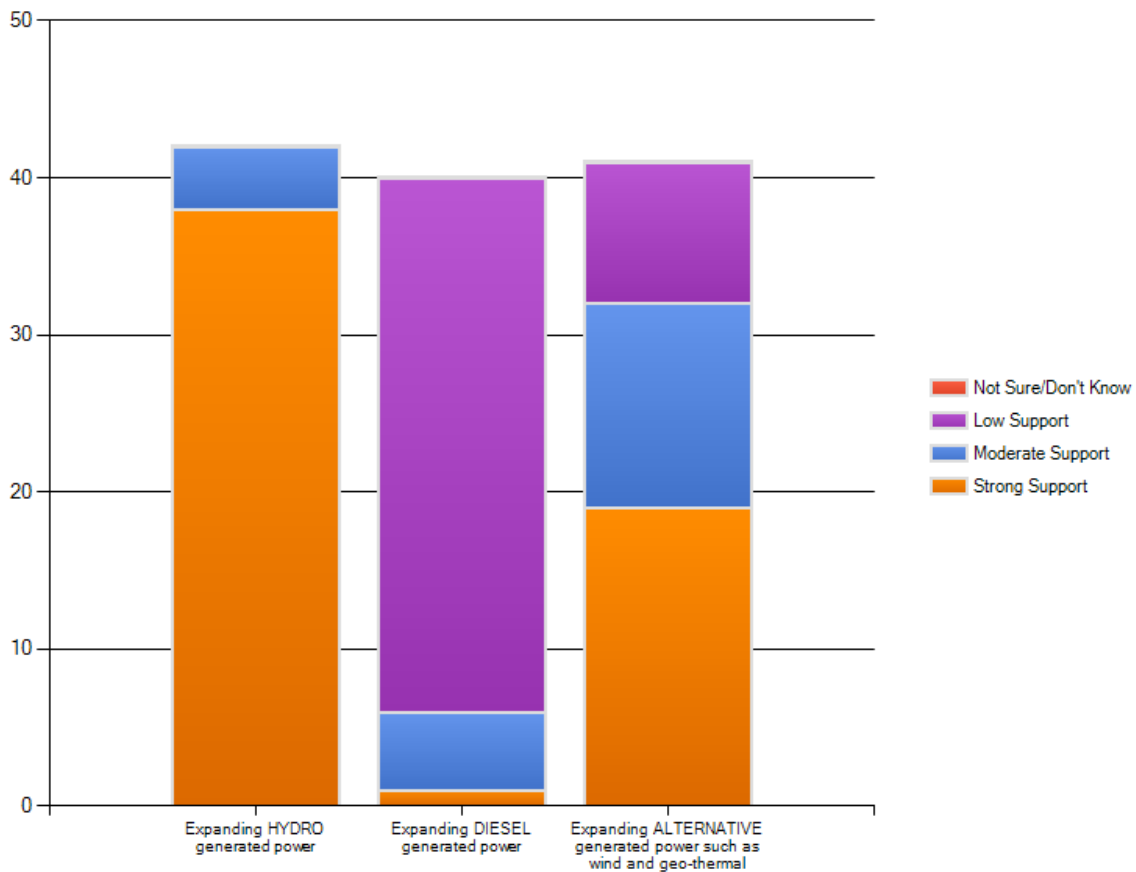
1. The Yukon Energy Corporation has identified the need for new sources of energy within the next five years to meet near future anticipated demands. Do you have confidence with this assessment?



Results show a 62% confidence level in the Yukon Energy Corporations' assessment of future energy needs with almost one-quarter (21%) of respondents unsure of their confidence. This reflects a statistically significant lower level of confidence than the telephone survey where 88% of respondents indicated a high degree of confidence in the corporation's future energy needs assessment.

The difference may be related to a greater level of comfort of anonymity with an online survey.

2. What level of support do you give each of the following power generation options?

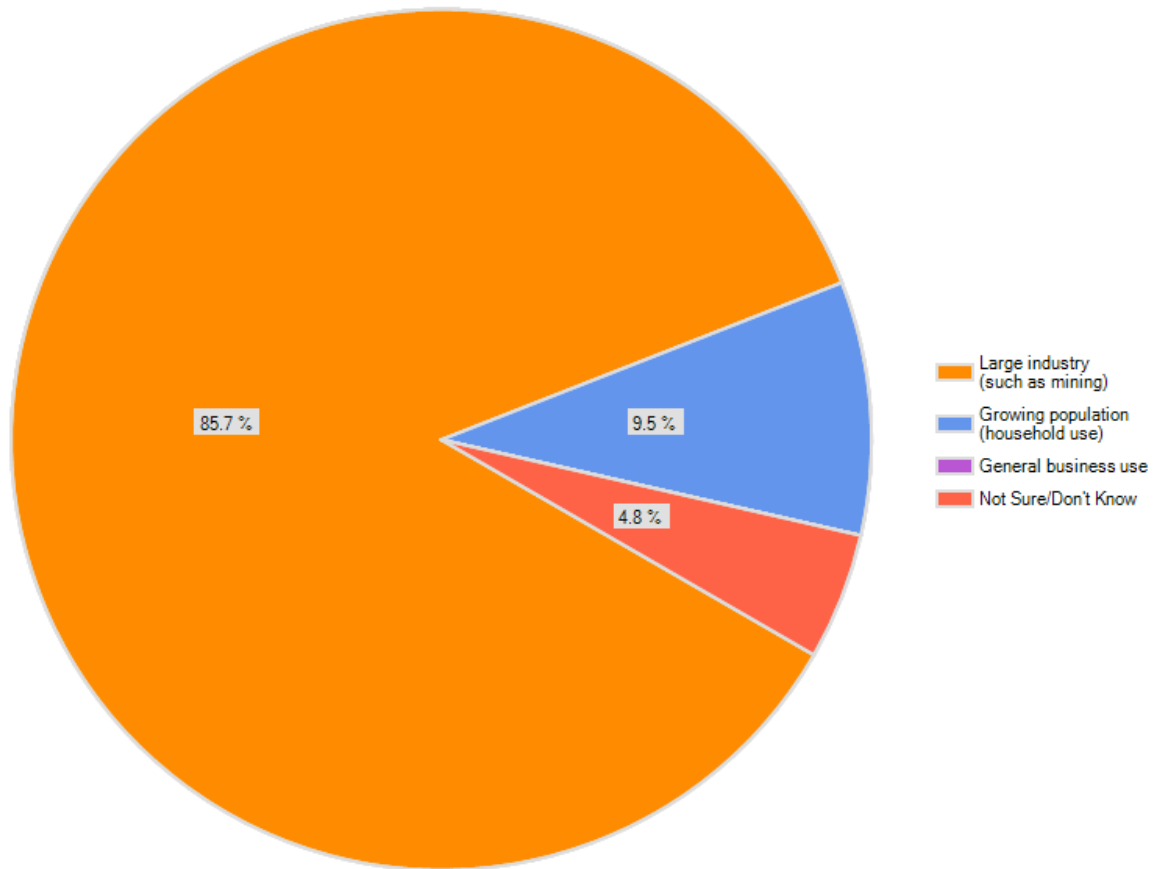


The online survey shows that business and community leaders have the strongest support (90%) for expanding hydro power followed by alternative generated power with 46% strong support. This differs from the community leaders phone survey which gave the expansion of alternative energy the strongest support followed by hydro sources.

The difference between the phone and online survey results may be related to an ideal preference reflected in the phone survey versus a more pragmatic view of what is realistically achievable as indicated by the online survey. Online surveys allow respondents more time to contemplate their view.

Phone surveys can include a degree of bias with respondents responding in what they perceive as the most politically or socially correct way, where online surveys allow for a greater sense of anonymity. Phone surveys also indicate 'top-of-mind' response whereas online surveys provide greater reflection time on a question. It is important therefore to consider both methodologies when assessing the data.

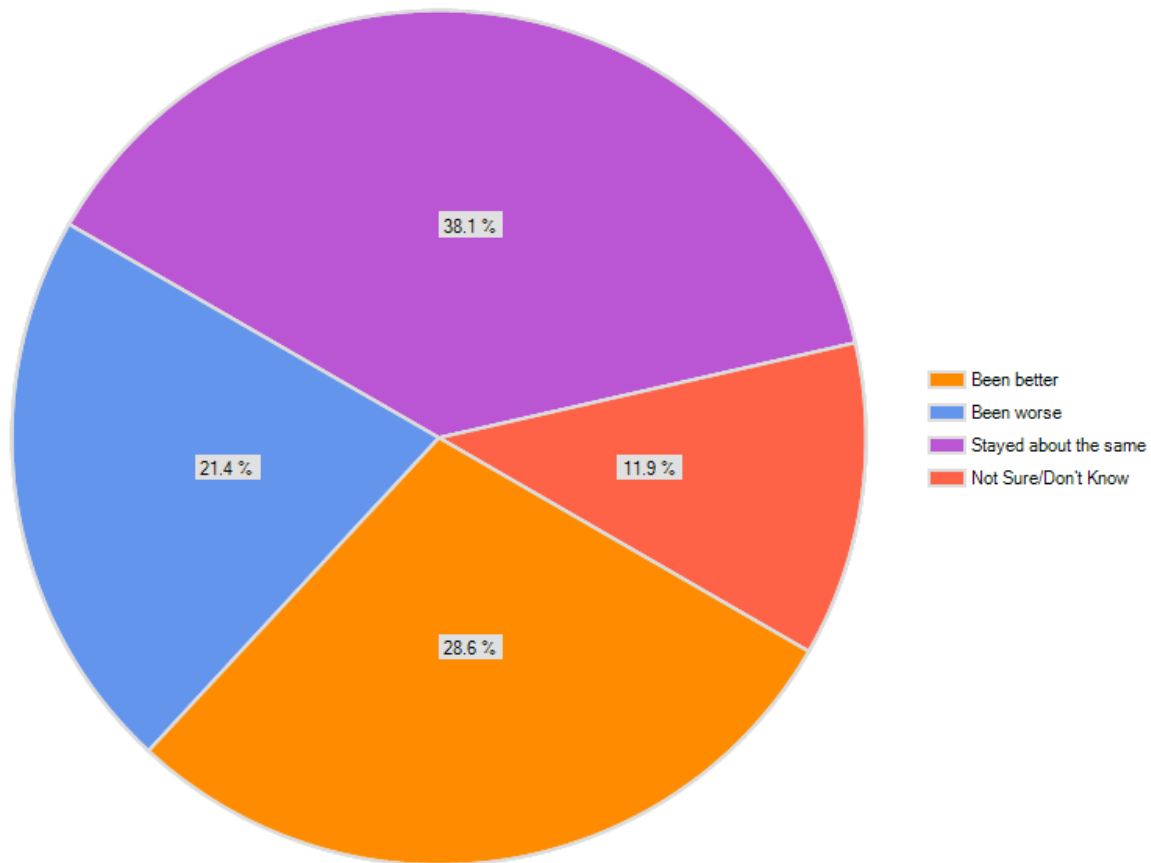
3. Which of the following will create the SINGLE GREATEST DEMAND on Yukon's future energy needs?



Both the online and phone surveys show community leaders believe large industry will create the greatest demand on future energy needs, however more respondents to the phone survey were unsure on this question than those who responded to the online survey.

- Phone Survey: 20% unsure
- Online Survey: 5% unsure

4. Over the past 12 months, has reliability in the supply of power:



On the question of past energy reliability, two-thirds (66%) of respondents to both the phone and online surveys said their power supply had remained the same or been better over the past 12 months.

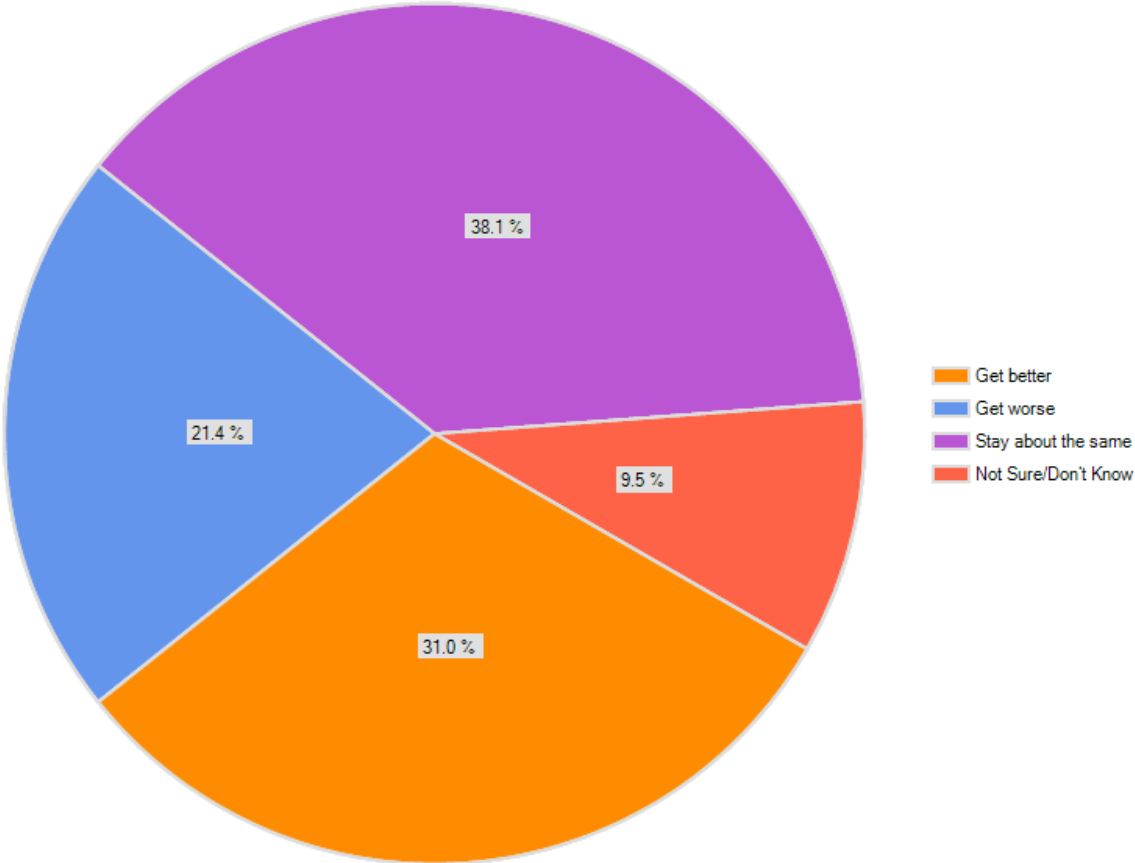
Note: The survey provided two 'confidence' indicators:

- One that relates to the corporation's ability to effectively plan and develop 'clean energy sources' to meet future needs; and
- One that relates to the provision of a stable or improved supply of energy in the future.

Q 5 (following page) relates to the later issue (stay the same or get better over the next 5 years) and shows a higher confidence level (68%) as opposed to Q 9 which focuses on confidence relative to the development of 'clean energy' sources to which 46% said they had confidence in the corporation's ability.

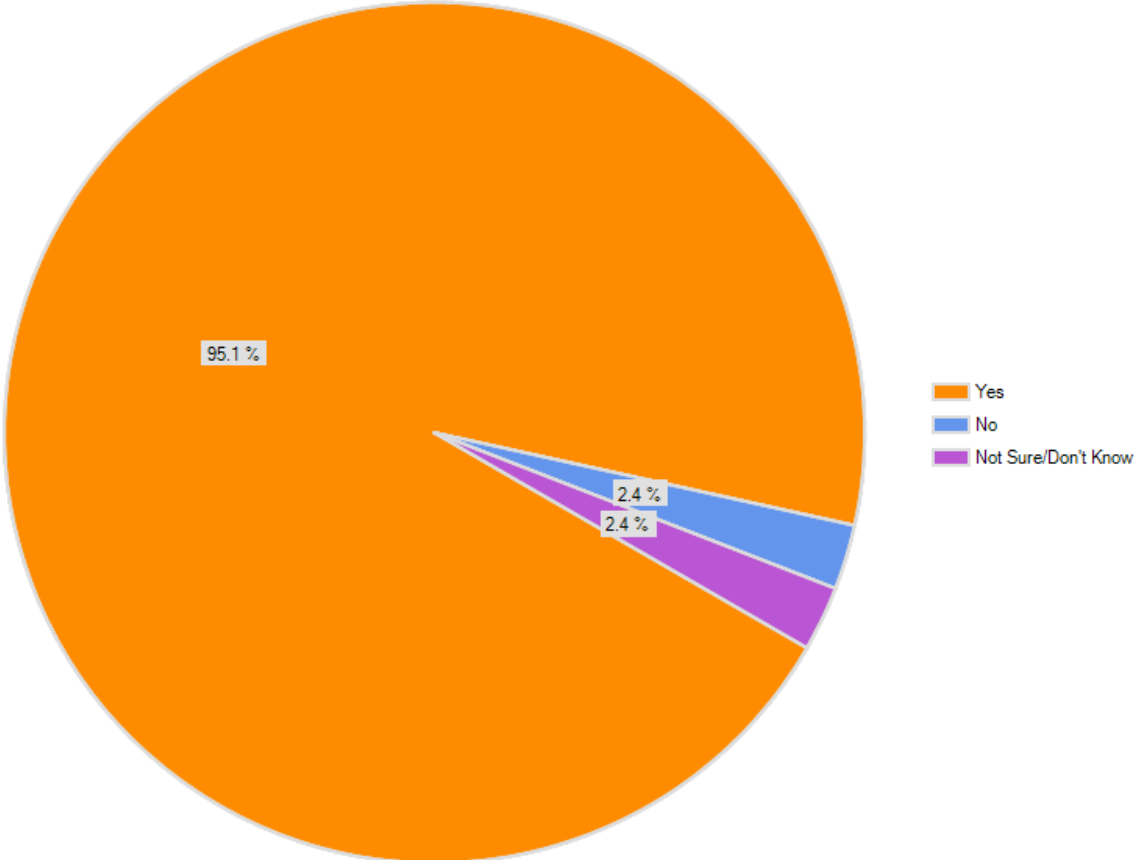
It should be further noted however that 20% of respondents to Q 9 also indicated they "did not know/not sure" about their level of confidence indicating an important margin for improvement in the overall confidence level in relation to planning a clean energy future.

5. In the next 5 years, do you expect the reliability of power to:



Thinking about anticipated energy reliability over the next five years an equal number of respondents to both survey methods (69%) expect the energy supply to remain the same or get better while a slightly higher percentage of online survey respondents versus phone respondents anticipated energy reliability would worsen (22% vs 16% respectively). An equal number from both survey methods (12%) indicated they are not sure about the future in terms of energy reliability.

6. Should business and industrial energy users be developing plans to use better energy conservation technologies, equipment and operational practices to help reduce demand?

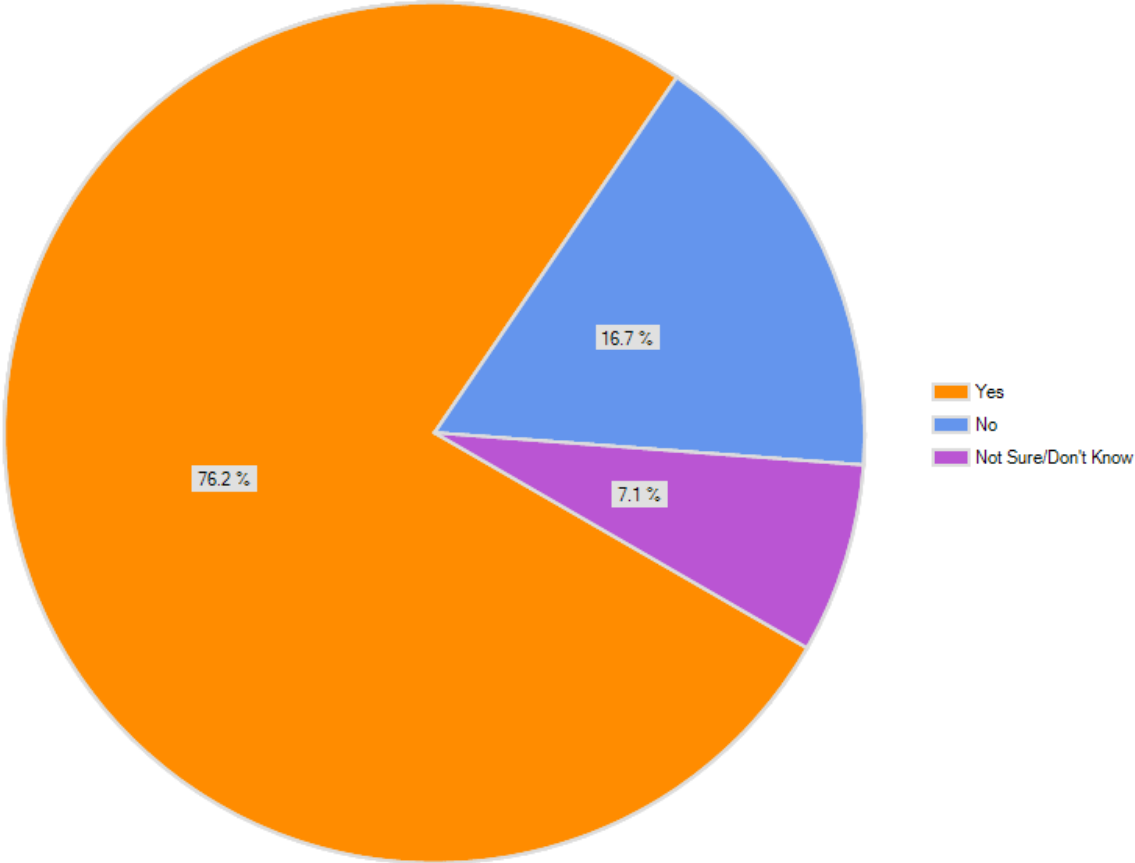


Both survey methods (phone and online) show a high degree of a sense of responsibility among business and community leaders with regard to the need for business and industry to do more toward energy conservation (95% online vs 76% phone).

The combined level of agreement on this issue between both survey methods shows strong support for the need for business and industry to develop plans for better energy conservation.

This high degree of awareness and acknowledgement of responsibility will be helpful should the Yukon Energy Corporation consider a future energy conservation program that requires the support and engagement of industry, business and community leaders.

7. Should Yukon continue to develop alternative energy sources such as wind and geo-thermal in combination with new hydro sources?

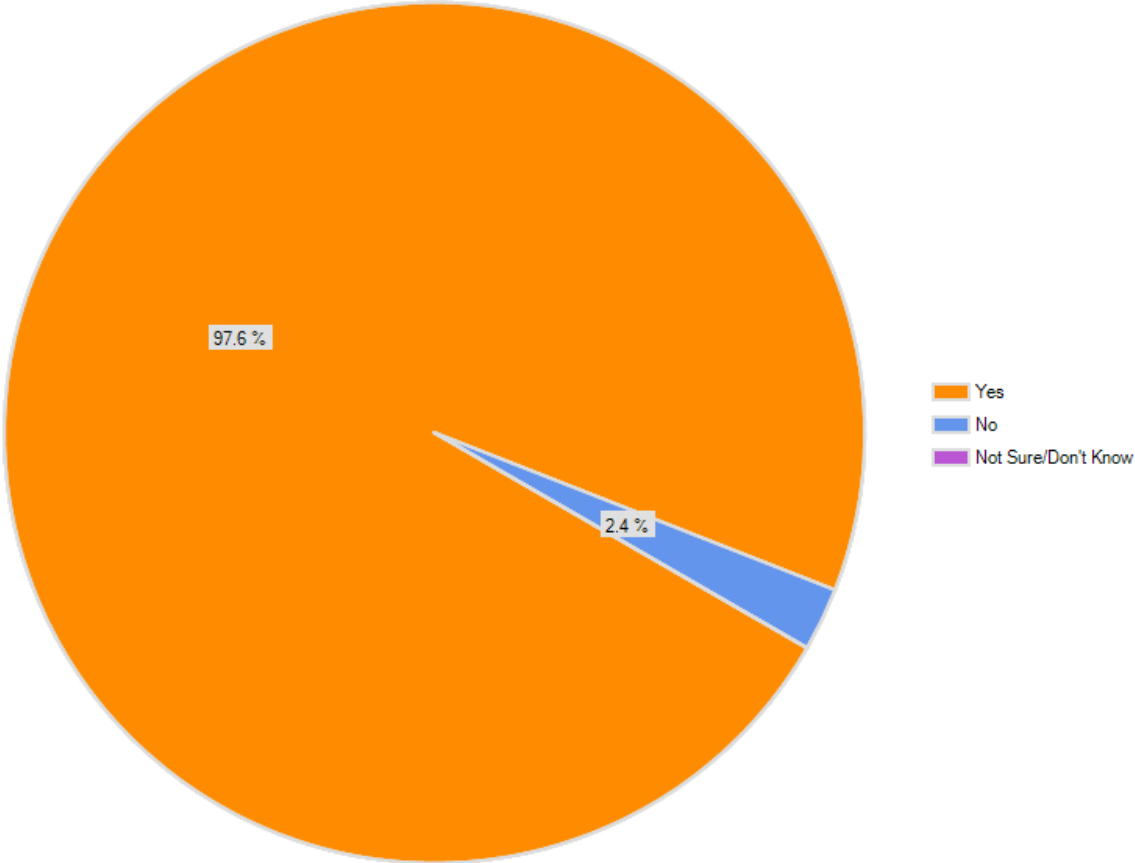


Consistent with the high degree of support for energy conservation measures, community and business leaders are also very supportive of continuing to develop clean energy sources in combination with new hydro sources.

The phone and online surveys showed 84% and 76% support respectively for developing new clean energy sources (described as wind and geo-thermal).

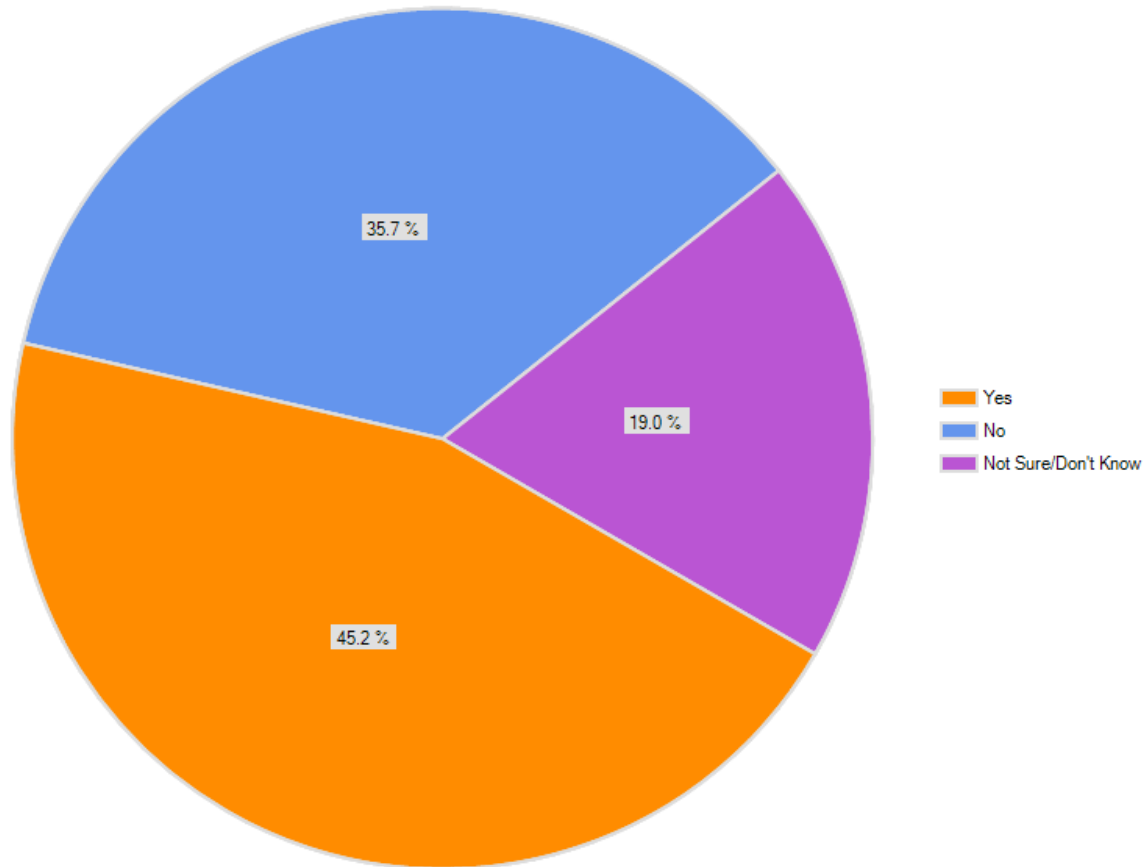
Note: Open comments collected through the survey suggest some felt the description of “wind and geo-thermal” was too narrow to represent alternative energy.

8. Is moving away from a reliance on diesel-generated power the right thing to do?



The view that Yukon should be moving away from the use of diesel-generated power is consistent between community leaders and the public. Several comments from community and business leaders however, recognize the important role diesel-generated power plays in smaller communities and as a back-up system

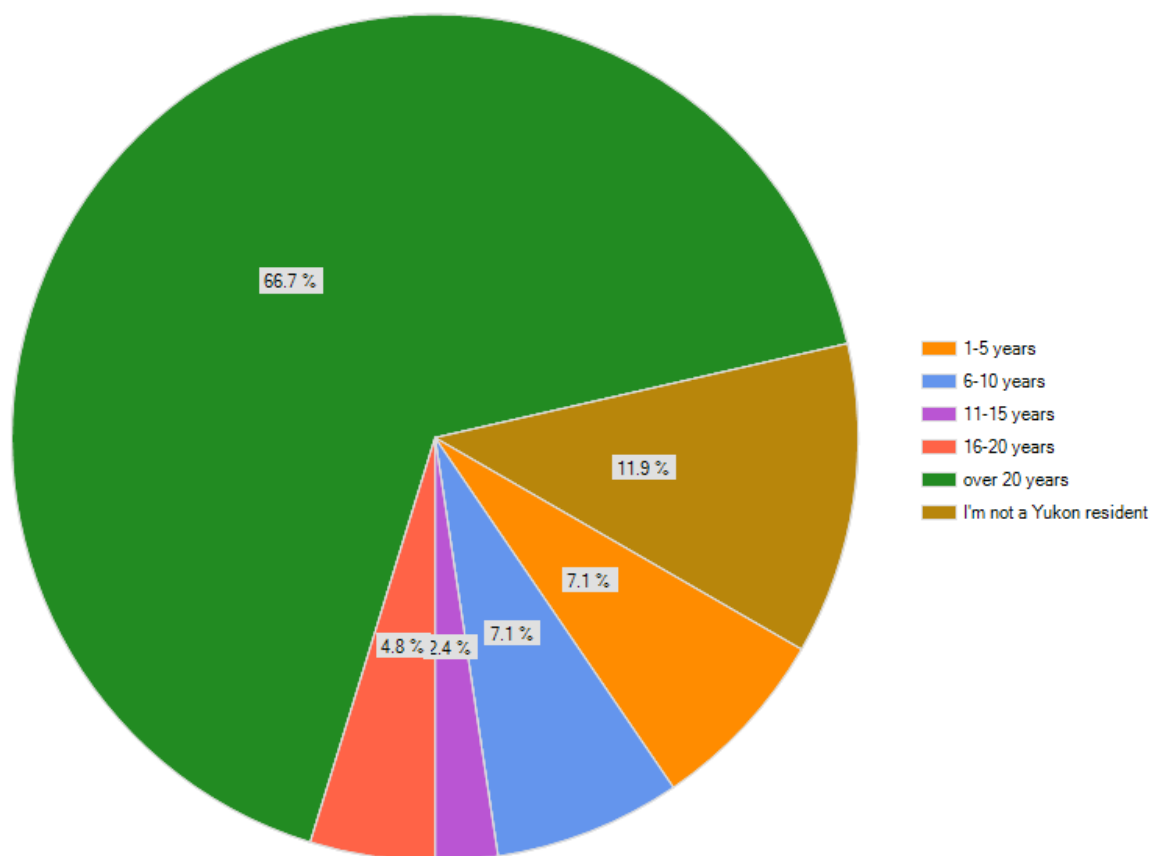
9. Do you have confidence in the Yukon Energy Corporation to plan and develop clean energy sources to meet future demands?



While community and business leaders support the development of clean energy sources, less than half of those surveyed (45%) say they have confidence in the Yukon Energy to plan and develop new clean energy. The confidence level indicated in the phone survey showed a slightly higher level of confidence at 56%. Using both data sources suggests about half of community business leaders have confidence in the corporation in this area.

Note: Question 10 asked respondents to identify what they felt was the 'most important' thing the Yukon Energy Corporation needs to consider regarding Yukon's future energy needs. See Appendix B for verbatim comments.

11. How many years have you been a Yukon resident?



Consistent with the phone survey of community and business leaders, two-thirds (67%) indicated they have been a Yukon resident for over 20 years. This length of residency provides a strong historical perspective and experience in relation to Yukon energy issues.

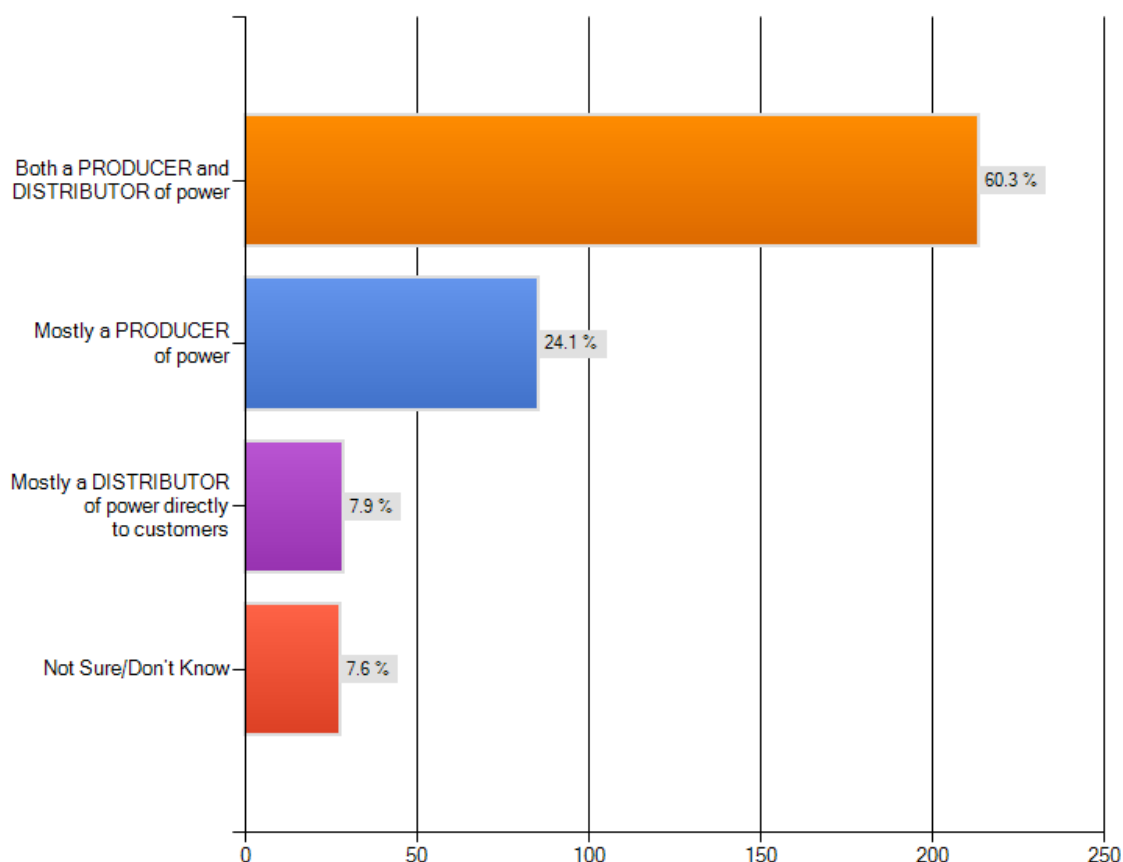
Note: Twelve per cent (12%) of the community and business leaders who were sent an email invitation by the corporation to participate in the survey indicated they are not Yukon residents.

SECTION IV Findings from the Public Online Survey

Introduction

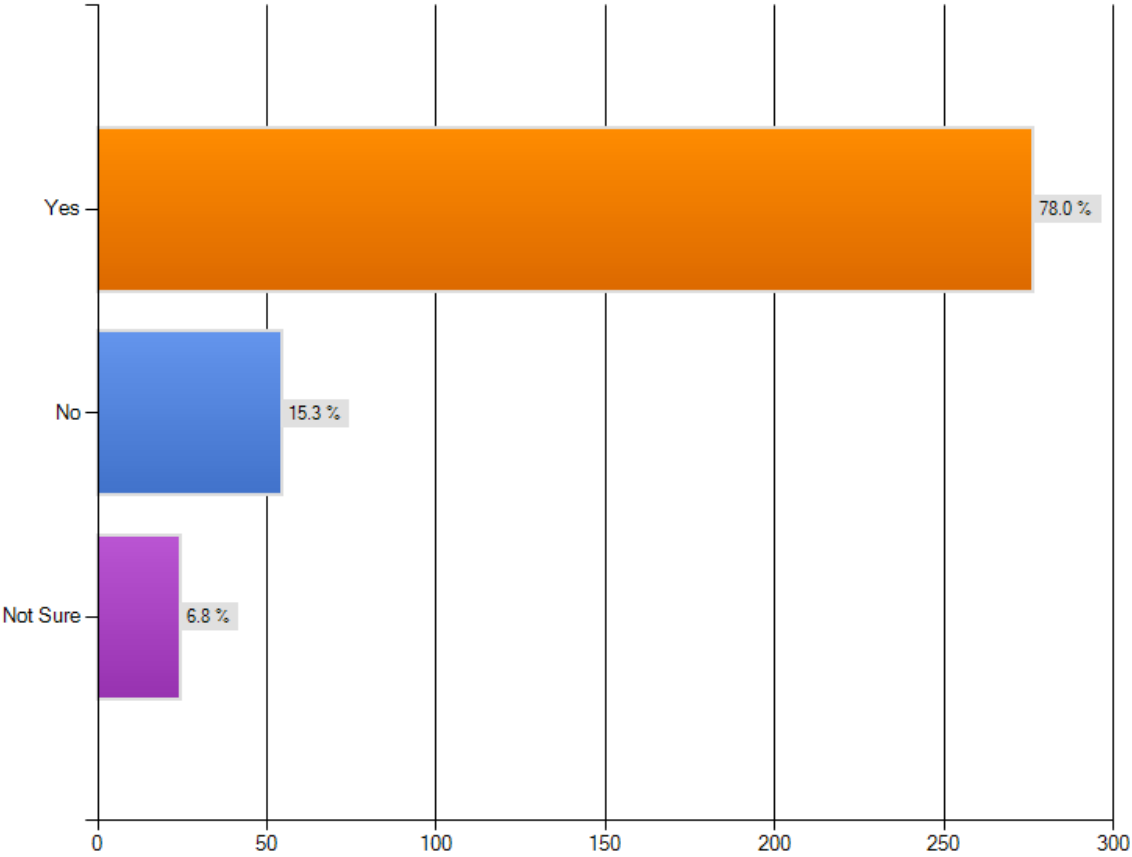
An open online survey of Yukon residents was conducted between June 15 – July 1, 2010. The survey was promoted through social and mainstream media and the Yukon Energy Corporation website. An incentive was offered to increase participation. The target of 180-200 respondents was surpassed at 356 participants. The survey achieved a 93% completion rate which means of the 356 who started the survey, 330 completed and submitted the survey.

1.1 Which of the following best describes the Yukon Energy Corporation.



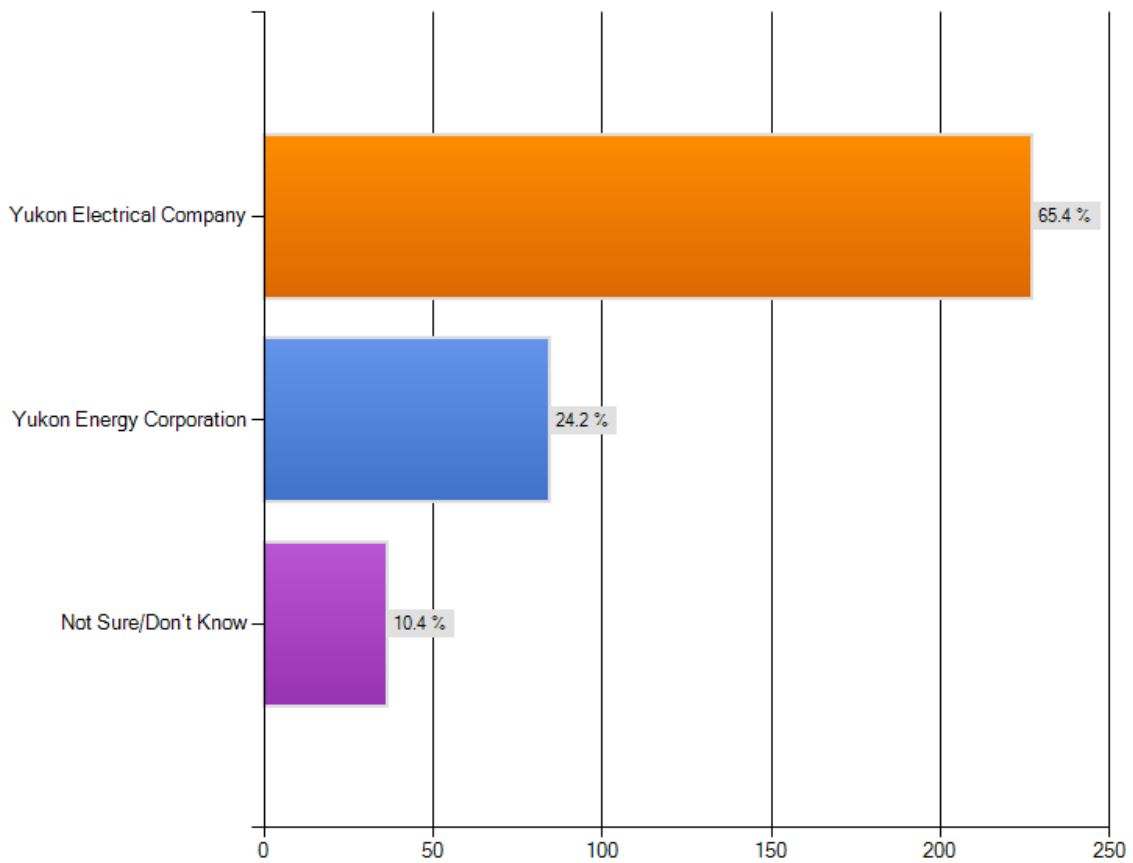
Just over fifteen per cent (15.5%) of Yukon residents indicated they either did not know (7.6%) the primary function of the Yukon Energy Corporation or thought the corporation primarily distributed power (7.9%). The majority (60%) of respondents are aware the corporation has a dual role of producing and distributing power and almost one-quarter (24%) said the corporation is mostly a producer of power.

1.2 Is it important to you to know who PRODUCES power and who DISTRIBUTES power in the Yukon?



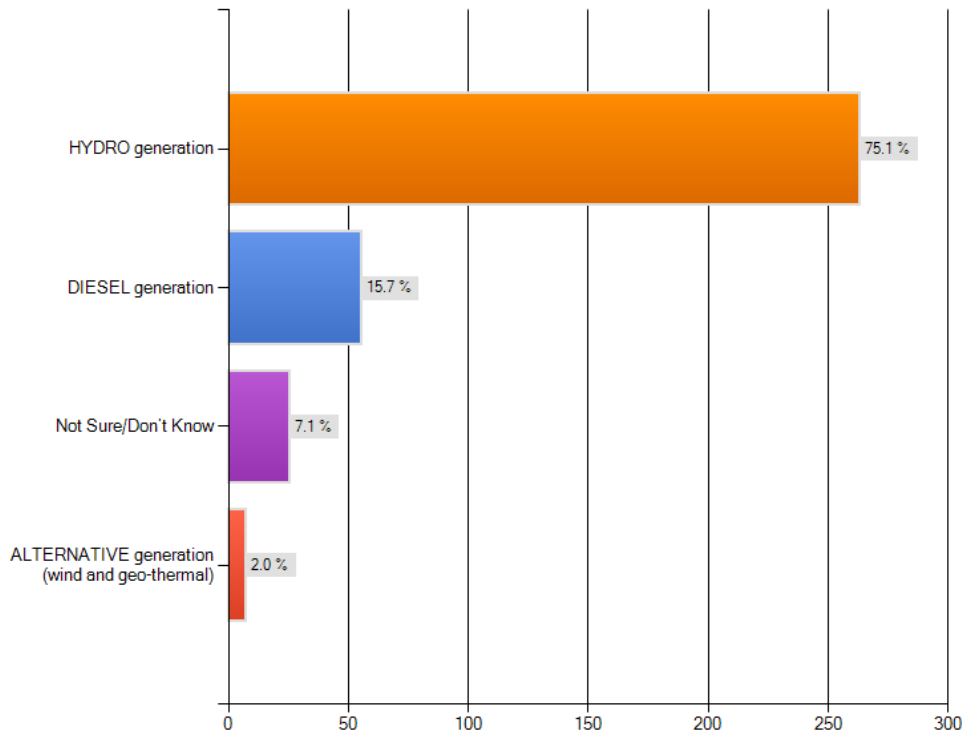
Seventy-eight per cent (78%) of Yukon residents said it is important to know who produces power versus who primarily distributes power. Clarity about the corporation’s mandate may be a consideration for future public communications.

1.3 Who would you most likely call to report a power outage?

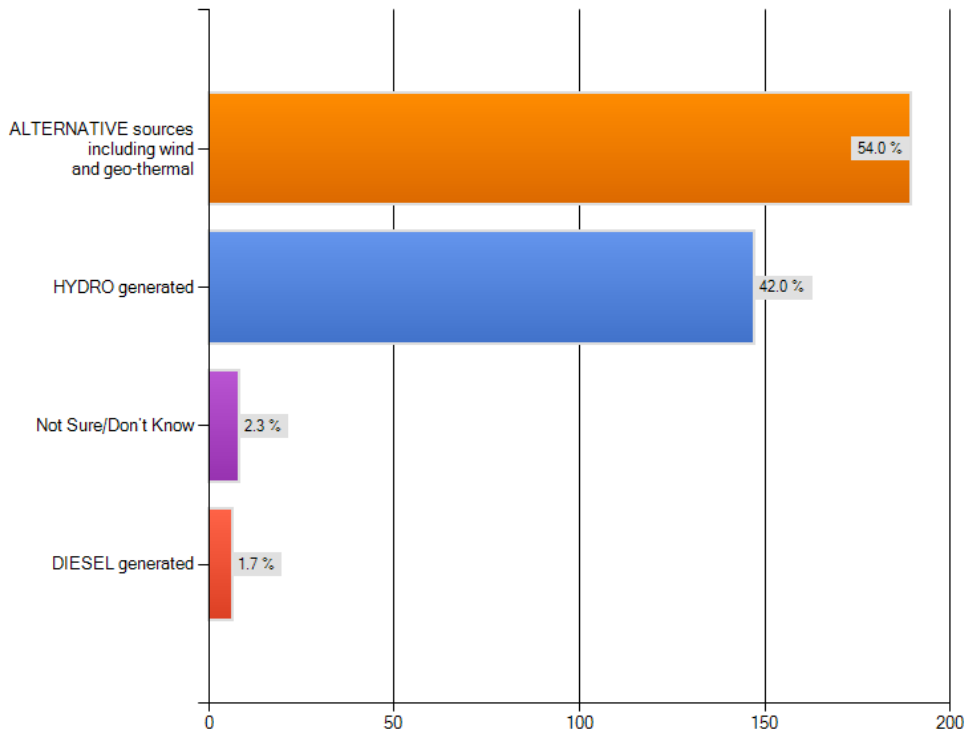


In assessing responses to the question of who to call to report a power outage, it is important to recognize that respondents included communities where the Yukon Energy Corporation is both the producer and supplier of power. It is also important to note the majority of survey respondents were Whitehorse residents and see the Yukon Electrical Company as their supplier and therefore the company they would call to report a power outage.

2.1 Which generates the MOST power in meeting Yukon's energy needs?



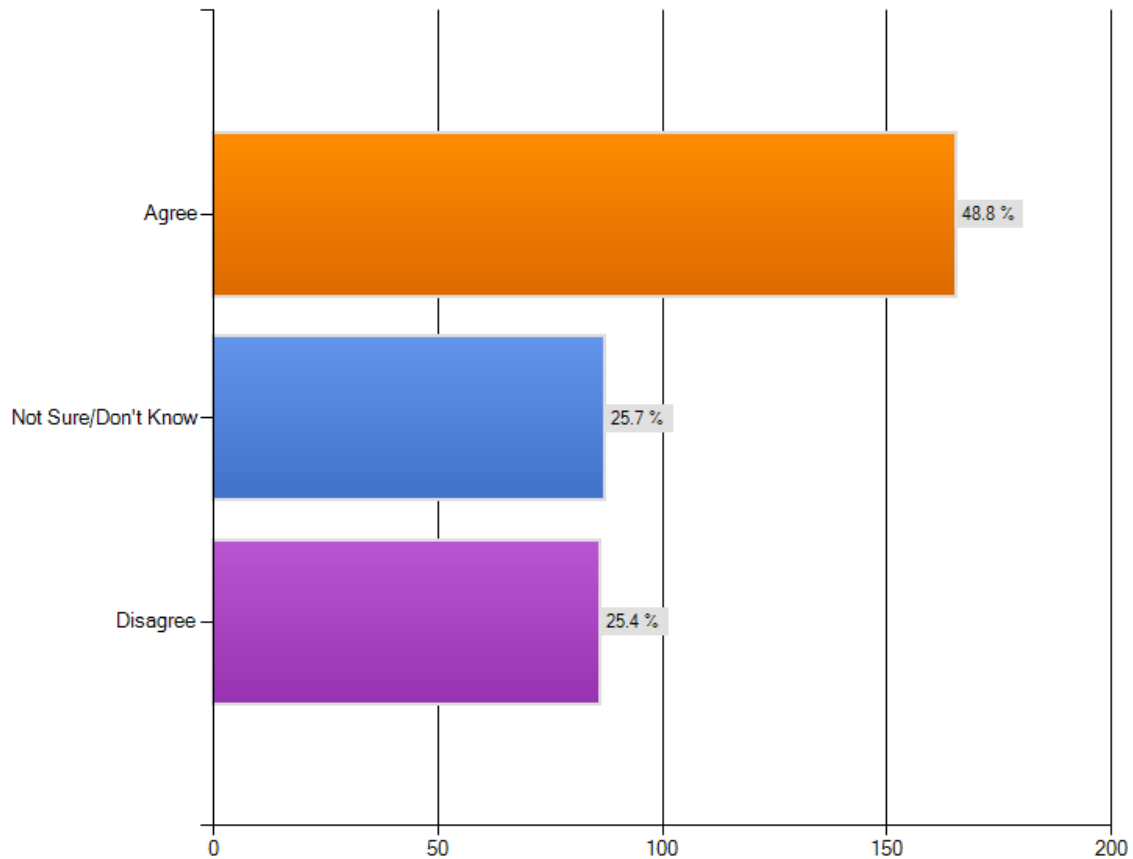
2.2 If you could choose how the power you use is generated, which would be your PREFERRED choice?



Three of every four (75%) Yukoners are aware the majority of their energy is generated by hydro, and over half (54%) would prefer to get their power from alternative sources if it were an option.

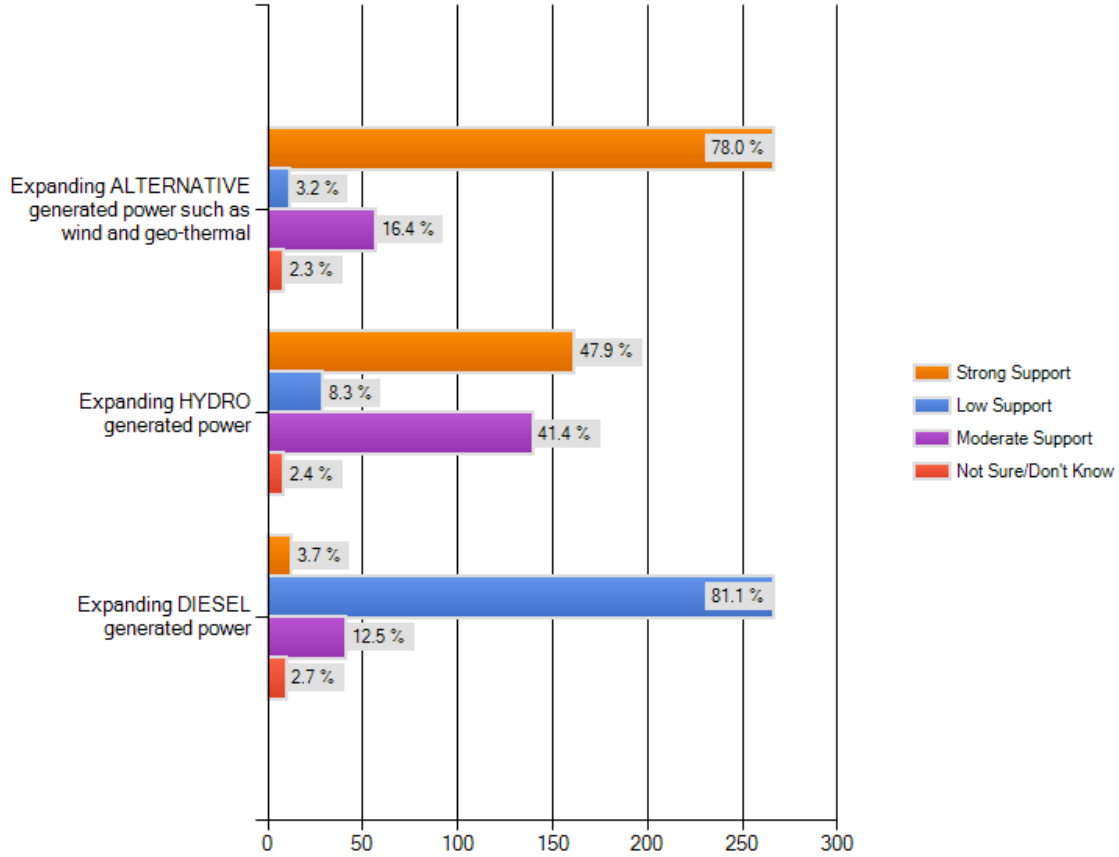
Note: No cost factors were included when survey respondents were asked to identify their “preferred choice”. For the purposes of analysis, it is assumed that – all things being equal – respondents answered this question with an understanding that, when asked to compare, the cost of alternative source generated power would be the same as hydro generated power.

3.1 At the current rate of growth in power production, Yukon will not have enough power to meet future needs.



Almost half (49%) of Yukoners agree with the position that action needs to be taken to ensure Yukon’s future energy needs are met if the current rate of growth continues. An equal number (25%) said they disagreed with this statement and a equal number were not sure of the accuracy of the statement.

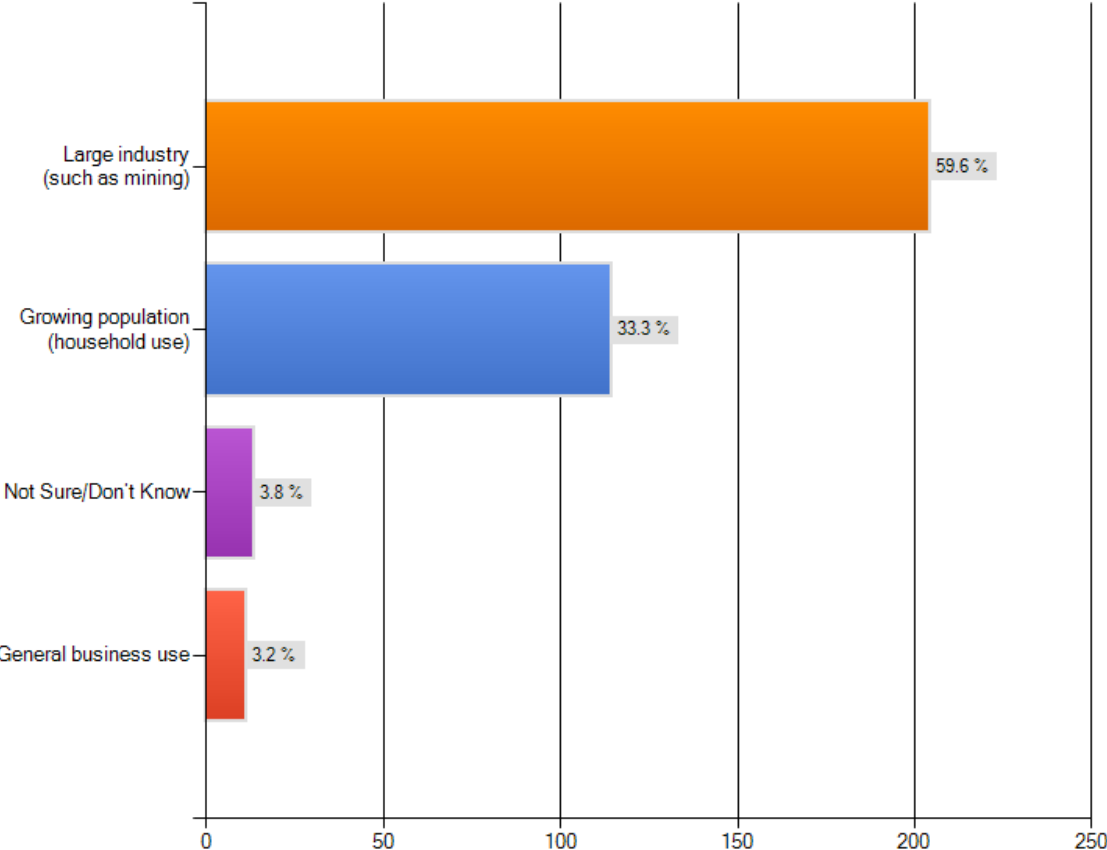
3.2 What level of support do you give each of the following power generation options?



A strong majority of Yukoners (78%) clearly favor expanding alternative generated power sources and are 81% are not in favour of expanding diesel-generated power. Slightly less than half (48%) indicated strong support for hydro generated power with an additional 41% giving moderate support to hydro power.

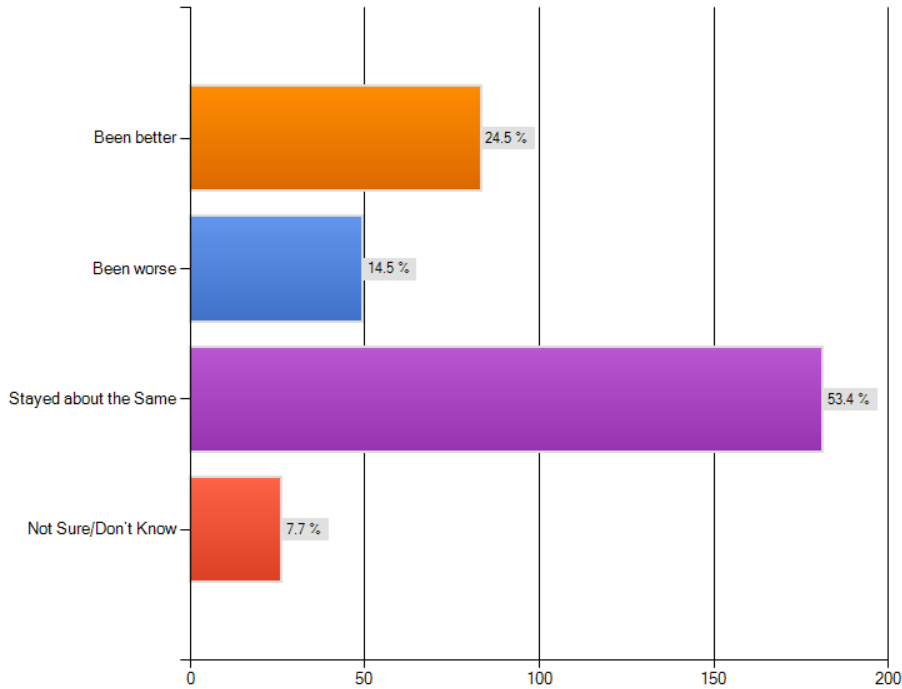
No development related costs were attached to the various power generation options, therefore alternative sources should be viewed as an “ideal” for most Yukoners. Factors related to cost, distribution, availability and reliability are all key to developing a fuller understanding of where Yukoners stand on alternative versus other energy sources.

3.3 Which of the following will create the SINGLE GREATEST DEMAND on Yukon’s future energy needs.

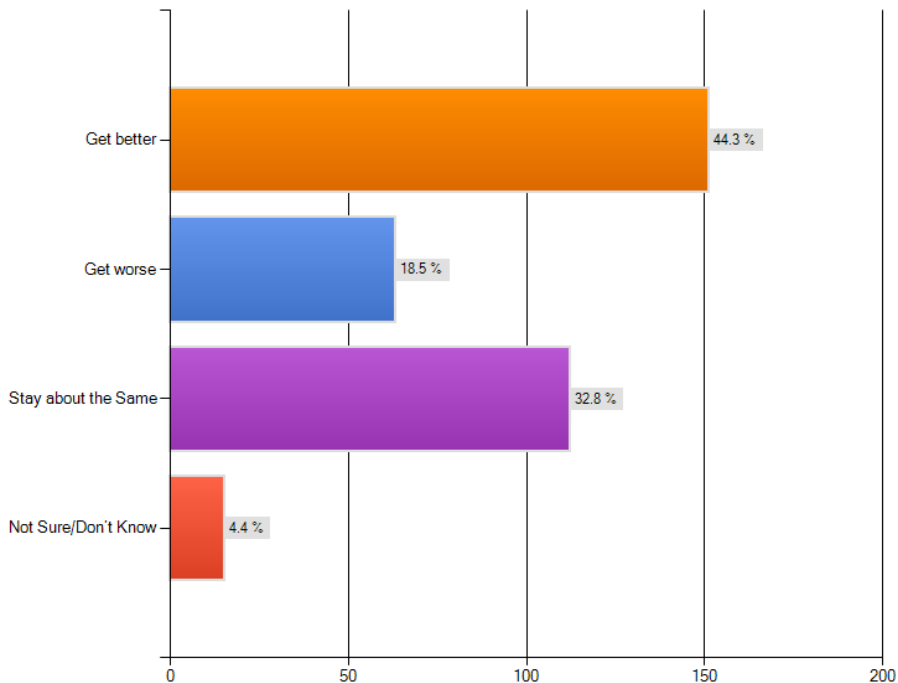


A majority of Yukoners (60%) see large industry as the big driver when it comes to meeting future energy needs while fully one-third (33%) see the growing population and related household use as being of greatest impact.

4.1 Over the past 12 months, reliability in the supply of power has:

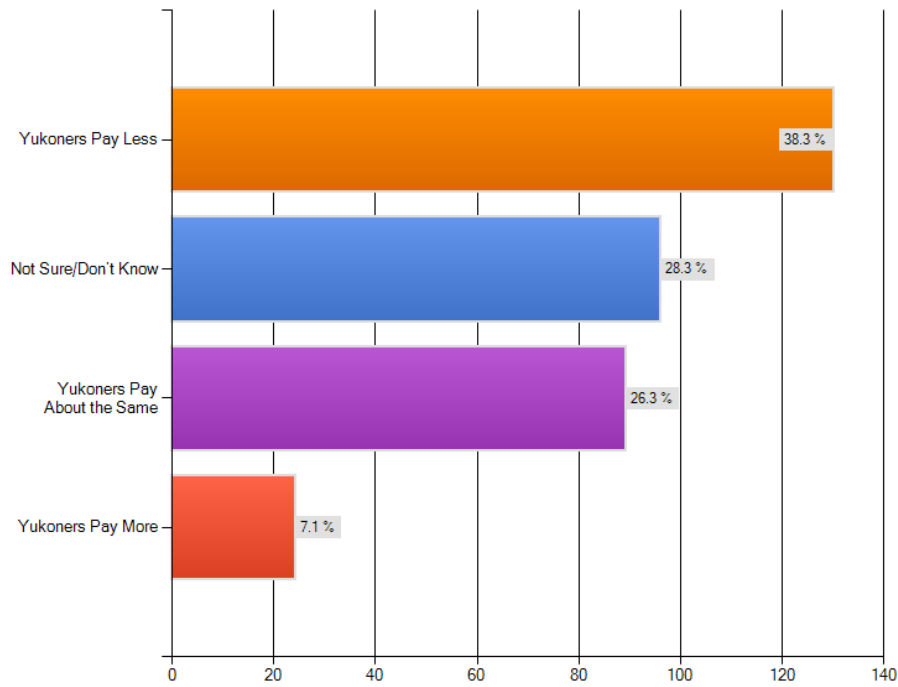


4.2 In the next 5 years, I expect the reliability of power to:

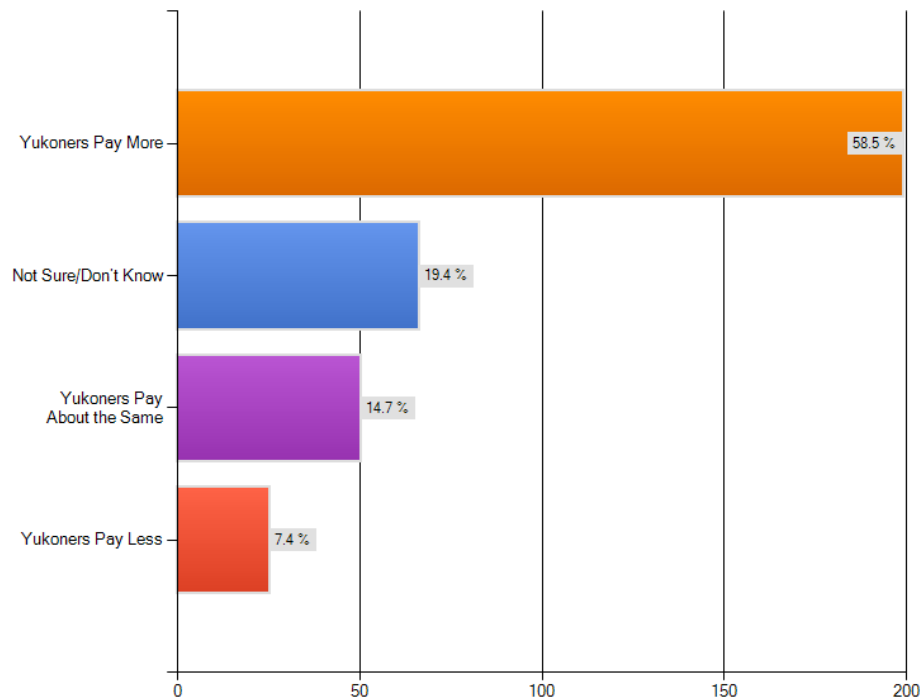


A slight majority (53%) of Yukoners feel the reliability of their power supply has remained about the same over the past 12 months, and 44% feel that the reliability is going to improve in the next five years. One-third (33%) expect no change in reliability. Just under 15% of Yukoners said reliability worsened over the past 12 months and just under 19% feel reliability will continue to get worse over the next five years.

4.3 Do you think Yukoners pay MORE, ABOUT THE SAME or LESS for power as compared to what residents in the NWT and Nunavut pay?

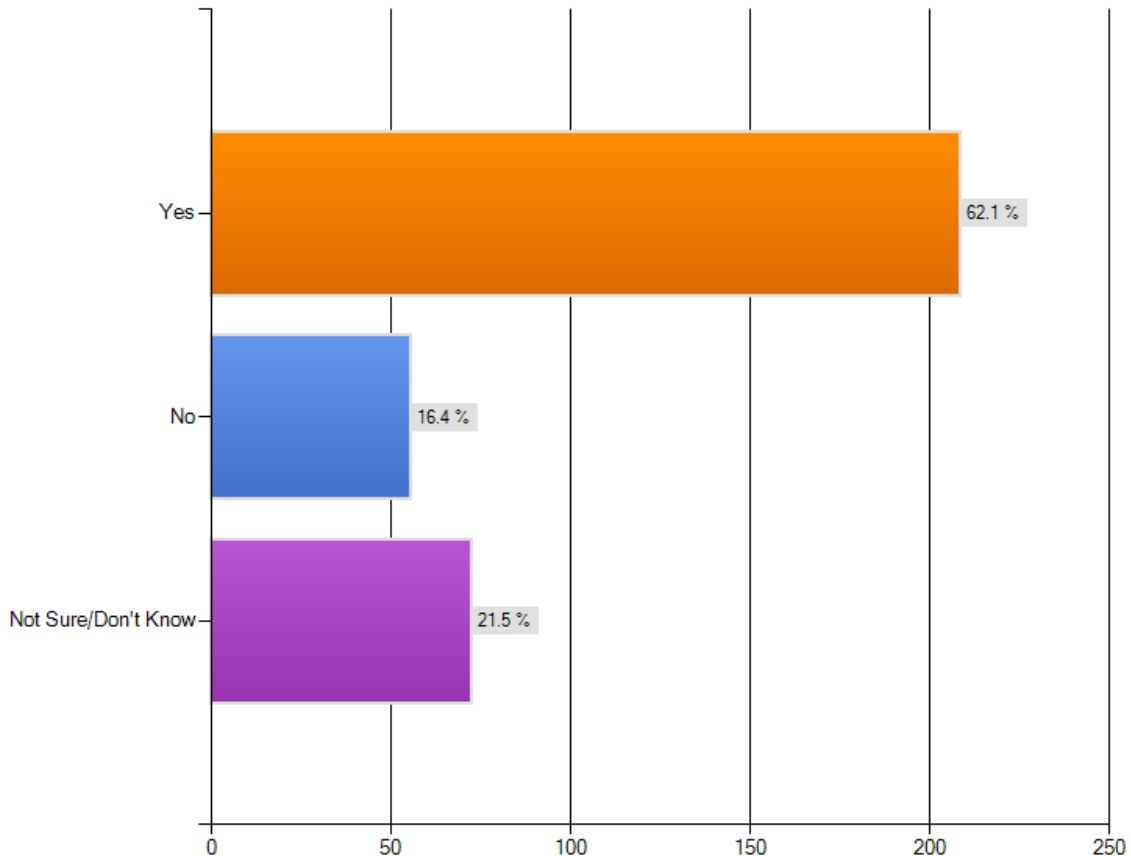


4.4 Do you think Yukoners pay MORE, ABOUT THE SAME or LESS for power as compared to what residents of Edmonton pay?



With regard to the perception of how much Yukoners pay for power relative to their northern neighbours in the NWT and Nunavut and residents of Edmonton, almost two-thirds (65%) said they pay the “same or more” than other northerners and an equal number (66%) said they pay the “same or less” than residents of Edmonton. This indicates a general sense that power costs more in the north than in southern regions.

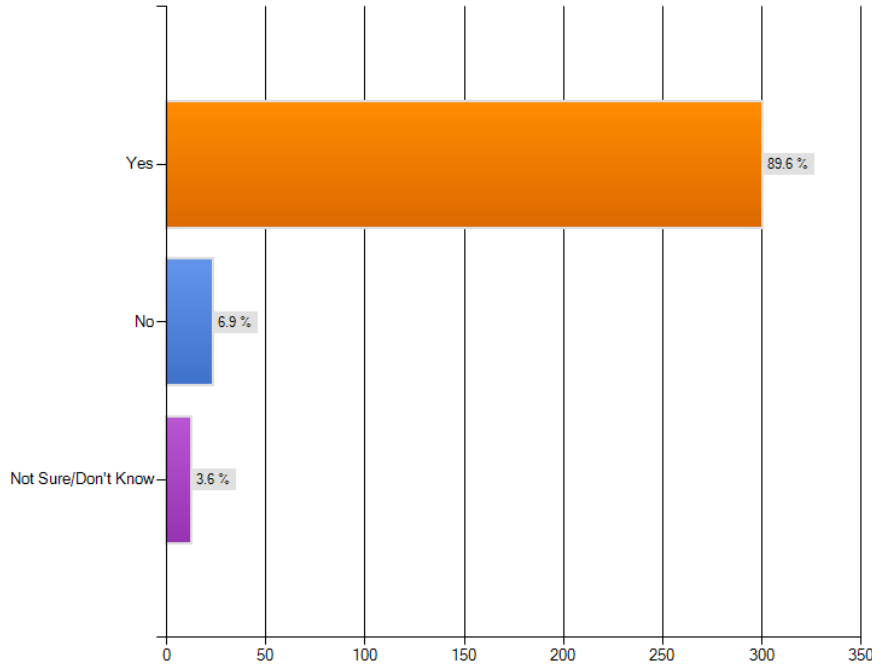
5.1 Do you have confidence in the Yukon Energy Corporation to plan and develop clean energy sources to meet future demands?



Over 60% of Yukoners said they have confidence in the Yukon Energy Corporation’s ability to effectively plan and develop clean energy sources to meet future needs. This is slightly higher than those who responded to the telephone survey where 58% said they have confidence in the corporation. Of important note is that between 18% (phone survey) and 22% (online survey) were unable to state their confidence or lack confidence in the corporation’s ability.

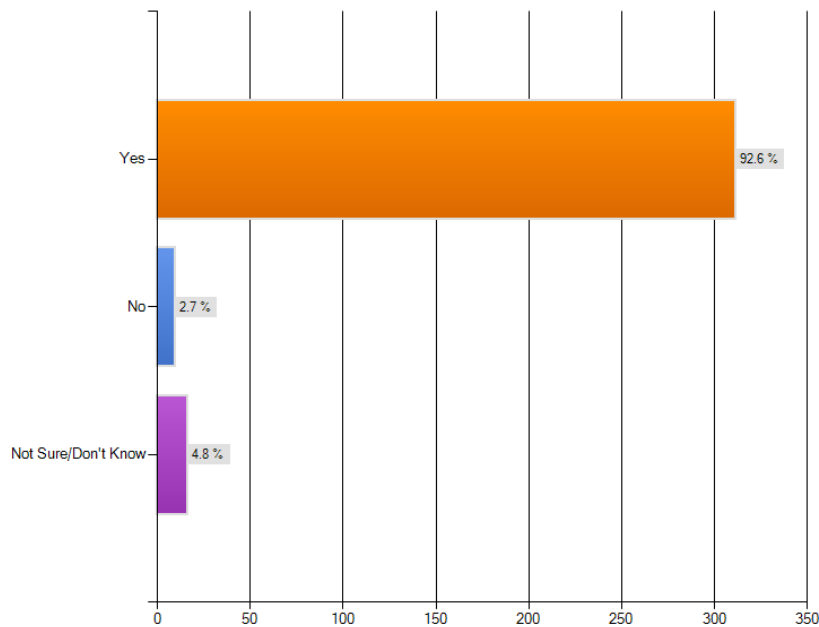
The results reflect an opportunity to improve overall confidence levels.

5.2 Do Yukoners need to do more on a personal level to conserve energy use?

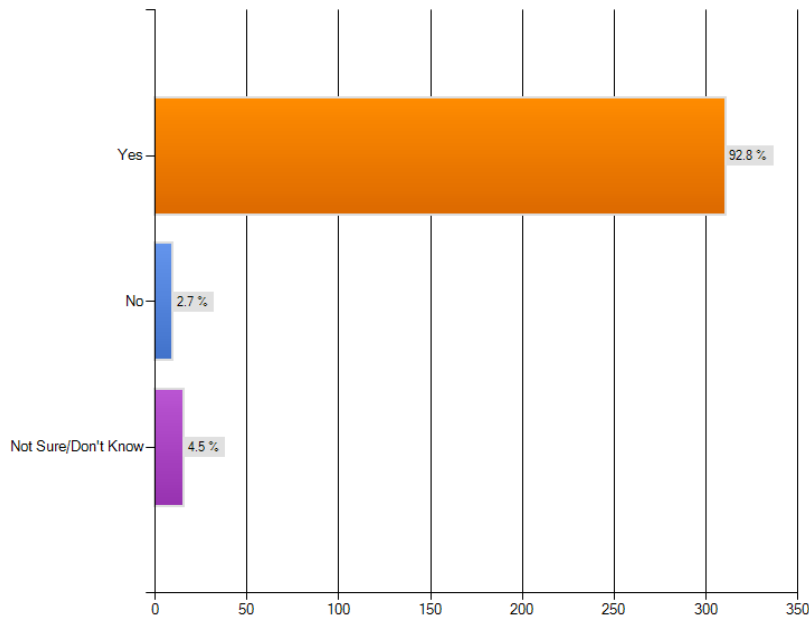


A high percentage (89%) of Yukoners agree they need to do more on a personal level to conserve energy. Response rates to this question were identical in both the online and phone surveys. This indicates a key opportunity for educating and assisting Yukoners in becoming better energy consumers. Ninety-three percent say business and industry needs to do more to conserve energy indicating energy conservation is seen as a shared responsibility.

5.3 Do business and industrial users need to do more to conserve energy use?

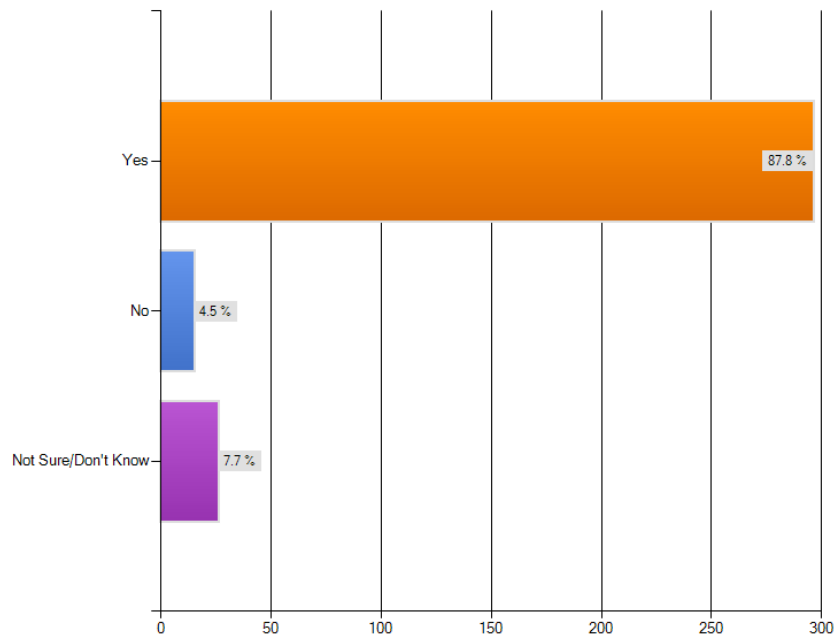


5.4 Should Yukon continue to develop alternative energy sources such as wind and geo-thermal in combination with new hydro sources?



Almost 93% support for developing alternative energy sources is consistent with a previous question that showed 78% strong support and 16% moderate support (94% combined strong/medium support) for the development of alternative energy sources in addition to new hydro sources. This indicates a very strong desire for the Yukon Energy Corporation to pursue development of alternative energy sources as the corporation moves forward with larger scale hydro development to meet future needs.

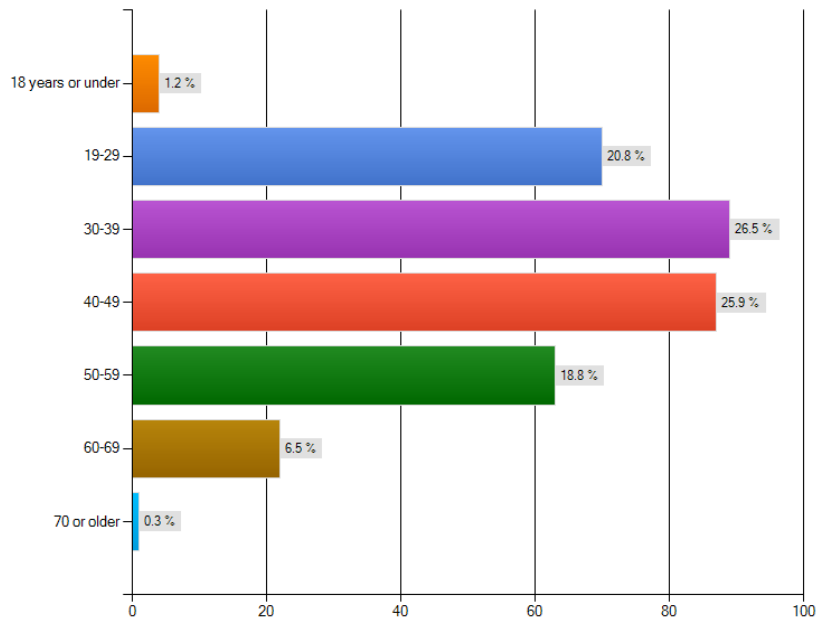
5.5 Is moving away from a reliance on diesel-generated power the right thing to do?



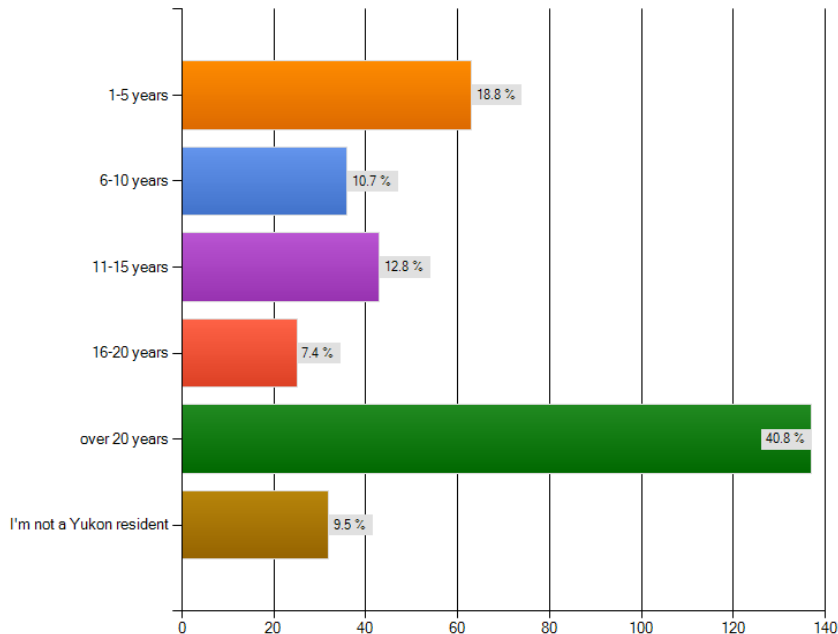
Consistent with support for the development of alternative energy, Yukoners also see diesel-generated power as the least desirable energy source with 88% agreeing that moving away from this source of power is desirable. Comments from the survey however, also indicate an understanding among some respondents that diesel is necessary in some communities and that it provides an important back-up system.

Online Survey: Demographic Data

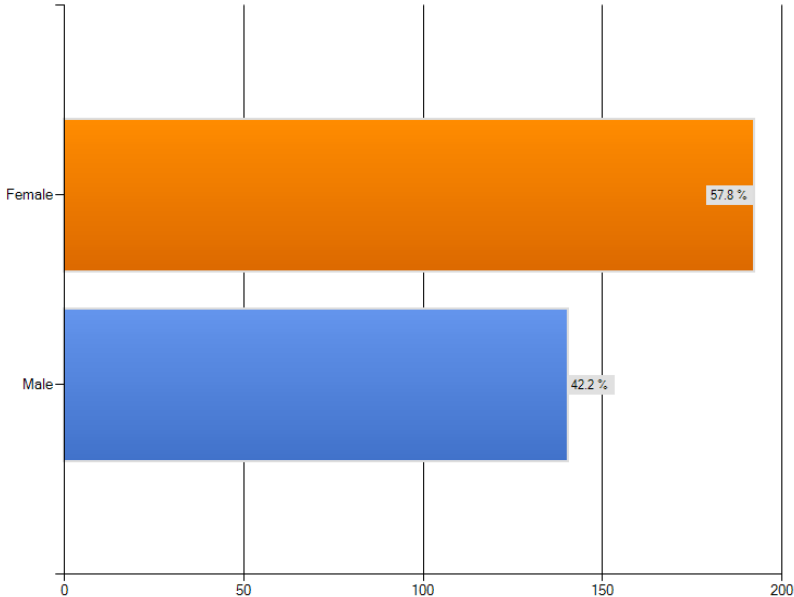
Respondents by age grouping.



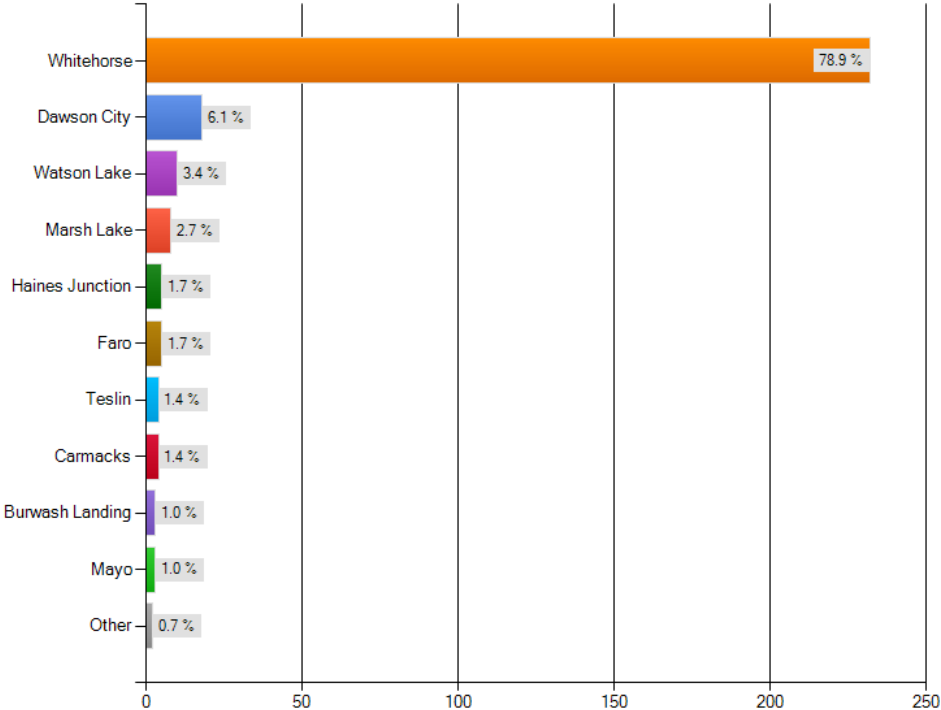
Length-of-residency in Yukon.



Respondents by gender.



Respondents by community.



APPENDIX A

Knowledge, Awareness and Opinion Research Overview

Public Telephone Survey:

Conducted: June 2 – 8, 2010
Sample Size: 184
Selection: Random
Surveyed Communities: (6) Whitehorse , Marsh Lk., Teslin, Carmacks, Haines Jct., Dawson City

Public Online Survey:

Conducted: June 15 – July 1, 2010
Sample Size: 356
Completion Rate: 93%
Selection: Open, web-based, promoted via media/social media
Communities: 17 (Yukon) 20 (non-Yukon)
(326 = Yukon residents: 30 = Non-residents)

Community and Business Leaders Telephone Survey:

Conducted: June 4 – 11, 2010
Sample Size: 25
Selection: Client/Agency Consultation
Communities: (5) Whitehorse; Mayo; Faro; Watson Lk.; Champagne-Aishihik

Community and Business Leaders Online Survey:

Conducted: July 7 – 15, 2010
Sample Size: 41
Selection: Email invitation
Response Rate: 82%
Completion Rate: 100%

Total all Methodologies: 606
Confidence Level: 95%
Confidence Interval: 4

See following page for description of sample size calculation for confidence interval and confidence level.

Sample Size Calculation: Confidence Interval and Confidence Level

The **confidence interval** (also called margin of error) is the plus-or-minus figure usually reported in newspaper or television opinion poll results. For example, if you use a confidence interval of 4 and 47% percent of your sample picks an answer you can be "sure" that if you had asked the question of the entire relevant population between 43% (47-4) and 51% (47+4) would have picked that answer.

The **confidence level** tells you how sure you can be. It is expressed as a percentage and represents how often the true percentage of the population who would pick an answer lies within the confidence interval. The 95% confidence level means you can be 95% certain; the 99% confidence level means you can be 99% certain. Most public opinion research uses the 95% confidence level.

When you put the confidence level and the confidence interval together, you can say that you are 95% sure that the true percentage of the population would have answered the question in the same way as indicated in the obtained survey responses within an 8% range. The wider the confidence interval you are willing to accept, the more certain you can be that the whole population answers would be within that range.

Determine Sample Size

Confidence Level: 95% 99%

Confidence Interval:

Population:

Sample size needed:

Find Confidence Interval

Confidence Level: 95% 99%

Sample Size:

Population:

Percentage:

Confidence Interval:

APPENDIX B

Verbatim Comments: Business and Community Leaders Online Survey

Following are verbatim comments from the community leaders online survey. The survey was conducted in July 2010. Approximately 50 community and business leaders were invited by email to take the survey with 41 (82%) participating. Completion rate was 100% meaning that everyone who started the survey completed the entire survey.

Comments should be viewed in conjunction with the statistical data for these questions.

Author's Note: While the survey comments below are presented verbatim, some have been edited to ensure confidentiality including the removal of any names, personal references or identifiers.

Q 6. Should business and industrial energy users be developing plans to use better energy conservation technologies, equipment and operational practices to help reduce demand?

- 1 The best energy conservation policy is charging what it really costs to generate power as well as expand generation capacity.
- 2 Need a rate structure to give off-peak hour use
- 3 The high price of power in the Yukon ensures that users are already focusing on this; I do not believe that further studies would be cost effective.
- 4 i think govt and its depts need to lead the way on this.
- 5 New power sources are expensive and some energy conservation should be employed.
- 6 Power should be more affordable
- 7 government should not always feel the need to subsidize energy for mines. if the mine can't afford to create its own energy or pay a fair price its not viable
- 8 Higher efficiencies are good as they save businesses money and reduce demand, however there needs to be support for using electricity as an energy source as it's clean and easy to use. Don't penalize companies for wanting to use electricity.
- 9 All businesses and industries should be trying to conserve and reduce energy use.
- 10 this is a stupid question. Any business will try to achieve economies wherever they can.
- 11 no
- 12 Obviously better development planning and lowering costs should improve the bottom line.
- 13 Turn computer off, turn lights off, power electronic devises down.
- 14 Business and industrial users will respond to costs...if demand costs dictate conservation, then conservation will happen. Otherwise, it will not. So, structure the rates accordingly.
- 15 Only as long as costs do not get out of hand.
- 16 Of course, only a fool would say no to this.
- 17 But it has to be at a reasonable cost...we all have our own contributions to make to the overall energy challenge in Canada as a whole.
- 18 Time-of-day metering (cheaper rates at low demand times/seasons). Permit homeowners and business to generate power (solar panels, wind, etc.)

Q 7. Should Yukon continue to develop alternative energy sources such as wind and geo-thermal in combination with new hydro sources?

- 1 Consider Natural Gas
- 2 Alternative energy sources will never provide base load generation but they should be developed as a companion to expansion of base load capacity
- 3 Geothermal – Yes. Wind -No
- 4 Where they are cost competitive. Alternative energy sources must be cost competitive - considering both capital and operating costs and effective utilization
- 5 2 things; i believe we need to be interconnected to the north American grid - expand the lines south, not north. and are we not able to look at natural gas generators instead of diesel?
- 6 Some forms of alternative energy will provide a cost-effective method of meeting new generation requirements and improve electrical grid stability and reliability as well as keep more of our ratepayer's money in the Yukon
- 7 maybe geothermal but so far the wind energy at heckle hill is a failure
- 8 Geothermal may be an option. Yukon Energy hasn't explained to the public enough of what's happening in regards to geothermal. Wind energy I do not support in combination with hydro.
- 9 Wind power in the Yukon has been a joke. Not sure about geo-thermal Hydro if it makes sense. LNG makes a lot of sense. Natural gas turbine plant makes sense
- 10 Absolutely not, unless these are the most economically viable energy sources. So called alternate energy sources should not be subsidized by the rate-payer nor the taxpayer. It is a waste of limited economic resources. It is a boon only for utilities (receiving taxpayer and ratepayer subsidy).
- 11 Hydrogen. The key is not generation but storage, effort should be directed at storage research/solutions
- 12 no
- 13 If either wind or geothermal sources can be cost effectively developed and operated and not just token efforts to keep the greenies happy, then certainly. YEC should be run as a business and its' decisions should make economic sense.
- 14 We don't use enough, more wind for sure
- 15 Not until it is cost effective. At present, I don't believe that it is so.
- 16 Costs are the limiting factor with these alternatives. What about natural gas?
- 17 If it is feasible and affordable, of course.
- 18 They tend to be very high cost and not generate a lot of power so looking at them for a solution to the energy challenge for large industrial operations is probably quite impractical
- 19 where economically feasible

Q 8. Is moving away from a reliance on diesel-generated power the right thing to do?

- 1 Yes. However they do provide much needed back up
- 2 Petroleum fuels are a limited resource and continue to escalate in cost whereas renewable projects have fixed costs and do not rely on depleting resources
- 3 lets be realistic. sure its the right thing to do but only if and when its cost effective
- 4 But not entirely, particularly in the remote areas. Some diesel-generated capacity is also necessary for standby emergency purposes.
- 5 Need diesel as a back up and maybe remote communities
- 6 Where diesel is the more expensive energy sources we should be looking for other alternatives - like Hydro, clean coal, mini nukes, natural gas from the Dempster. What is most economical?
- 7 Unless you can economically use the waste heat.
- 8 Of course, but it should remain as a reliable back-up source.
- 9 It should incorporate other options such as clean coal and natural gas
- 10 Where economically feasible

Q 10. What is the ONE MOST IMPORTANT thing that Yukon Energy needs to consider regarding Yukon's future energy needs?

- 1 Keep energy cost effective
- 2 Consider clean coal or coal gas generation from the Division Mtn coal field at Braeburn
- 3 The focus should be on projects which are large enough to ensure a consistent supply with a margin of overcapacity to supply future industrial activities.
- 4 Need to think about individual customers and not just big industry. i tried calling to speak to someone about outages - no response and no one really cared. i would imagine if i was minto mine, someone would talk to me.
- 5 Yukon Energy needs to first solicit all of its new power from independent power producers on a take or pay basis as is done in most of the rest of North America. Yukon Energy should stay on to manage the transmission and existing production but should look to the private sector for new energy sources. The Mayo B project is an example of the high cost of new utility-based projects. This load requirement should have been put out to the private sector first
- 6 Developing alternate source of energy such as Hydro, Wind power etc.
- 7 Bring in Power to support mining development. There are major deposits in Yukon that could be developed if power was available. This would create a lot of jobs and wealth for Yukon. These developments are not likely to proceed unless the power situation improves.
- 8 Cheap long term power
- 9 Greenhouse gas
- 10 Complete a grid of all yukon/northern bc
- 11 I don't think government or government corporations are agile and creative enough private sector will provide energy solutions in the future as energy becomes more expensive.
- 12 I have confidence that they can deliver the energy. I do not believe Yukon Energy has done a good job or is continuing to do a good job in making the clean energy projects cost effective. Private industry can build it cheaper by far.
- 13 Location of new / additional power generation infrastructure relative to new industrial developments (e.g. mines).
- 14 Look at developing a Natural gas Turbine plant. Tie the grid into B.C.
- 15 Develop our energy needs in the most prudent, economically efficient manner possible. Your job is to develop energy at the lowest possible cost to the rate payer with no subsidy from other levels of government. All other agenda's are someone else's responsibility. The Mayo B is a travesty. 160 million for 6 megawatts of power is not providing electricity at a very economic price. 26million per megawatt - what a joke.
- 16 a multi faceted approach which will bring a diversity of options and solutions; the traditional utility model does not do well with uncertain circumstances and the ability to deliver innovative and creative solutions. So, in addition to the traditional consultants, non- traditional creative thinkers/entrepreneurs should be encouraged. Vision will be required
- 17 Future demand
- 18 Sustainability
- 19 Availability of petroleum will become constrained, and cost will increase greatly. Guaranteed.
- 20 SE Yukon's dependence on diesel
- 21 Reliability and accountability. That means don't blame every brown out or spike or outage on squirrels and ravens. If the line is 10 metres off the ground and the trees 15 meters tall, the right of way should be cut and maintained so no tree can hit the line.
- 22 Become self-sustainable. Get off of diesel, ridiculous and disgusting, and embarrassing.
- 23 Reliability, followed closely by affordability
- 24 Large mines should develop and pay for their own power generation. Yukon Energy Corp should not be involved in short term, large scale projects. It is not their job. If we have excess generation, by all means sell it, but don't develop large-scale projects for short term projects at our risk and expense. Stick to the mandate of providing reliable, affordable power to the Yukon people. This is a simple task if not confounded by mining mega projects that are risky at best. If they are not feasible without grid power, let them wait until they are.
- 25 Be prepared for future needs by industry.
- 26 How to derive large energy sources...+50MW...for operations like Casino, Northern Dancer,

Selwyn...and the Klondike/Rau/Eagle will likely generate new projects requiring clusters of energy

-
- 27** Reasonable cost with reliable service.

 - 28** Reliability -- I'm tired of re-setting my clocks every couple of days

 - 29** Let Yukoners invest in the Yukon to promote YEC ie: Like Air North did to get off the ground

 - 30** Clean energy and protection of fresh water.

 - 31** Forays into alternative energy seem hesitant (e.g. wind), and the proposals for private energy producers (micro-hydro, solar, etc.) are restrictive compared to other jurisdictions.

 - 32** cost to customers

 - 33** Stable rates.

APPENDIX C

Verbatim Comments: Public Online Survey

Following are verbatim comments from the public online survey that was conducted between June 15 and July 1, 2010 and achieved 356 responses with a 93% completion rate, meaning that 93% of those who started the survey completed it. In total, residents from 17 Yukon communities participated. In addition, 30 non-residents of the Yukon also participated in the survey.

Of particular note is that 27% of survey respondents took the time to write a comment. Coupled with the high response and completion rates, the number of comments recorded indicates a high degree of interest in the topic of Yukon's energy future.

Author's Note: While the survey comments below are presented verbatim, some have been edited to ensure confidentiality including the removal of any names, personal references or identifiers.

Q . Do you have a comment about Yukon's energy future?

1 One word: Geothermal.

2 I am curious what is happening with the windmills. They don't always seem to be operating. I hope the YEC Board is supportive of alternative energy, including energy conservation.

3 Where any hydro expansion is necessary to meet power demands, it should be accompanied by education campaigns targeted to both private and industrial users on the importance of limiting consumption. While in an ideal world we could expand only with alternative energy sources, we don't seem to be there yet, and Yukoners don't seem to be prepared to foot the bill. Any new hydro undertaking or expansion must be carefully studied, preferably by an independent third party, to ensure that habitat is not being negatively impacted by YE activities or infrastructure. Monitoring of impacted terrestrial and aquatic environments should take place over the duration of the project at a much greater degree than what may be provided for by the water license.

4 Start by promoting conservation.

5 Less of a foot print is the goal. renewable energy is a blessing and we are aware of the technology. We must use it. Geo-thermal has barely been tapped, and it can do so much.

6 Behind door politics, such as (reference removed) trying to sell off part of our assets, should be avoided at all costs.

7 I do not want an unregulated, private owned energy corporation.

8 I hope they have a plan for the future if industry leaves.

9 Sounds like Yukon Energy already knows what to do, just needs Yukoners and the YG buy in! Can't wait to see what happens!!

10 Should promote homestead small scale energy generation and be able to sell excess back to grid.

11 Develop alternative energy

12 Make it more reliable - less unplanned power outages

13 Not at the expense of the environment!

14 Focus on micro-hydro, wind, geothermal and allowing people to generate their own power and sell it to the grid.

15 I am extremely opposed to the idea of clients using less power getting a discount. I installed electric baseboards in my new house as back-up for my woodstove, because I felt it was the greenest option. It does not fit with Yukon Energy's mission & philosophy to reward & encourage people to burn oil for heat. I can see how it would be less of a problem for Yukon Energy, but if you want to build better, healthier communities, this is not the way to do it.

I would like to see a lower evening rate. I have no idea of how much that would cost, but it

may be able to balance the draw better. It would be incentive for people & businesses to make changes and be more aware of their power usage.

-
- 17** Natural gas (alternative)
-
- 18** What about natural gas?
-
- 19** promoting the use of hydro and wind electric is better for the environment and possible for the North. Yet YEC continues to penalize people for choosing this form of green power to heat their homes. YEC has the ability to one day provide hydro power with out the use of diesel to all of us. This should be encouraged, rather than discouraged.
-
- 20** I will add my comment here since there seems to be no other place.....I am very dissatisfied with the power we get in whitehorse. Numerous times I have measured the power at my house and it is NEVER 120, always 110 or less. Constant brownouts, power outages make me think I am in a 3rd world country at times. The power supply in the Yukon is substandard in my experience. Hard on equipment, motors, computers etc. It has gotten better in the last year but has a long way to go.
-
- 22** hopefully they use the wind as it is always blowing up here but i am no expert on that type of use
-
- 23** Question 4 should have an option offering developing alternative energy sources without tying it to new hydro sources. By selecting Yes to agree with developing wind energy etc., by default I must endorse development of new hydro sources. I do NOT endorse new hydro energy sources carte blanche and feel this is a dishonest question.
-
- 25** Over dependence on fossil fuels is a major cause of global instability.
-
- 26** Because of our geographic location and the associated challenges, diesel power backup of our grid is essential to the safety of all Yukoners,
-
- 28** They will do well if we can get rid of the territories dependency on fuel to light their homes etc.
-
- 30** Hydro should be expanded where possible and supplemented by large amounts of wind. I feel that wind is the most economical, reliable and realistic clean energy source for YEC to pursue. It may not be available at all times but when it is the reservoirs for hydro can be filling (storing) power for later use. Furthermore, combined heat and power using biomass (our forests) as fuel would make a lot of sense here since when the heat demand is the greatest, the electrical demand also peaks! This would require YEC to sell heat as well as electricity, but it is a large utility that could figure that out as well. Downtown Whitehorse has potential for a district energy system that could be the first consumer of this heat.
-
- 33** Yukon is a beautiful, fairly pollution-free place. Reliance on diesel-generated power is unfortunate, as it creates more air pollution. It's fantastic to see new projects like Mayo B being brought in, to help with hydro power generation.
-
- 32** sustainable energy is key
-
- 33** Quite frankly I have been angry at the exorbitant rates we have been getting - but through our observance of ways to lower our power bills we can tell that if others followed suit they could lower theirs as well - while we need power we also should be more careful how we use it - small/home businesses should also have their rates lower - our small local businesses get bit in the butt every month by a huge amount for power - that alone closes many of them down - our small local businesses should be thriving rather than closing due to every cent they make going to the power and phone bills. etc. If you can't make any money then how can your business survive we all need to eat and pay the bills!!!! The power is the worst of it!
-
- 34** Do everything they can to get away from Diesel the cost will be too high
-
- 36** Be realistic and yet think of the people who live there. To help people with their health and the environment.
-
- 37** it's time to accept the reality of our situation. time to change our ways. time for clean, efficient, affordable energy systems that put back 'in' not just take out. NO COAL, NO NUCLEAR, no more hydro, no more diesel.
-
- 38** Good to have as a backup power source
-
- 40** Emergency back-up power by diesel should be maintained, but some communities run diesel all the time. These should be priorities.
-
- 41** Let's get off fossil fuels. It is hypocritical to refuse to develop oil and gas in our own backyard while we use much much more than other parts of the world who suffer from the development that our use requires.
-
- 43** The future of energy in the Yukon or Yukon Energy's future? Very confusing questions.
-

Congrats to whomever worded it-you're good! Yes we want enough environmentally responsible and affordable energy to meet our needs, but it should be developed in a fiscally responsible way as well.

-
- 44** I'd like to see more alternative choices, but realise that's easier said than done - expense, challenges to connect to the grid, technology issues etc.
-
- 45** Please allow home owners to produce electricity, and to be able to sell it back to the grid.
-
- 46** Bio fuel/Co-generation
-
- 47** Hopefully you'll stay Yukon owned and push for more alternative energy.
-
- 48** use your resources wisely and keep the Yukon a viable living space
-
- 49** Quit with the elaborate plans, and rate hikes! Affordable Power with out spending capitol because you can to get your 10% on investment!
-
- 50** Work with Yukoners to promote energy efficient programs and environmentally friendly alternative energy. This also will protect and promote our beautiful territory.
-
- 51** Go nuclear!
-
- 52** develop a better maintenance program in repair/replace outdated lines and equipment
-
- 53** all I'm saying.. if its not broken? why fix it?
-
- 54** Get rid of diesel!
-
- 55** I think there is a lot more to be done with alternative energy sources. The windmills could be hooked up to something viable, e.g. greenhouses, so people can actually see the opportunities alternative sources can provide. The use of geo-thermal in heating homes is another area that should be looked into more, and used.
-
- 56** I would like to see the legislation move forward allowing private power producers to sell their wind/hydro generated power to the grid.
-
- 57** they should have both as one can be a backup
-
- 58** DO NOT OUTSOURCE!!
-
- 59** More exploration into geothermal would be nice to see, even establish a pilot project like the Heckel Hill windmills
-
- 60** IPP must become a reality in Yukon.
-
- 61** The goal should not be a combined effort, but a process of switching completely to greener sources.
-
- 62** Yukon has already created scales of economy based upon hydro electricity... the ecological footprint is less in continuing to develop hydro electricity then it is in developing alternative energy sources. Alternative energy sources are not all that they are perceived to be. We may need to be reliant on diesel generation for back up systems and that is understandable...
-
- 63** Yes. Set the conditions for success. Meaning do what is right and move into the alternative energy sources. to continue to use diesel is just wrong and creating impoundments is not the answer either. I accept a balance but more wind and geo thermal would be better. It may cost a lot up front but the payoff down the road is worth it.
-
- 64** I've heard there's a radar-detection method of stopping windpower ...er, fans...to prevent bird deaths.
-
- 66** I think it's important to keep Yukoners informed as to what the future plans are and what we need to do to help (as the general public)...Provide schools and teachers with more hands-on materials to educate our young people.... Help us to help ourselves!!!! :)
-
- 67** bio-diesel
-
- 68** You have collapsed two very different sources (wind and geo-thermal) into one. I'm not in favour of any more wind-related investments. Geo-thermal is worthy of investigation. The key thing is to build more supply. The price per kW I paid for electricity in the lower mainland is a fraction of the cost I pay here. We need affordable, reliable energy as a key ingredient in our economic future. Yes, NWT & NU pay more, but look at the precarious state of their economies; more private development, especially in mining and industry, will only happen with reliable, affordable energy.
-
- 69** So far Yukon Energy has been reliable and cost-effective provider of electrical energy and consumers would like to see the same high level of customer service from this company. The company definitely needs to add alternate sources of energy like wind and geo as Yukoners believe in environment friendly solutions are the best key to some key challenges of future.
-
- 70** Even investigating bio-diesel would be a step in the right direction.
-

- 71 Diesel is the most reliable power.
- 72 At least in the short term, demand shaping (cheaper off peak power) should be considered. And WHY is it not common knowledge when the generating capacity is at the edge? People could schedule discretionary power use to help everyone if that information was available.
- 73 until some other source of power can be developed
- 74 We need to use the environment in a healthy way to provide us with the energy generation we require now and in the future. Along with that all Yukoners need to learn to conserve energy in their homes and businesses. Yukon Energy needs to ensure it can provide enough power for us to grow in industry and private homes. This may mean research into alternative energy sources.
- 75 (Don't) sell Yukon's interests down the road. I dont trust them (gov't)
- 76 More consistency & less power bumps would be easier to live with, or some protection device at the meter?
- 77 We need to get the 'politics out of the picture, we need the diesels as back-up power in case of outages
- 78 Yukon Energy needs to diversify their energy sources by developing wind farms, near Whitehorse.
- 79 YE is awesome! Have spoken to people in the company - very nice and helpful
- 80 Have a positive belief in an energy conscience population to do the right thing.
- 81 just want to make sure we keep warm in the winter !
- 82 More windmills, More geothermal, - more renewable, reusable, and clean energy. It will better many things.
- 83 It is more important to control demand than supply. It is almost as important that we have a widely distributed system of micro producers- all customers should be producers and Yukon Energy could be relegated to a producer of last resort and a coordinator of power production. Only thus will our energy security be assured
- 85 i hope to see more encouragement on people having their own power generation at home and it being able to feed back into the grid.
- 86 question 4 is double barreled. i want yukon to DEVELOP alternative energy sources on its own for its own accord, NOT in combination with new hydro.
i have lots more to say about yukon's energy future. call me (name and phone number removed for confidentiality)
- 87 Yes, why is question 4 a loaded question? What if I support wind/geo-thermal, yet don't want to see new hydro developed?
- 88 Energy includes more than just power. We need to also be thinking about heat and transportation as well. Changes to these sectors may put more demand back on to the power sector if it is clean power.
- 89 For obvious economic reasons today and into our future, we must put our energy plans in place now. This kind of plan attracts investment in our communities and in our people. The longer delayed, the longer we remain a "have not" part of Canada.

Prepared for the Yukon Energy Corporation
by Andrew Hume and Associates Ltd.
in association with Aasman Brand Communications

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