

Survey of Columbia Generating Station Neighbors for Energy Northwest

October-November 2017

by
Bisconti Research, Inc.
www.bisconti.com

Method

- 300 residents within the 10-mile radius of the Columbia Generating Station were surveyed:
 - 204 online
 - 96 by phone
- October 9 – November 8, 2017
- Households with persons who worked at a nuclear power plant during the past year are excluded.
- Columbia 2017 plant neighbor results are compared with:
 - 2015 survey within 10-mile radius of Columbia Station and
 - Benchmarks from 2017 national survey of residents within the 10-mile radius of the nation's 59 nuclear power plant sites.
- By Bisconti Research with Quest Global Research

Opinions About Nuclear Energy

Importance of Nuclear Energy in the Years Ahead

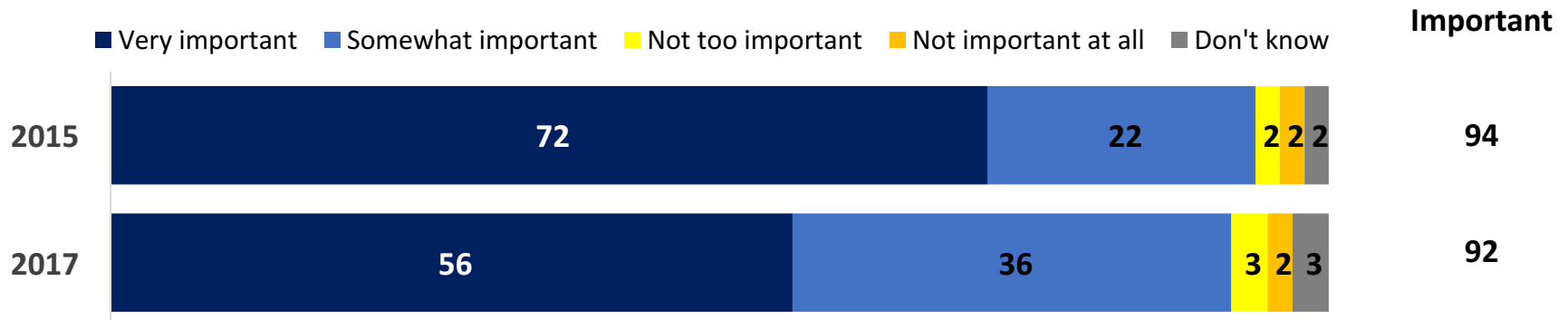
- Almost all of Columbia neighbors (92 percent) believe that nuclear energy will be important in meeting the nation's electricity needs in the years ahead.
- This figure exceeds the national plant neighbor benchmarks and is similar to 2015. Although a majority (56 percent) believe nuclear energy will be very important, those interviewed in 2015 included more residents who were strongly convinced (72 percent).

Columbia Vs. Benchmarks (2017):
Total Important (%)



Importance of Nuclear Energy in the Years Ahead (2015-2017) (%)

How important do you think nuclear energy will be in meeting this nation's electricity needs in the years ahead? Do you think nuclear energy will be very important, somewhat important, not too important, or not important at all?



Opinions about License Renewal and New Plants

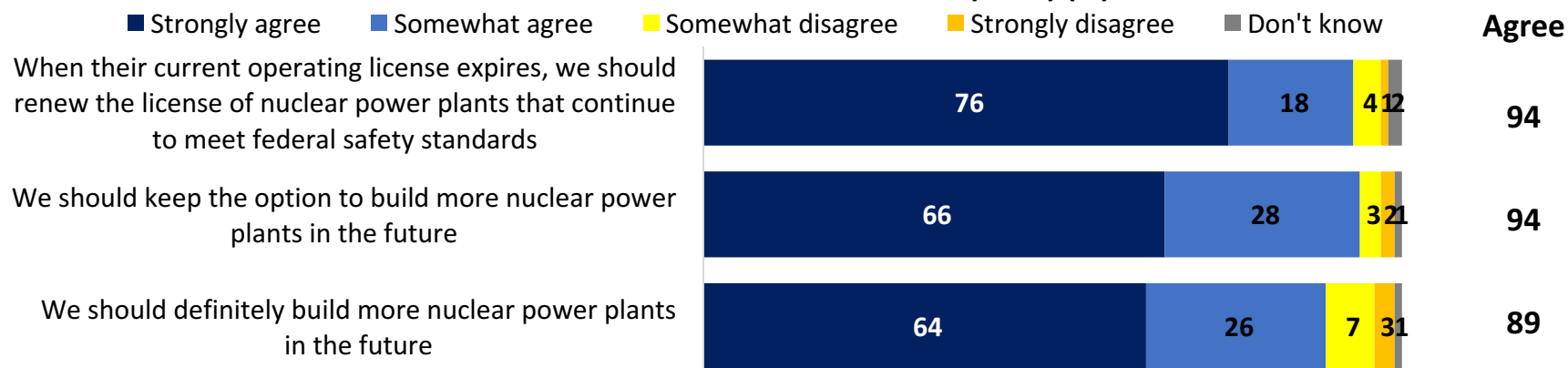
- Columbia neighbors' attitudes toward license renewal and new plants are overwhelmingly favorable. Especially regarding new plants, they far exceed the benchmarks from the national survey.
- Solid majorities strongly agree with license renewal and building more nuclear power plants.

Percent Agree with License Renewal and New Plants (2017)

Please tell me if you personally strongly agree, somewhat agree, somewhat disagree or strongly disagree with the following statements.

	Columbia	All 59 Sites	West	Low Pop. Density
When their current operating license expires, we should renew the license of nuclear power plants that continue to meet federal safety standards	94	89	89	91
We should keep the option to build more nuclear power plants in the future	94	78	81	82
We should definitely build more nuclear power plants in the future	89	71	74	75

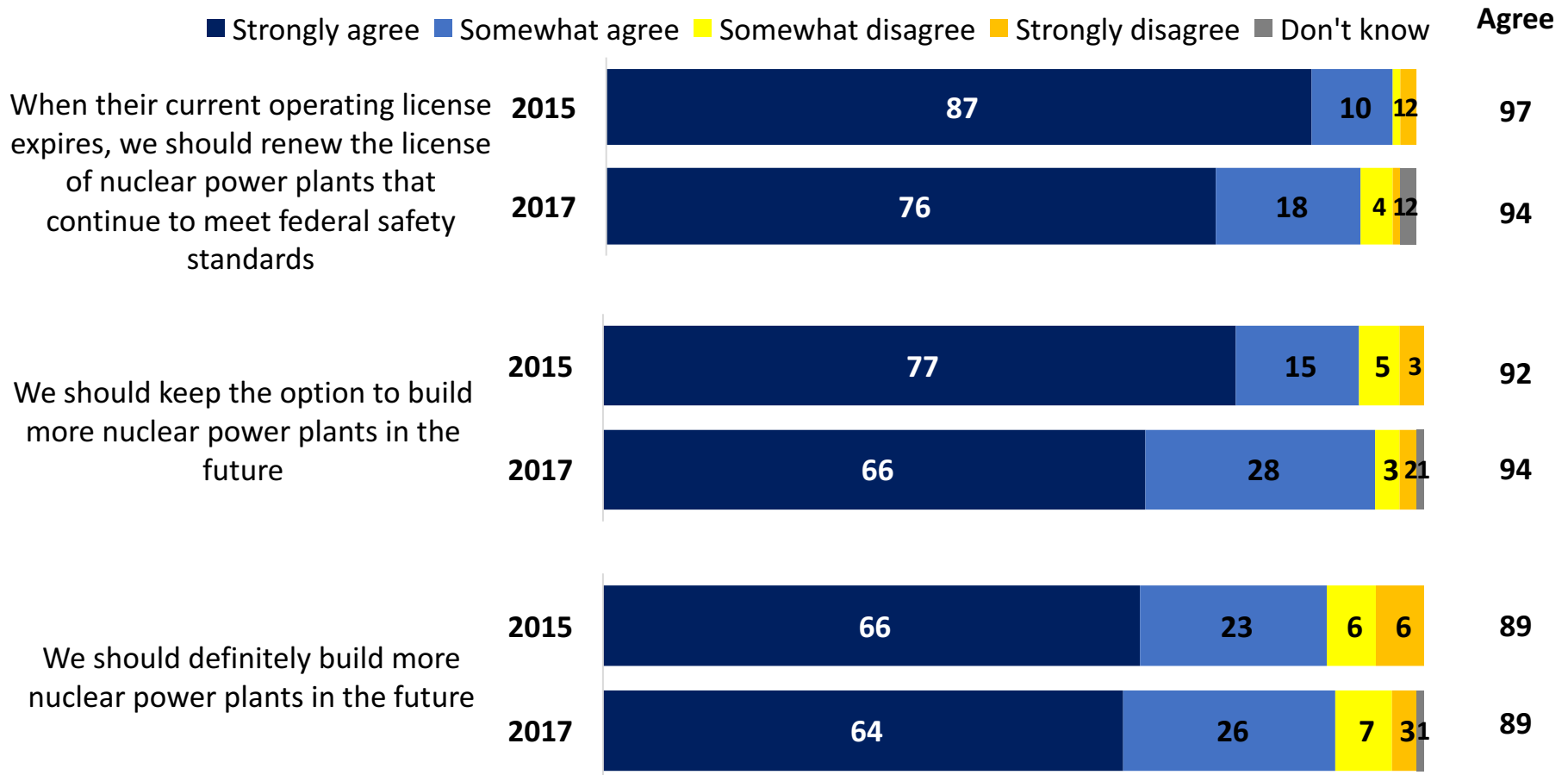
License Renewal and New Plants (2017) (%)



Opinions about License Renewal and New Plants: Trend

- There was some decline between 2015 and 2017 in the percentages who strongly agree with license renewal and new plants.

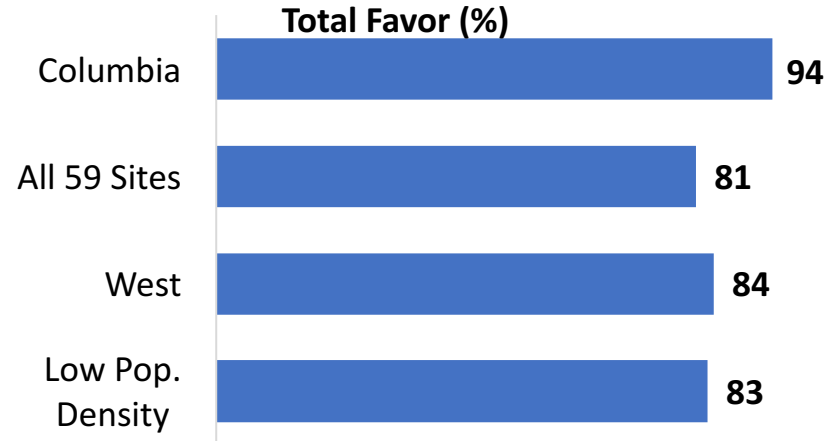
Opinions about License Renewal and New Plants (2015-2017) (%)



Favorability to Nuclear Energy

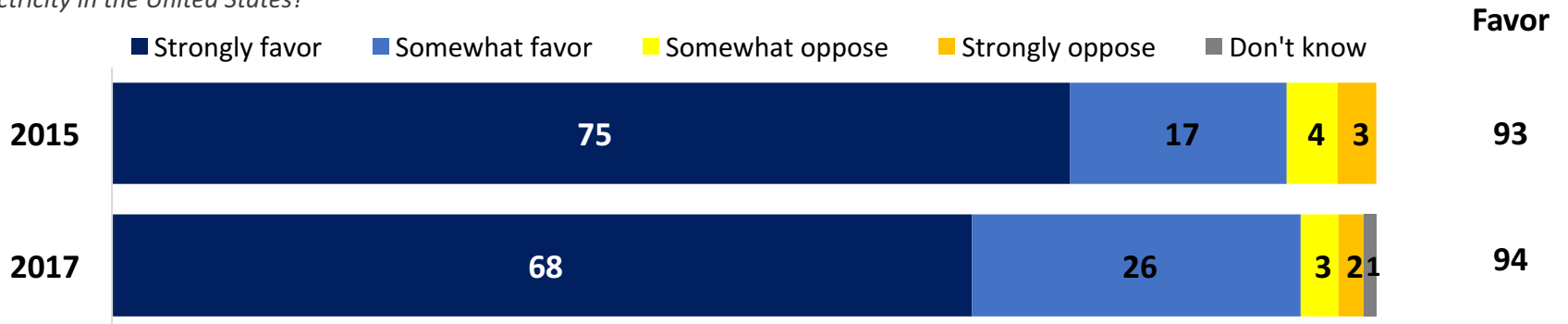
- As in the past, almost all Columbia neighbors favor the use of nuclear energy: 94 percent are favorable and 68 percent are strongly favorable.
- This level of support is well above national plant neighbor benchmarks.
- In 2015, even more Columbia neighbors (75 percent) strongly favored nuclear energy.

Columbia Vs. Benchmarks (2017):



Favorability to Nuclear Energy (2015-2017) (%)

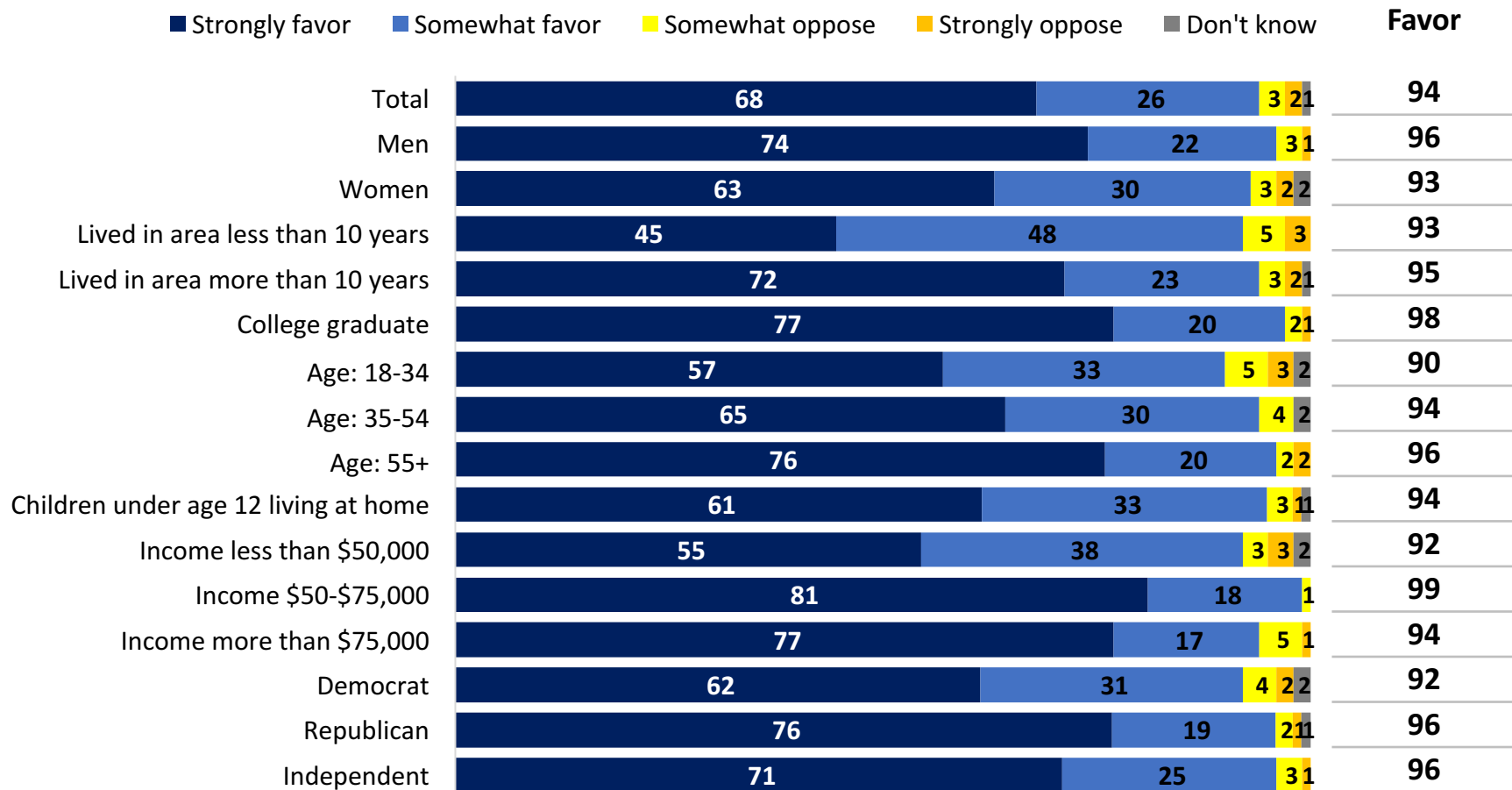
Overall, do you strongly favor, somewhat favor, somewhat oppose, or strongly oppose the use of nuclear energy as one of the ways to provide electricity in the United States?



Favorability to Nuclear Energy: Demographics

- At least 90 percent of all demographic groups of Columbia plant neighbors favor the use of nuclear energy. Those least strongly favorable are residents who lived in the area for less than 10 years, Millennials, and persons with incomes of less than \$50,000. Women and Democrats also are less strongly favorable than others.

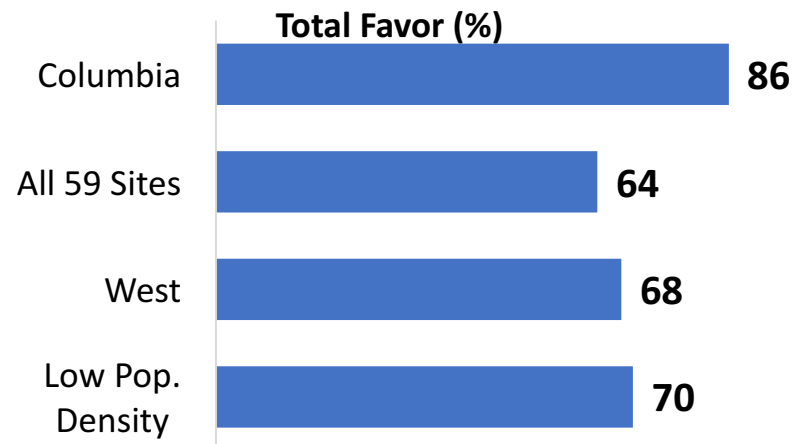
Favorability to Nuclear Energy (2017) (%)



Columbia Neighbors' Perception of Community Opinion About Nuclear Energy

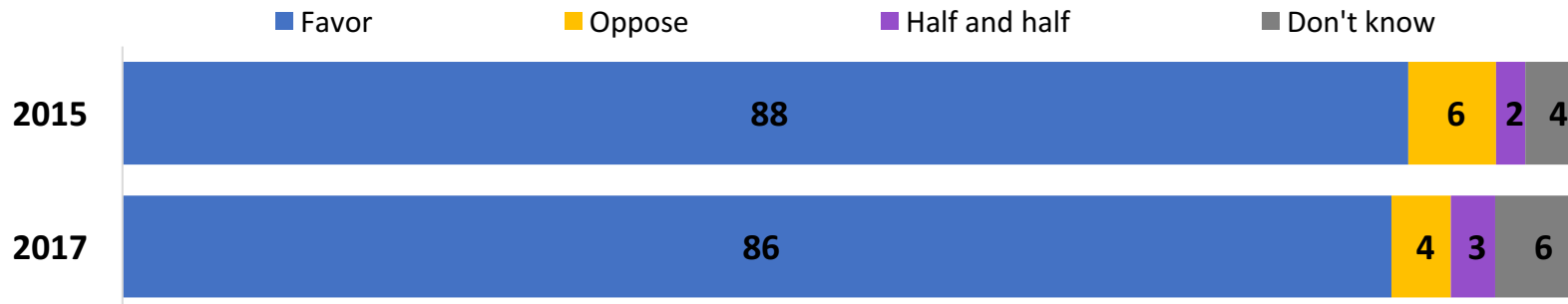
- Columbia neighbors recognize the community support that exists; 86 percent believe that a majority of people in their community favor the use of nuclear energy, and just four percent believe they are opposed.
- These perceptions are more favorable than national benchmarks.
- They are unchanged since 2015.

Columbia Vs. Benchmarks (2017):



Columbia Neighbors' Perception of Community Opinion about Nuclear Energy (2017) (%)

Do you think that the majority of people in your community favor or oppose the use of nuclear energy?



Benefits Associated With Nuclear Energy

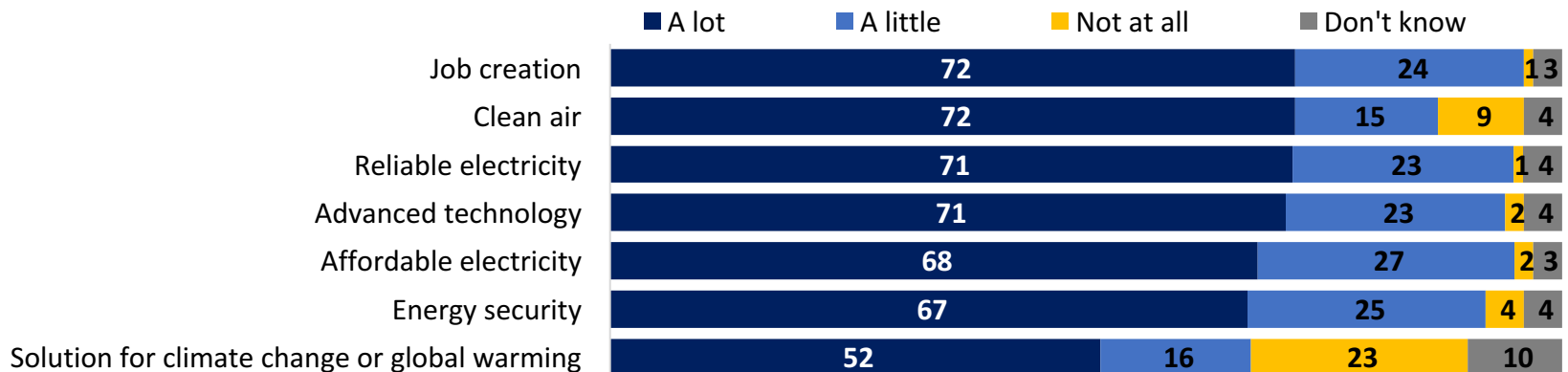
- Columbia neighbors' support is grounded in exceptionally wide awareness of nuclear energy's benefits. Job creation, clean air, and reliable electricity stand out for this community, along with affordable electricity and energy security. A large majority also associates nuclear energy a lot with advanced technology.

Percent Associate Benefits "A Lot" With Nuclear Energy (2017) (%)

Do you associate nuclear energy a lot, a little, or not at all with?

	Columbia	All 59 Sites	West	Low Pop. Density
Job creation	72	59	67	66
Clean air	72	57	65	62
Reliable electricity	71	70	74	73
Advanced technology	71	60	61	64
Affordable electricity	68	56	61	61
Energy security	67	61	64	65
Solution for climate change or global warming	52	40	40	43

Benefits Associated with Nuclear Energy (2017) (%)



Percent Associate Benefits “A Lot” With Nuclear Energy

- In 2015, even more Columbia neighbors associated nuclear energy “a lot” with these benefits.

Percent Associate Benefits “A Lot” With Nuclear Energy (2015-2017) (%)

	2015	2017
Reliable electricity	81	71
Energy security	72	67
Job creation	77	72
Clean air	76	72
Affordable electricity	74	68
Solution for climate change or global warming	57	52

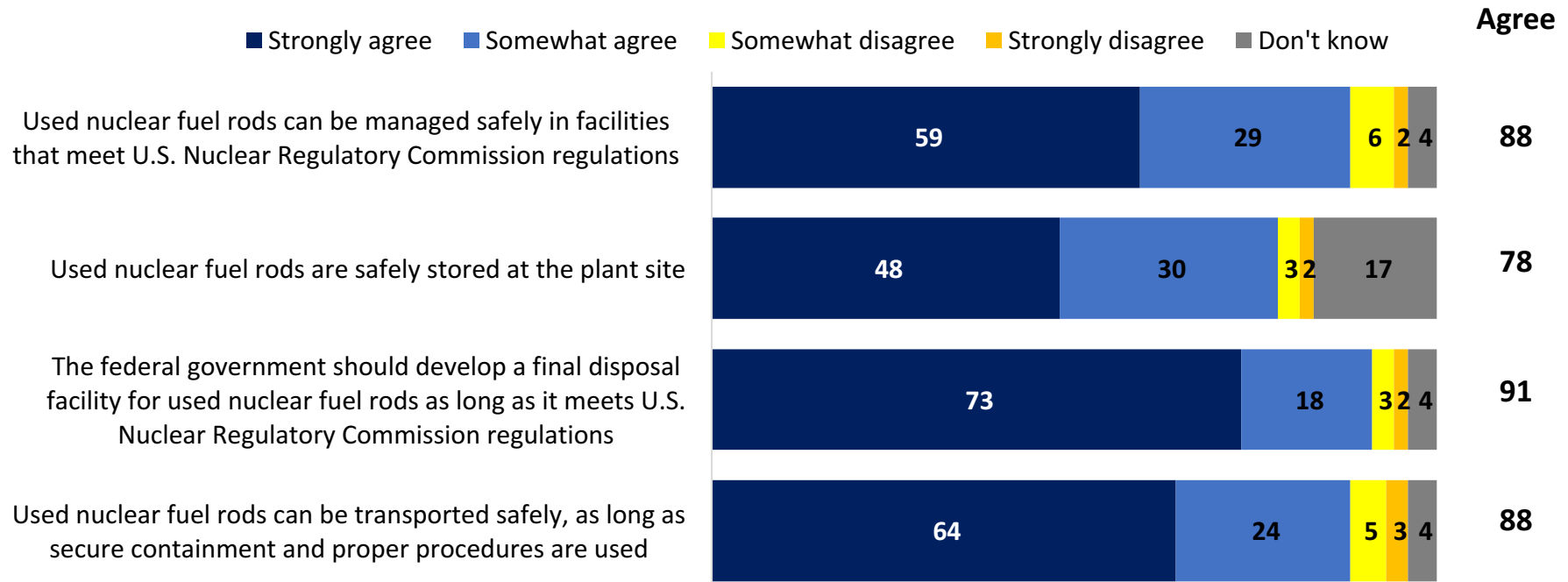
Trend is only shown for benefits asked in both 2015 and 2017.

Opinions about Used Nuclear Fuel Management

- Columbia neighbors continue to hold unusually high confidence in the safety of used fuel management and transportation. Most (88 percent) agree that used nuclear fuel rods can be managed safely in facilities that meet U.S. Nuclear Regulatory Commission regulations and also that they can be transported safely. There is stronger consensus in support of developing a final disposal facility.**

Opinions about Used Nuclear Fuel Management (2017) (%)

On the subject of nuclear waste management and specifically the management of the used nuclear fuel rods from nuclear power plants, do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with the following statements?



Opinions about Used Nuclear Fuel Management

- Opinions of Columbia neighbors on used nuclear fuel management are more favorable than national benchmarks.

Percent Agree with Statements about Used Nuclear Fuel Management (2017)

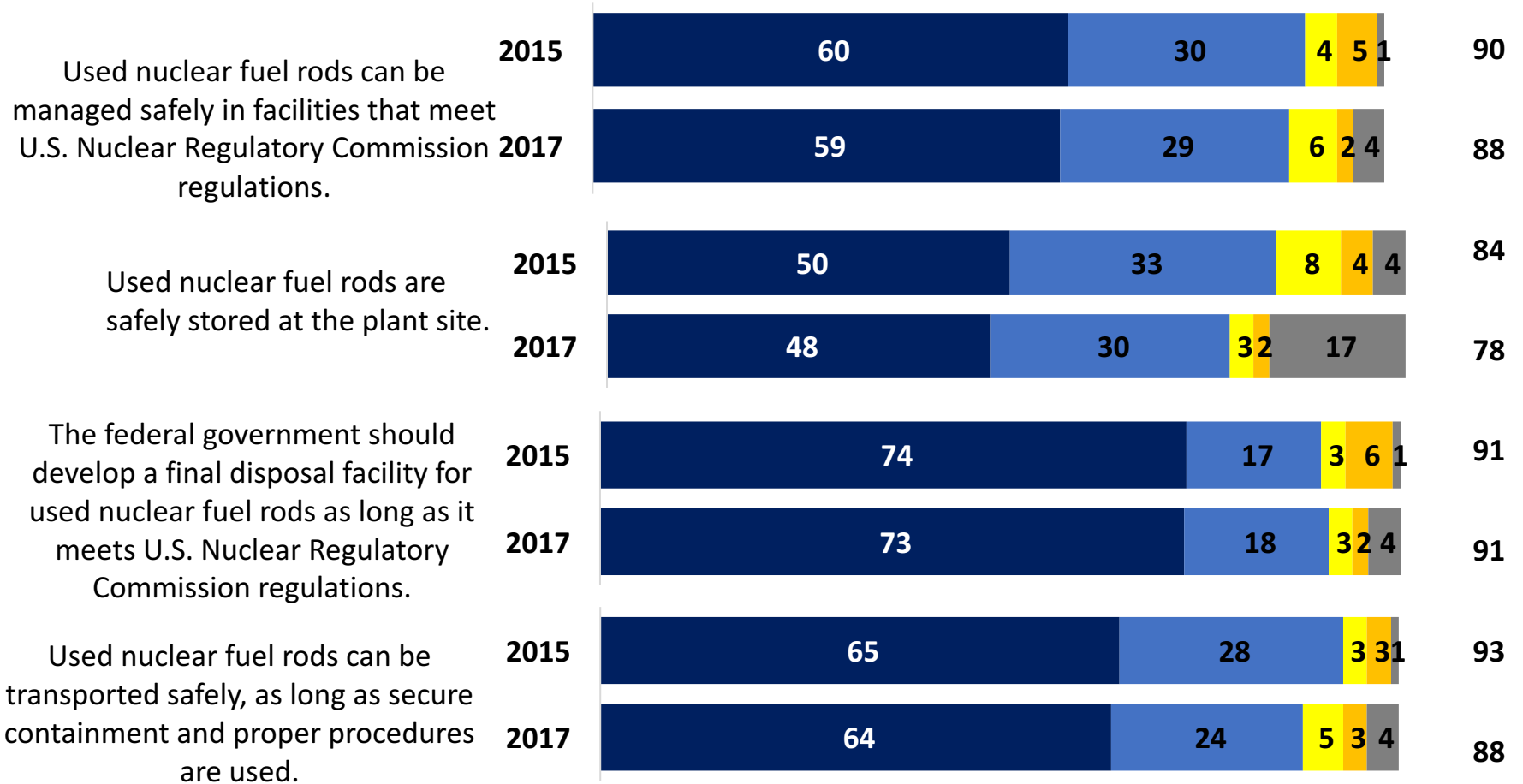
	Columbia	All 59 Sites	West	Low Pop. Density
Used nuclear fuel rods can be managed safely in facilities that meet U.S. Nuclear Regulatory Commission regulations.	88	78	80	80
Used nuclear fuel rods are safely stored at the plant site.	78	66	65	67
The federal government should develop a final disposal facility for used nuclear fuel rods as long as it meets U.S. Nuclear Regulatory Commission regulations.	91	86	85	87
Used nuclear fuel rods can be transported safely, as long as secure containment and proper procedures are used.	88	77	82	80

Opinions about Used Nuclear Fuel Management: Essentially Unchanged

Opinions about Used Nuclear Fuel Management (2015-2017) (%)

■ Strongly agree
 ■ Somewhat agree
 ■ Somewhat disagree
 ■ Strongly disagree
 ■ Don't know

Agree

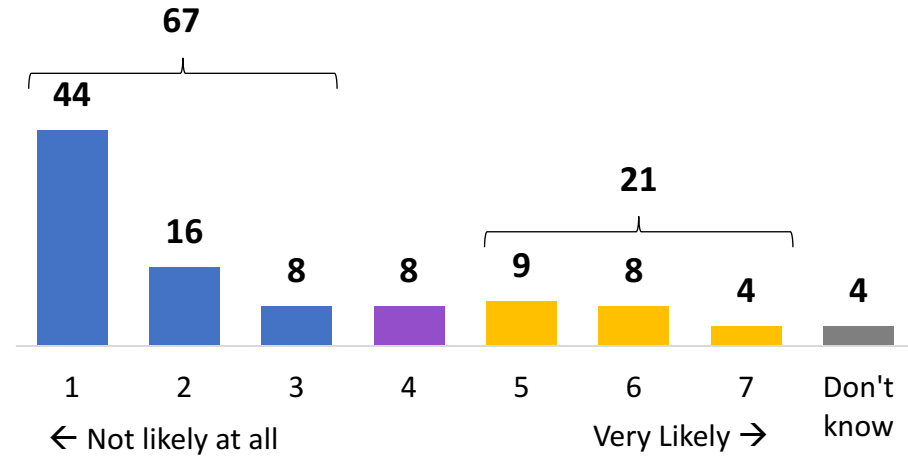


Perceived Radiation Exposure Near a Nuclear Plant

- Despite all these positive attitudes, perceptions about radiation exposure remain a concern. In both 2015 and 2017, one in five Columbia neighbors said they believe it is likely that people living near a nuclear power plant are exposed to harmful levels of radiation.

Perceived Radiation Exposure Near a Nuclear Plant (2017) (%)

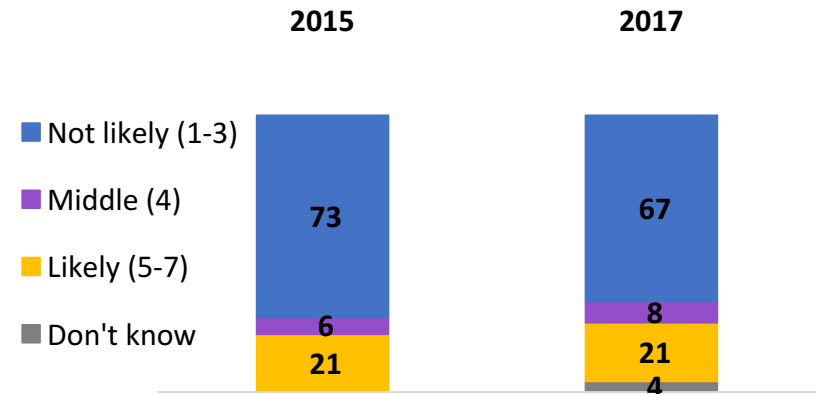
Please think of a scale from "1" to "7," where "1" means "not likely at all" and "7" means "very likely." Using this scale, how likely would you say it is that people living near a nuclear power plant are exposed to harmful levels of radiation? The more likely you think it is, the higher the number you would give it.



Columbia Vs. Benchmarks (2017): Total Not Likely (1-3) (%)

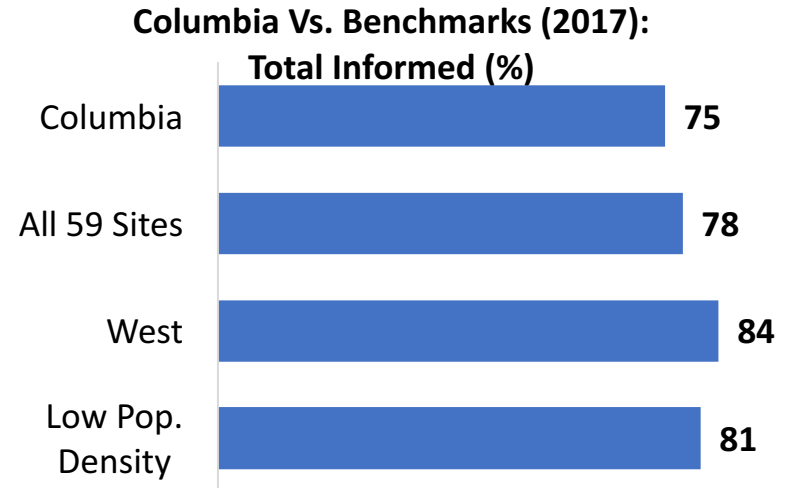


Perceived Radiation Exposure Near A Nuclear Plant (2015-2017) (%)



How Well Informed Columbia Neighbors Feel About Nuclear Energy

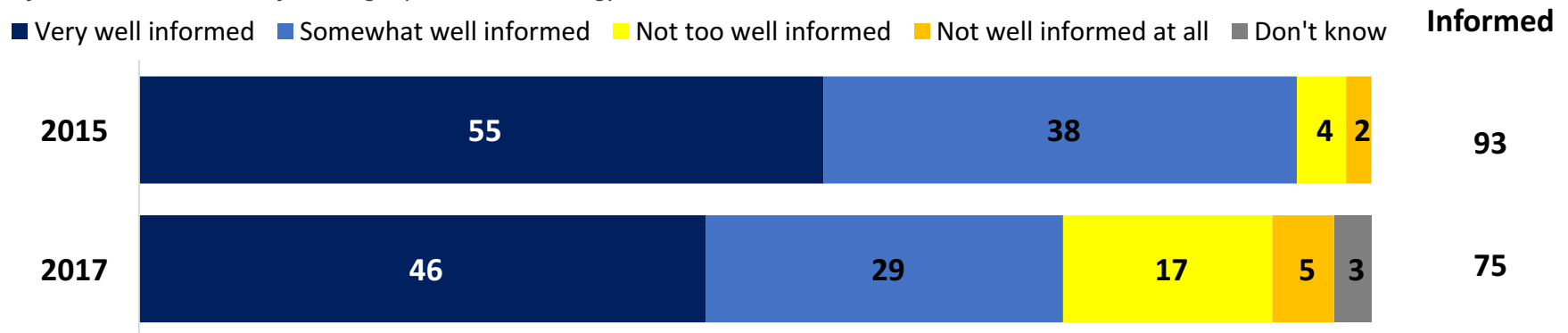
- Three-fourths of Columbia neighbors surveyed in 2017 feel at least somewhat well informed about nuclear energy, and nearly half feel very well informed.
- Although this level is high, it is lower than in 2015 and below plant neighbor benchmarks for the West and low population density areas.



How Well Informed Columbia Neighbors Feel about Nuclear Energy (2015-2017) (%)

Do you feel very well informed, somewhat well informed, not too well informed, or not well informed at all about nuclear energy used to produce electricity?

In 2015 the question was asked differently: "Do you feel very well informed, somewhat well informed, not too well informed, or not well informed at all about the following topics: Nuclear energy"

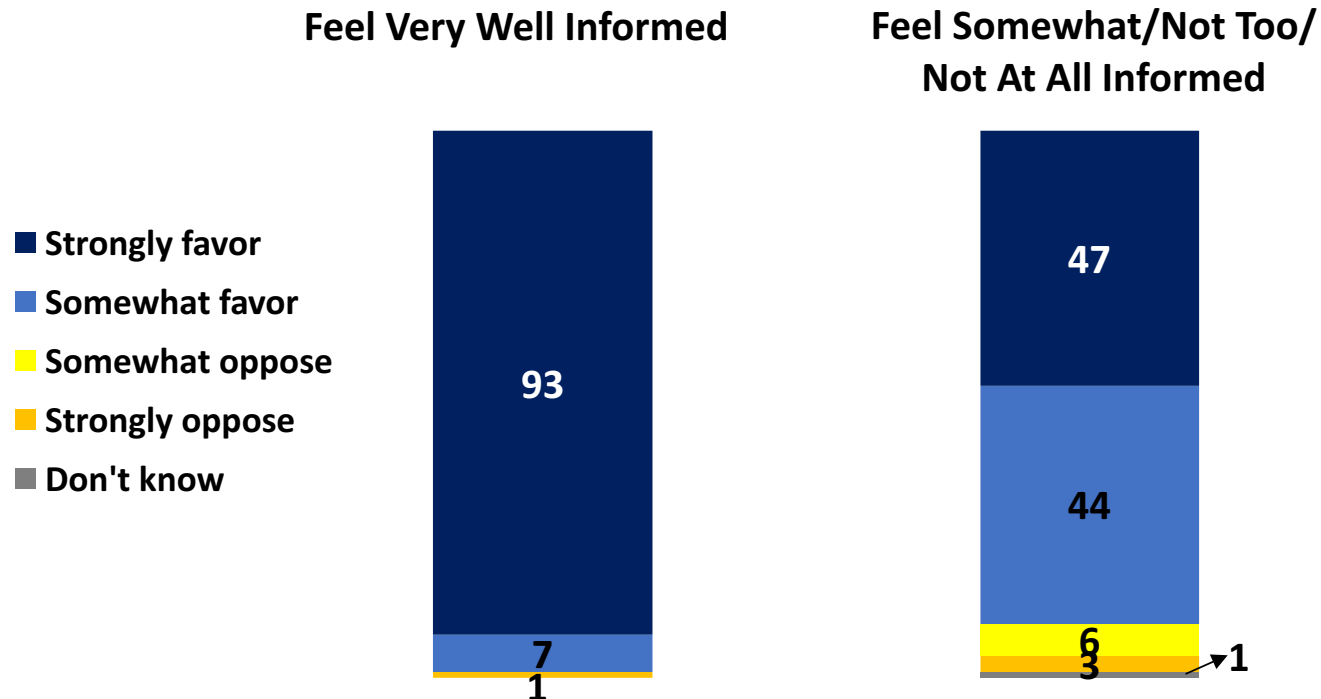


Favorability to Nuclear Energy by How Informed Columbia Neighbors Feel About Nuclear Energy

- The more people feel informed about nuclear energy the more they favor its use. Among Columbia neighbors who feel very well informed (most likely activists), 93 percent strongly favor nuclear energy, and just one percent strongly oppose.

Favorability to Nuclear Energy by How Informed Columbia Neighbors Feel About Nuclear Energy (2017) (%)

Do you feel very well informed, somewhat well informed, not too well informed, or not well informed at all about nuclear energy used to produce electricity? / Overall, do you strongly favor, somewhat favor, somewhat oppose, or strongly oppose the use of nuclear energy as one of the ways to provide electricity in the United States?

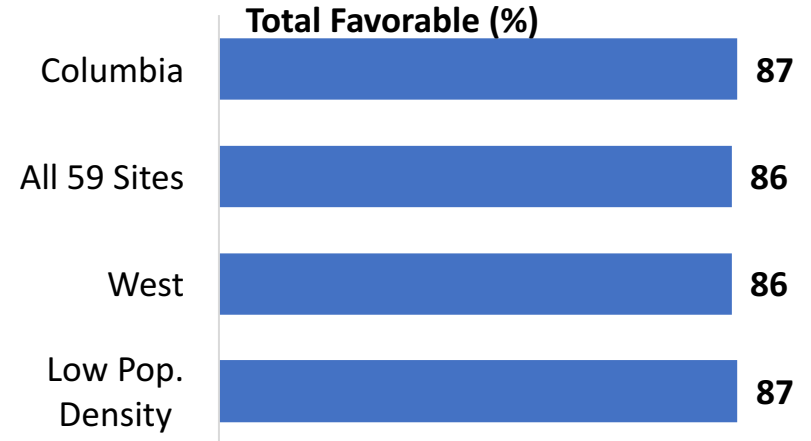


Opinions About Columbia Generating Station

Impression of Columbia Generating Station

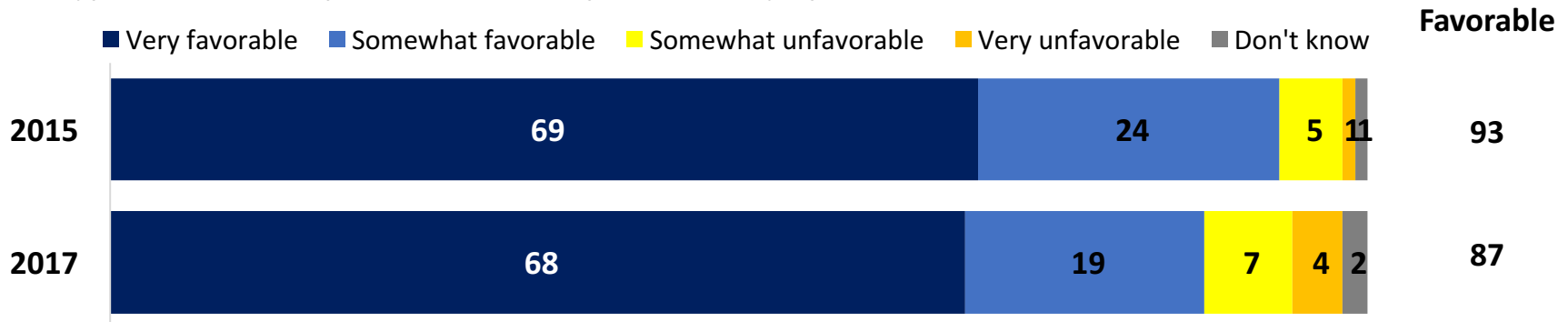
- 87 percent of Columbia neighbors have a favorable impression of the nearby plant and the way it has operated recently; 68 percent have a very favorable impression.
- Strength of support is above national plant neighbor benchmarks. Across all 59 sites, 86 percent reported a favorable impression of the plant, and 56 percent were very favorable.
- While these results are remarkable, even more Columbia neighbors held favorable attitudes toward the plant in 2015.

Columbia Vs. Benchmarks (2017):



Impression of Columbia Generating Station (2015-2017) (%)

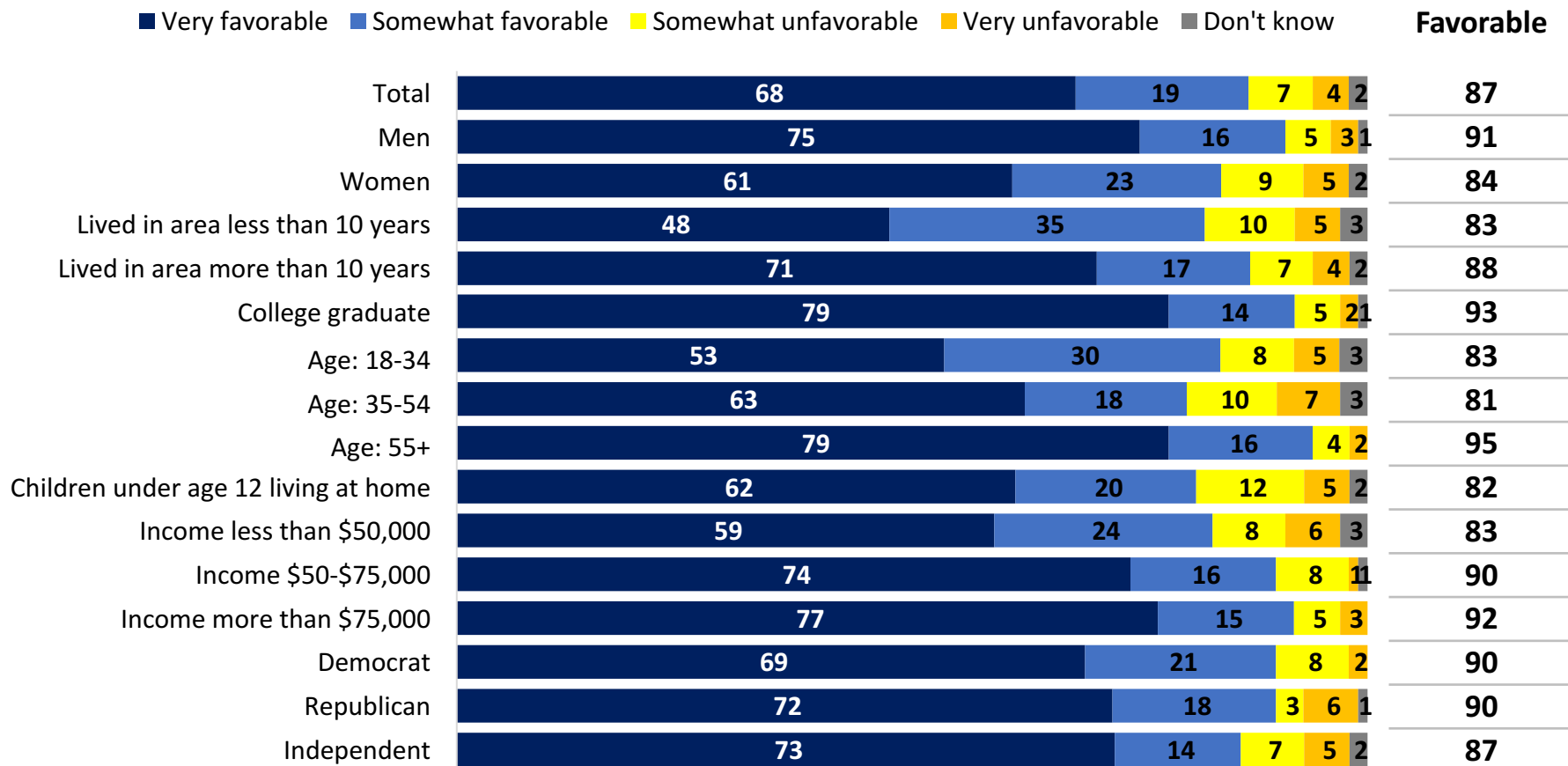
Thinking of the nuclear power plant closest to where you live, would you describe your general impression of this plant and the way it has operated recently as very favorable, somewhat favorable, somewhat unfavorable, or very unfavorable?



Impression of Columbia Generating Station: Demographics

- At least 80 percent of every demographic group within the 10-mile radius of Columbia Generating Station has a favorable impression of the plant and how it has operated recently. Groups with greatest room to strengthen their favorable impression: new arrivals to the area, Millennials, those with incomes under \$50,000, and women.

Impression of Columbia Generating Station (2017) (%)

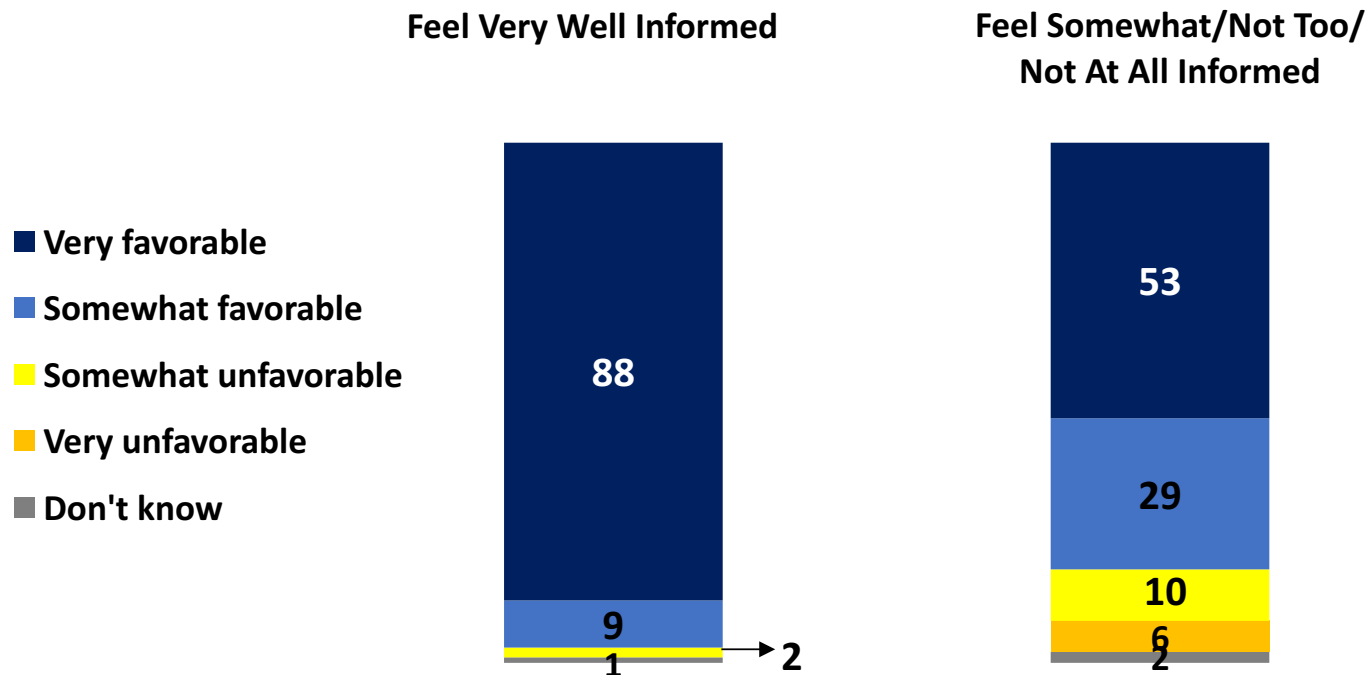


Impression of Columbia Nuclear Station by How Informed Residents Feel About Nuclear Energy

- Among Columbia neighbors who feel very well informed about nuclear energy, 88 percent have a very favorable impression of the plant, and none are very unfavorable.

Impression of Columbia Nuclear Station by How Informed Residents Feel About Nuclear Energy (2017) (%)

Do you feel very well informed, somewhat well informed, not too well informed, or not well informed at all about nuclear energy used to produce electricity? / Thinking of the nuclear power plant closest to where you live, would you describe your general impression of this plant and the way it has operated recently as very favorable, somewhat favorable, somewhat unfavorable, or very unfavorable?



Columbia Neighbors' Perception of Community Opinion about the Plant

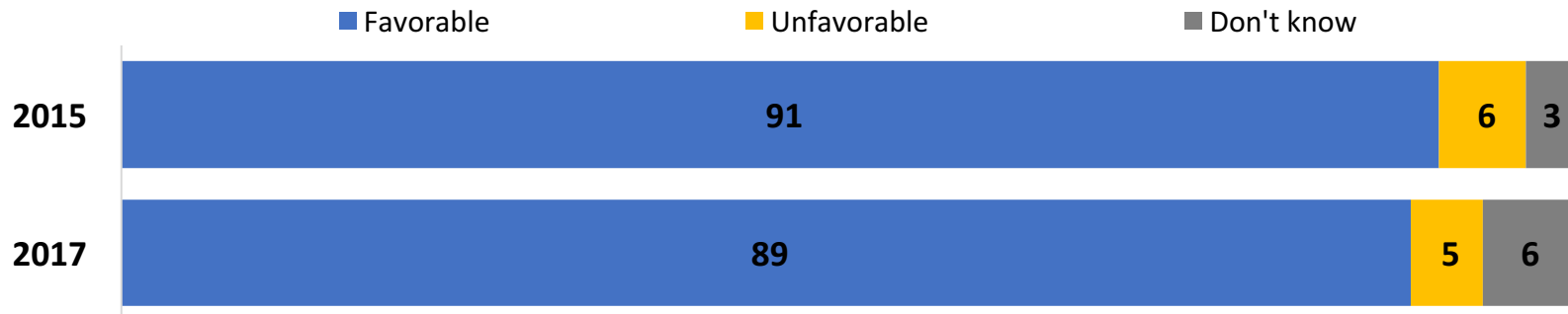
- Residents near Columbia continue to be well aware that the majority of people in the community have a favorable impression of the local plant; 89 percent correctly perceive that community opinion is favorable, while 5 percent perceive it as unfavorable, and the rest are unsure.
- These perceptions are more favorable than national benchmarks.

Columbia Vs. Benchmarks (2017):
Total Favorable (%)



Columbia Neighbors' Perception of Community Opinion about the Plant (2015-2017) (%)

Do you think that the majority of people in your community have a favorable or unfavorable impression of this plant?



New Reactor Acceptability

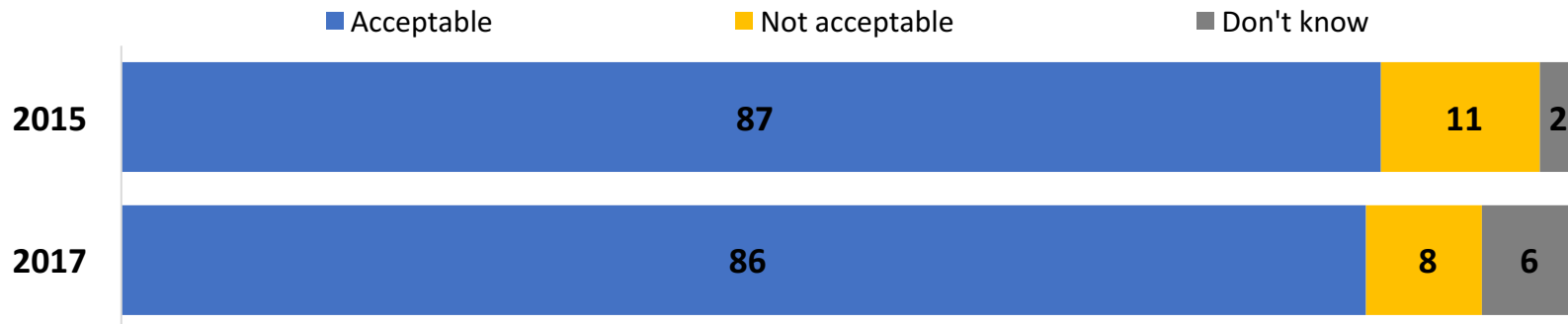
- An extraordinary 86 percent of Columbia neighbors would find it acceptable to add a new reactor at the site of the nearest nuclear power plant.
- This high level of acceptability for a new reactor is above all the benchmarks and is unchanged since 2015.

Columbia Vs. Benchmarks (2017):
Acceptable (%)



New Reactor Acceptability (2015-2017) (%)

If a new power plant were needed to supply electricity, would it be acceptable to you or not acceptable to you to add a new nuclear reactor at the site of the nearest nuclear power plant?

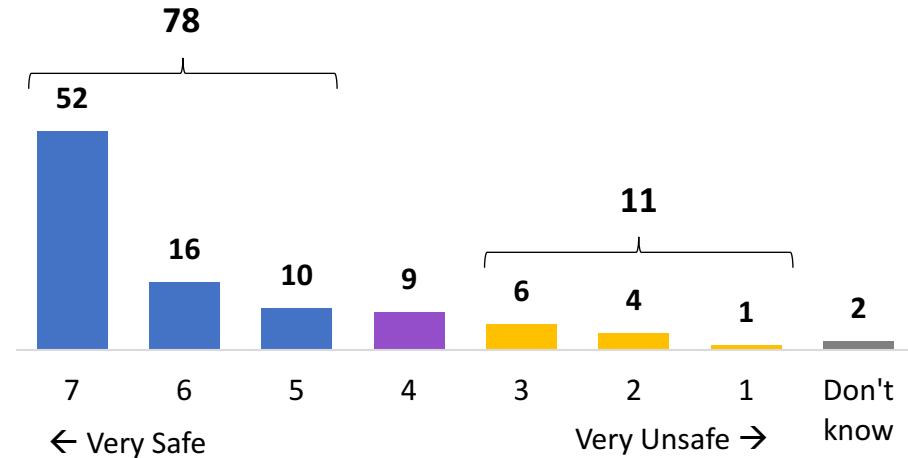


Perceived Safety of Columbia Generating Station

- Excellent safety performance is the foundation for the favorable opinions neighbors report about their plant. A large majority of Columbia neighbors (78 percent) rate their plant's safety at the high end of a 1 to 7 scale.
- While the Columbia neighbors' high safety ratings (5-7) are similar to the national plant neighbor benchmarks, more Columbia neighbors gave a top rating of 7 (52 percent, compared with 39 percent nationally).
- A recent unplanned shutdown (August 2017) may have caused a small drop since the 2015 survey in the number giving a high safety rating.

Safety of Columbia (2017) (%)

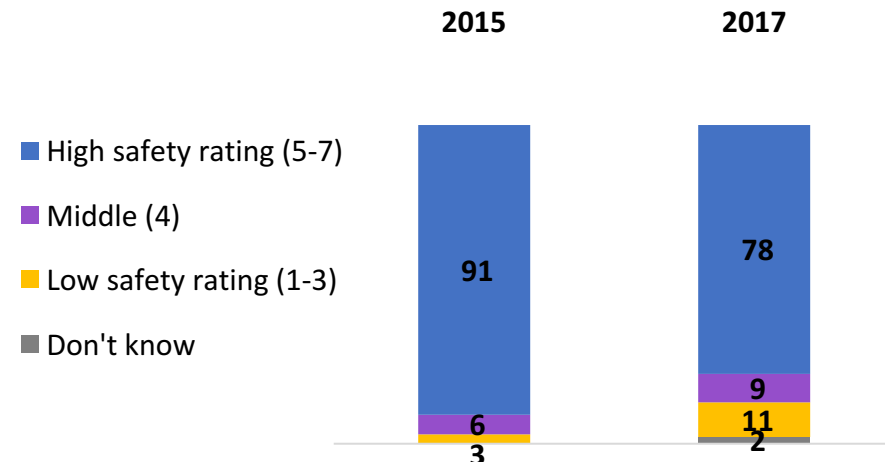
Still thinking about the nuclear power plant that is nearest to where you live, how safe do you regard this plant? Please think of a scale from "1" to "7," where "1" means very unsafe and "7" means very safe. The safer you think it is, the higher the number you would give.



Columbia Vs. Benchmarks (2017): Total Safe (5-7) (%)

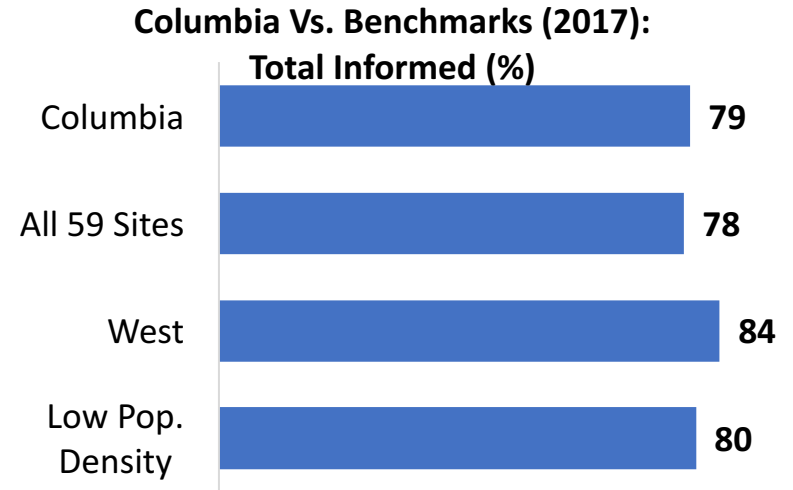


Perceived Safety (2015-2017)



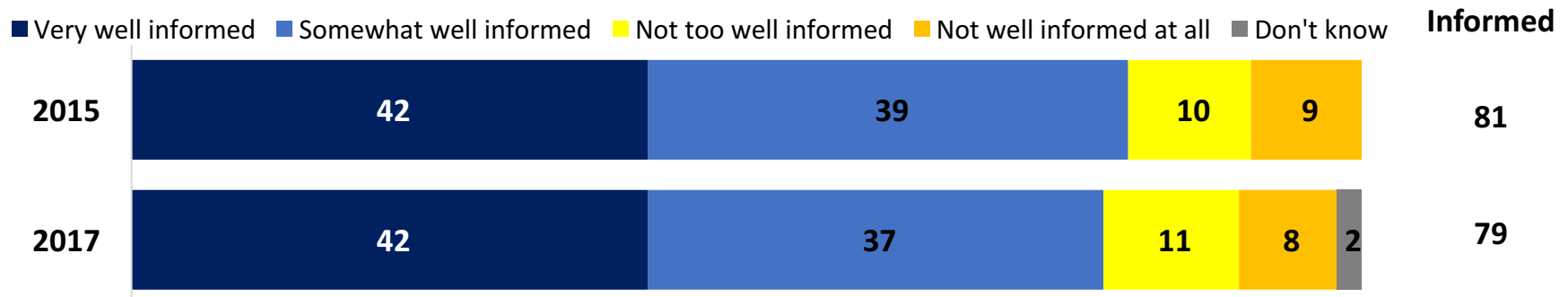
How Informed Columbia Neighbors Feel About First Thing to do In Case of Emergency

- 79 percent of plant neighbors feel at least somewhat well informed about the first thing to do in case of an accident at the nearby plant, and 42 percent feel very well informed. Although utilities aim to increase these numbers, they have stayed about the same over the years.



How Informed Columbia Neighbors Feel About First Thing to do In Case of Emergency (2015-2017) (%)

Do you feel very well informed, somewhat well informed, not too well informed, or not well informed at all about what is the first thing to do in case of an emergency at the nuclear power plant nearest to where you live?

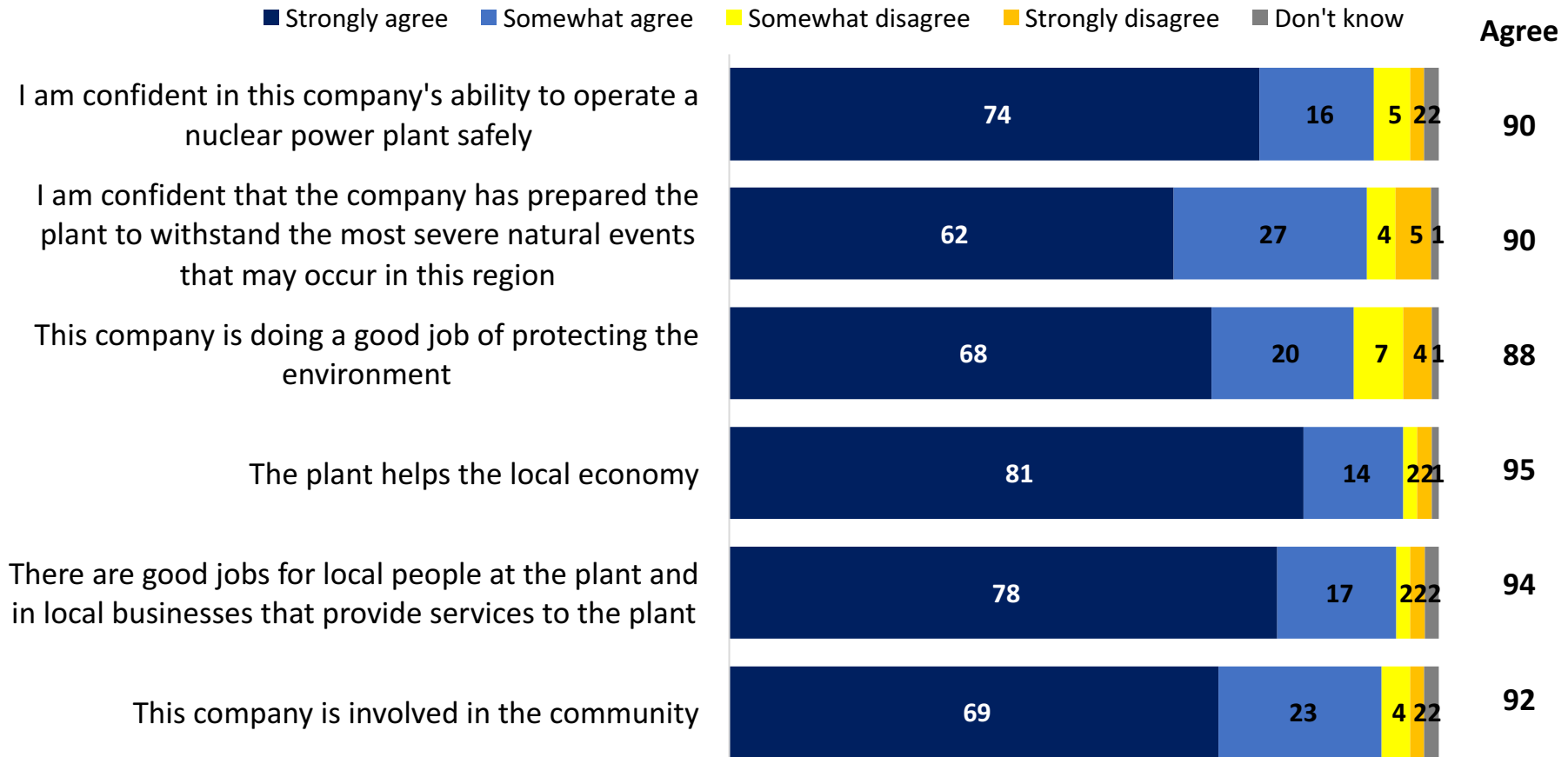


Opinions about the Company that Operates the Nearby Nuclear Power Plant

- Opinions about the company that operates the nearby plant are favorable. Residents near Columbia agree most **strongly** that the plant supports the local economy and jobs. Large majorities believe strongly in the company's performance regarding safety, environmental protection, and community involvement.

Opinions about the Company that Operates the Nearby Nuclear Power Plant (2017) (%)n

Now, I'd like to ask you about the company that operates the nuclear power plant nearest to you. Please tell me if you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with the following statements about this company.



Positive Opinions about Company that Operates the Nearby Nuclear Plant

- Columbia neighbors' opinions of the company that operates the nearby plant exceed benchmarks.

Percent Agree with Statements about Company that Operates the Nearby Nuclear Plant (2017)

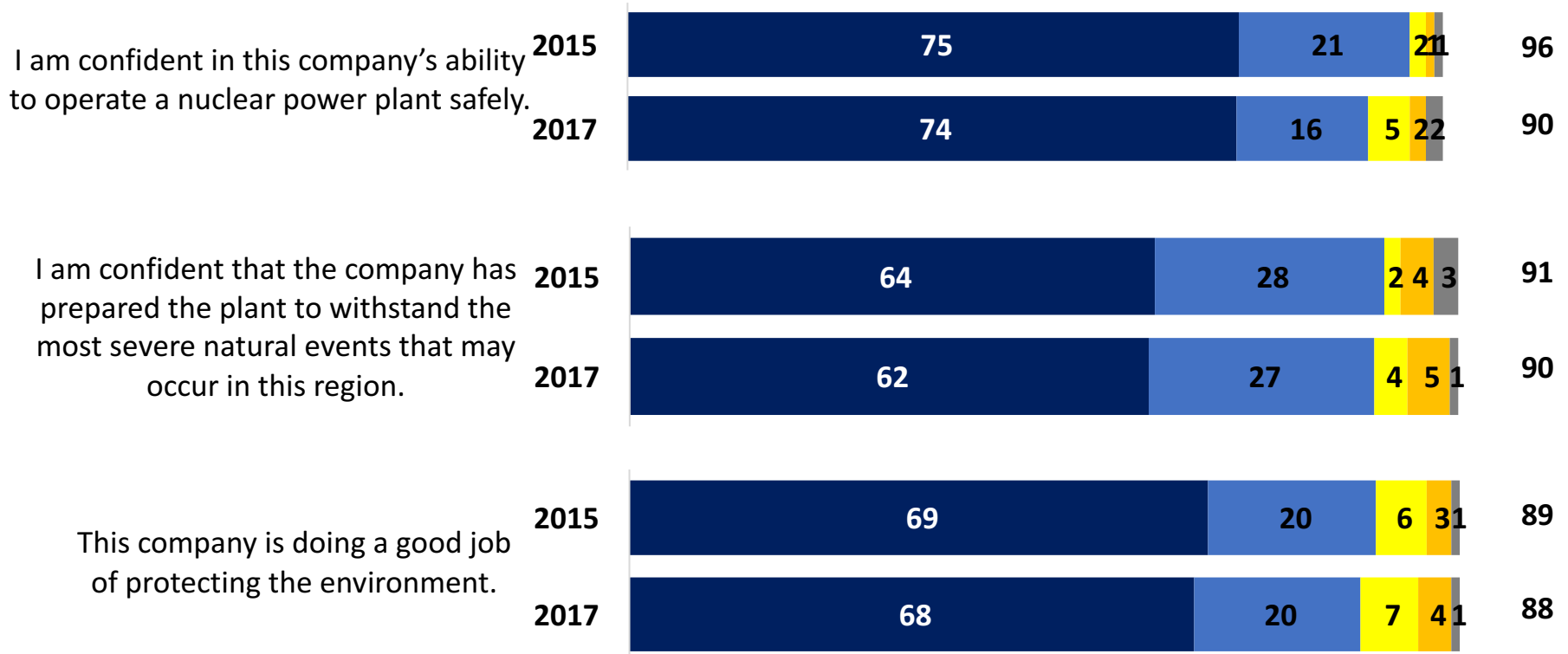
	Columbia	All 59 Sites	West	Low Pop. Density
I am confident in this company's ability to operate a nuclear power plant safely.	90	88	89	90
I am confident that the company has prepared the plant to withstand the most severe natural events that may occur in this region.	90	79	82	82
This company is doing a good job of protecting the environment.	88	81	82	84
The plant helps the local economy.	95	90	92	92
There are good jobs for local people at the plant and in local businesses that provide services to the plant.	94	87	92	89
This company is involved in the community.	92	78	83	82

Opinions about Columbia and Energy Northwest: Safety and Environment

- These very favorable opinions of the company regarding safety and environmental protection were observed also in 2015.

Opinions about Columbia and Energy Northwest: Safety and Environment (2015-2017)

■ Strongly agree
 ■ Somewhat agree
 ■ Somewhat disagree
 ■ Strongly disagree
 ■ Don't know
 Agree

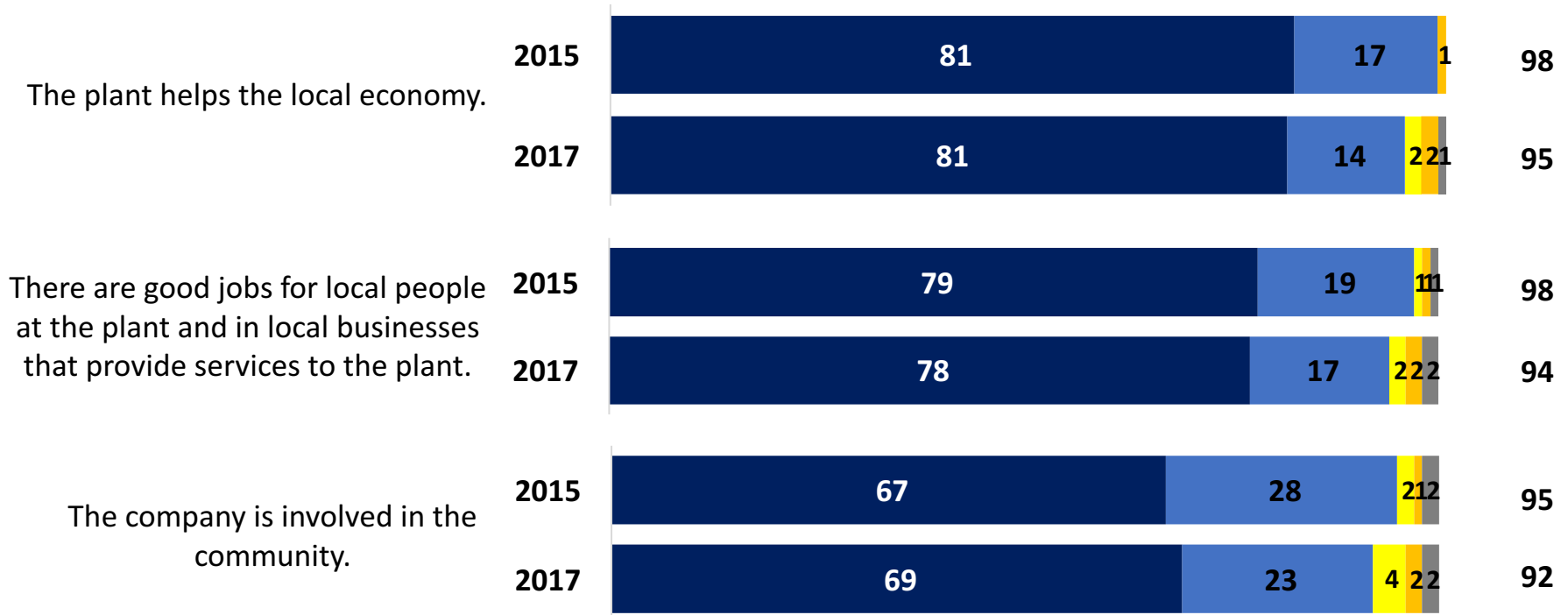


Opinions about Columbia and Energy Northwest: Community Support

- These very favorable opinions of the company and plant regarding contributions to the local economy and community involvement also were observed in 2015.

Opinions about Columbia and Energy Northwest: Community Support (2015-2017)

■ Strongly agree
 ■ Somewhat agree
 ■ Somewhat disagree
 ■ Strongly disagree
 ■ Don't know
 Agree

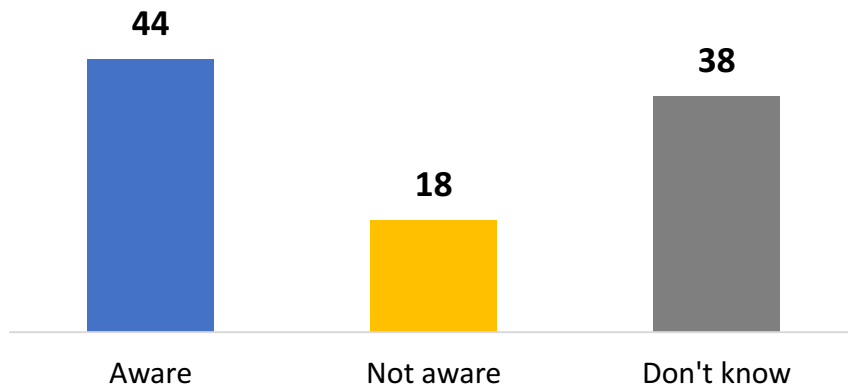


Awareness of Company or Plant Participation in Community Activities

- Most, if not all, nuclear power plant operators are actively engaged in activities that support the local community—such as support for organizations and events, schools, and volunteering. In 2017, 44 percent of Columbia neighbors said they were aware of such activities by their local nuclear power plant or the company that runs the plant—similar to the national benchmark.

Awareness of Columbia Participation in Community Activities (2017) (%)

Companies may provide community services such as by financially supporting community organizations and events, supporting area schools, and volunteering. To the best of your knowledge, does your nearest nuclear power plant or the company that runs the plant provide community services like that?



Awareness of Company Participation in Community Activities (2017) (%)



Examples of Community Support

In what specific ways does this plant or company support your community? Can you give me any examples?

- Provides jobs
- Charity
- Community picnics, safety expos, trash clean up
- College tuition programs
- Donates to the community
- Donations to schools
- Helping families in need
- Involved in community events as a sponsor
- Scholarships, internships, donations