

New Brunswick Perspectives on Climate Change and Renewable Energy

Conservation Council of New Brunswick

Dr. Louise Comeau

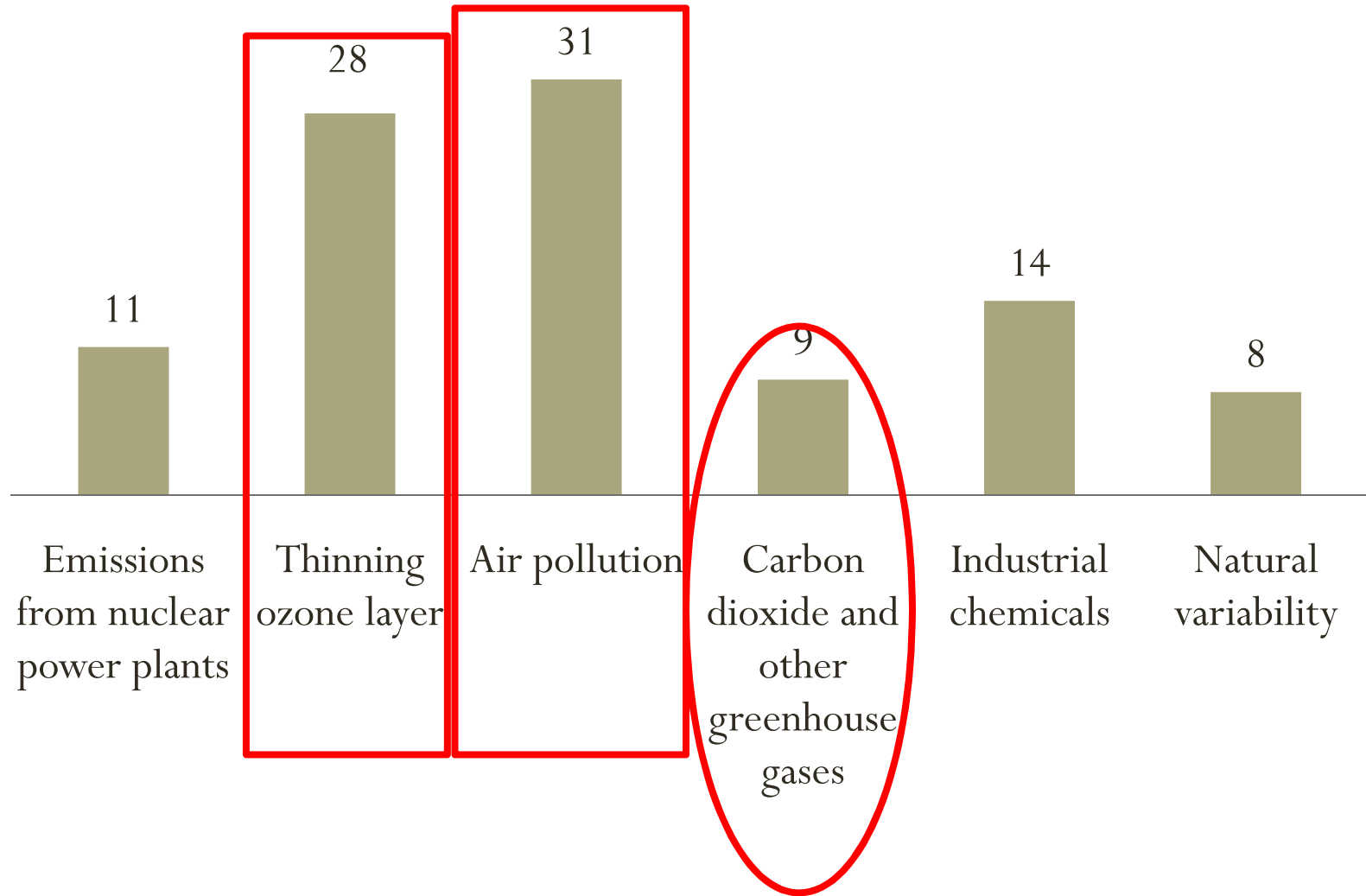
Presentation Overview

- Overview of New Brunswick baseline on energy and climate change literacy, values and beliefs
- Implications for Education
- Implications for Communication

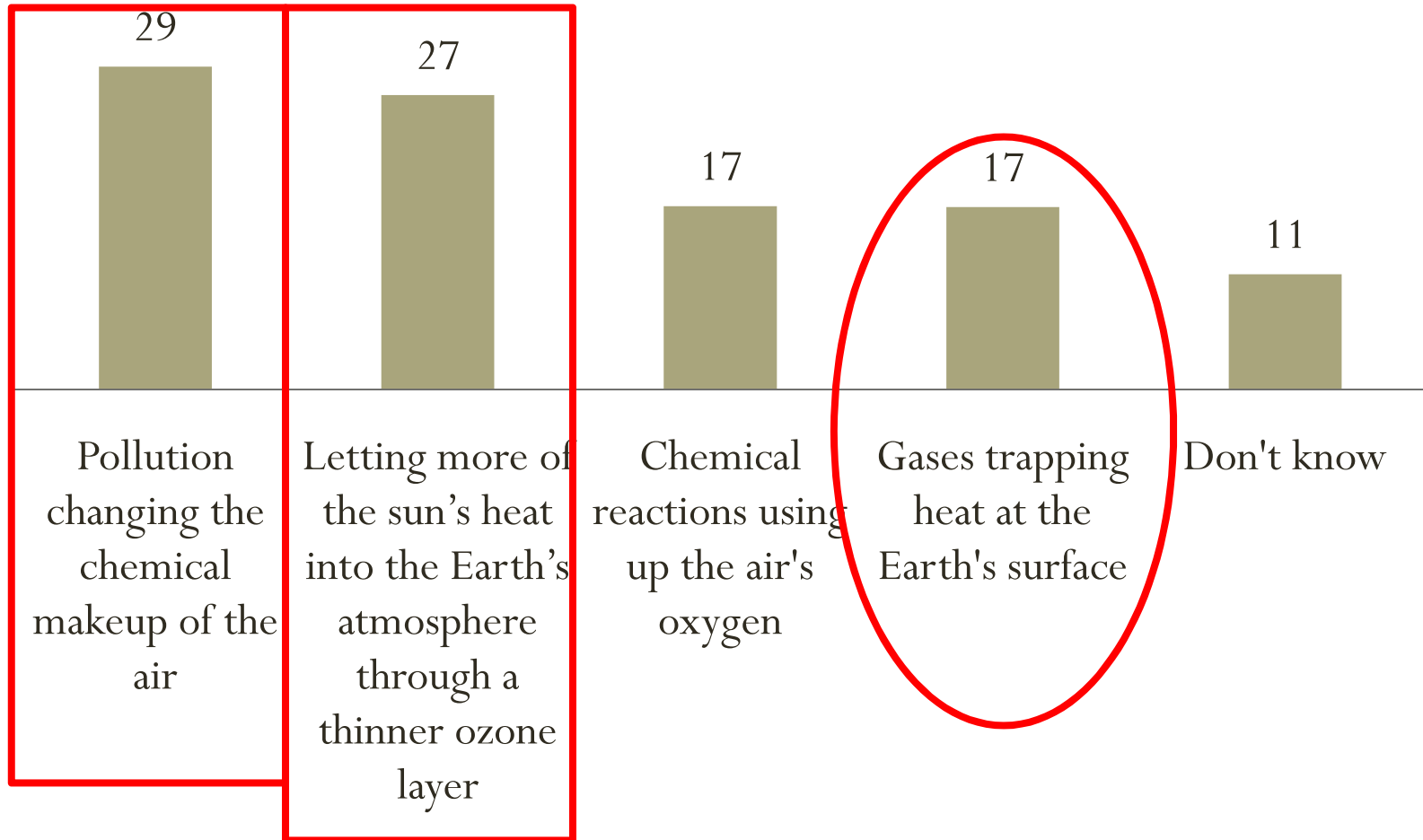
New Brunswick Survey on Energy Perspectives

- 1,000 person random sample telephone survey
- Average completion time 20 minutes
- In field through OraclePoll July 2016
- Sample matches Statistic Canada proportions for gender, age, education, income, language, political orientation
- Tracked postal codes

New Brunswick 2016: Climate change is caused by...?



New Brunswick 2016: The main process behind climate change is...?

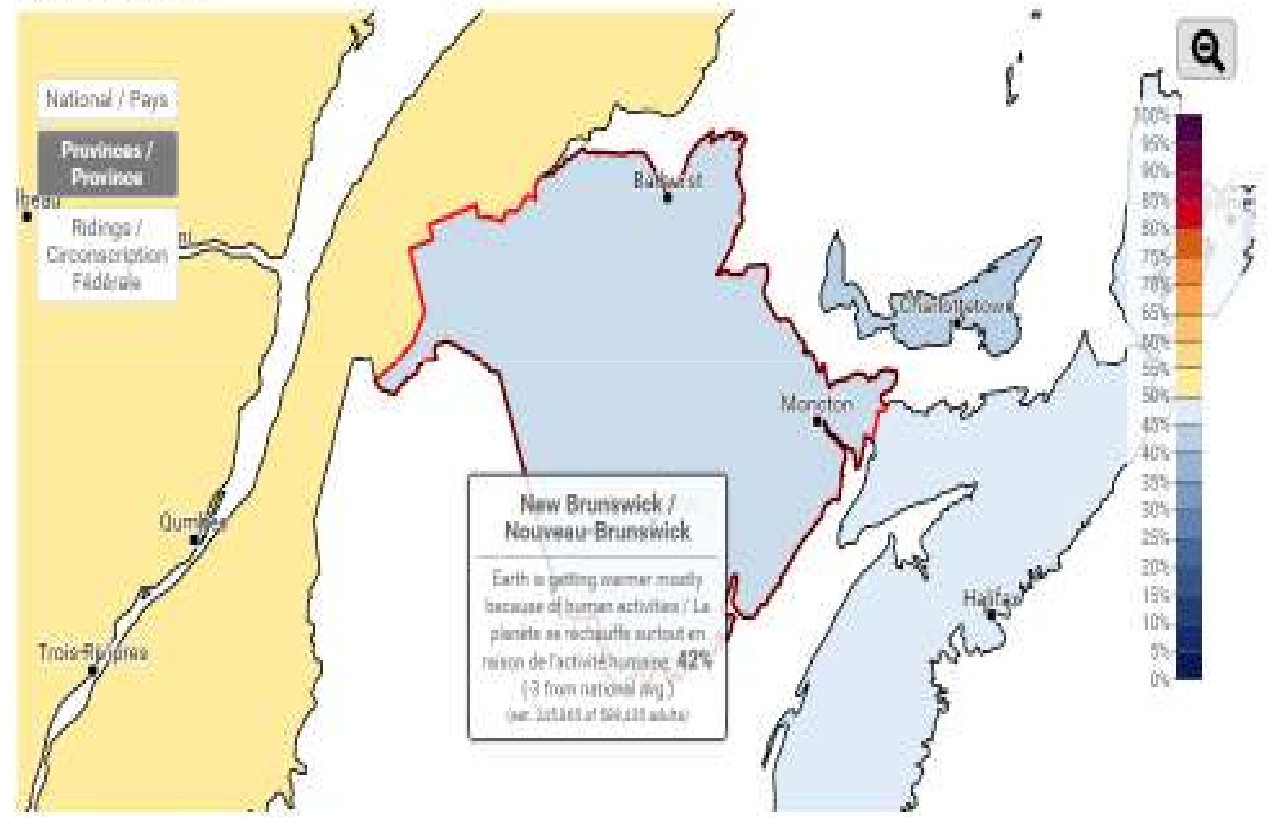


Display model output / Afficher les résultats de la modélisation:

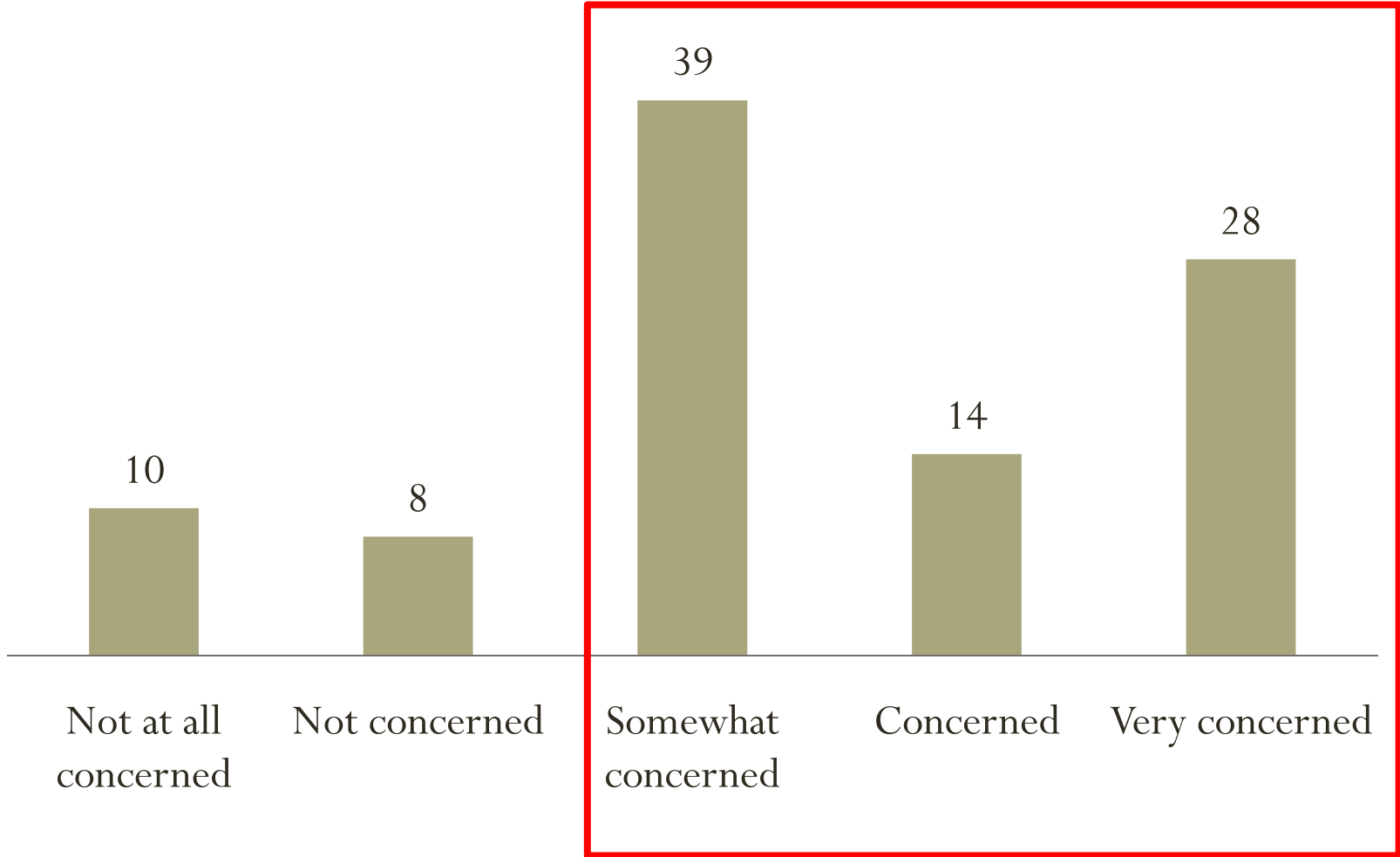
Earth is getting warmer mostly because of human activities / La planète se réchauffe surtout en raison de l'activité humaine Format link

Click on map to select geography, or / Cliquez sur la carte pour choisir une juridiction, ou: New Brunswick / Nouveau-Brunswick

Un-Select / Décocher

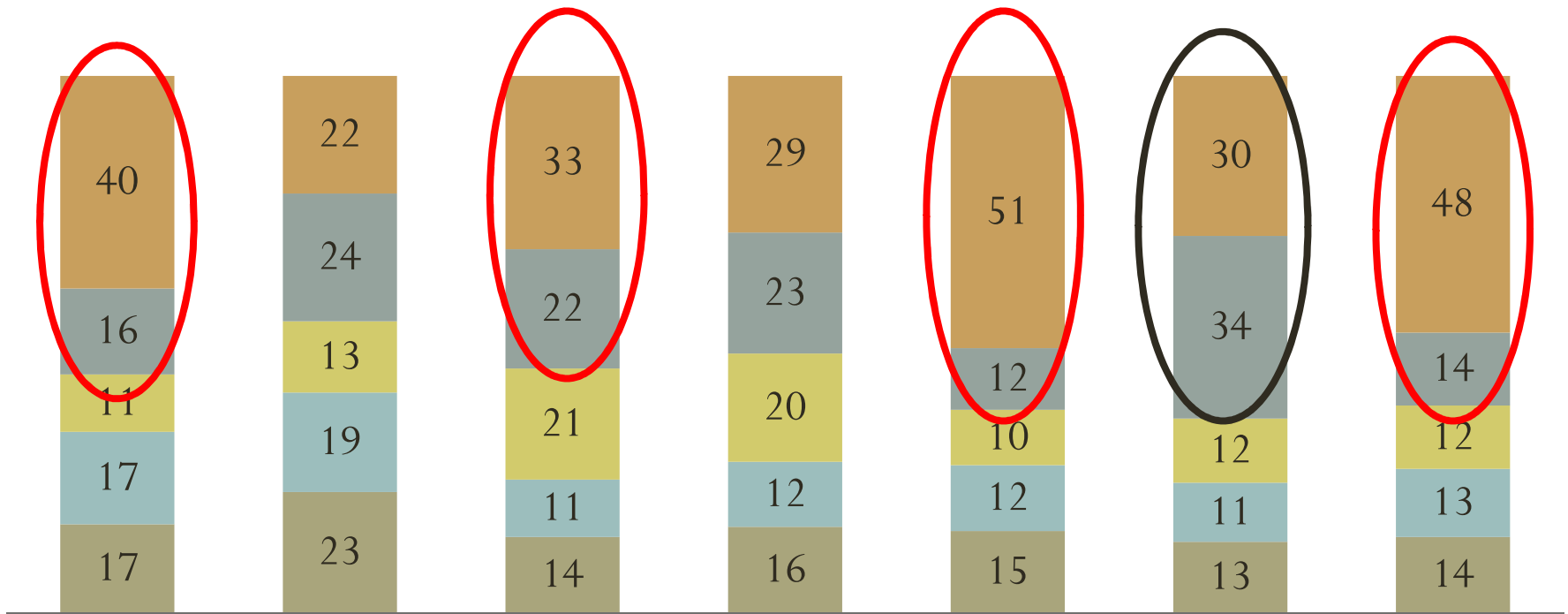


New Brunswick 2016: How concerned are you about climate change?



New Brunswick 2016: From what you know about the effects of climate change, would you say...

■ Not at all concerned
 ■ Not concerned
 ■ Neither concerned nor unconcerned
 ■ Concerned
 ■ Very concerned



Effects on farmland | Rising sea levels | Changes to fish and wildlife | Changes to forests | Changes to water quality | Power outages | Loss of forests

Connecting the Research Dots

- Making the link between human-caused climate change and the potential for lowering climate change risk are important to increasing support for climate change policies. *
- Climate Change science is unequivocal: to say climate change is human-caused is to speak to the facts.

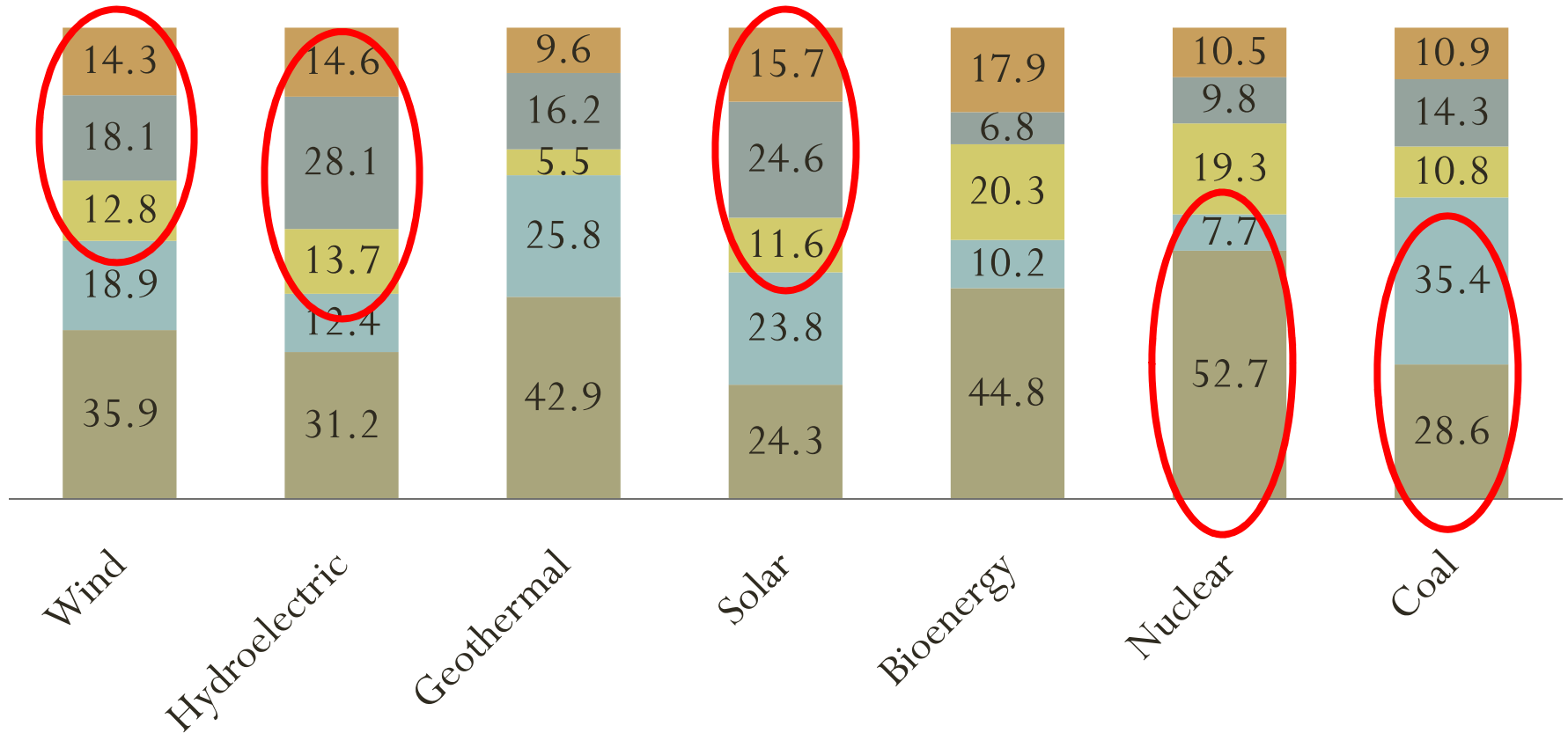
*Hornsey, M. J., Harris, E. A., Bain, P. G., & Fielding, K. S. (2016). Meta-analyses of the determinants and outcomes of belief in climate change. *Nature Climate Change*, 2493, 5. Retrieved from <http://www.nature.com/articles/nclimate2943.epdf?>

Climate Change is Human Caused

“Anthropogenic greenhouse gas emissions have increased since the pre-industrial era, driven **largely by economic and population growth**, and are now higher than ever. This has led to atmospheric concentrations of carbon dioxide, methane and nitrous oxide that are unprecedented in at least the last 800,000 years. Their effects, together with those of other **anthropogenic drivers**, have been detected throughout the climate system and are *extremely likely (95 to 100%) to have been the dominant cause of the observed warming since the mid-20th century*” (**Intergovernmental Panel on Climate Change, Core Writing Team, Pachaur, & Meyer, 2014, p. 3**).

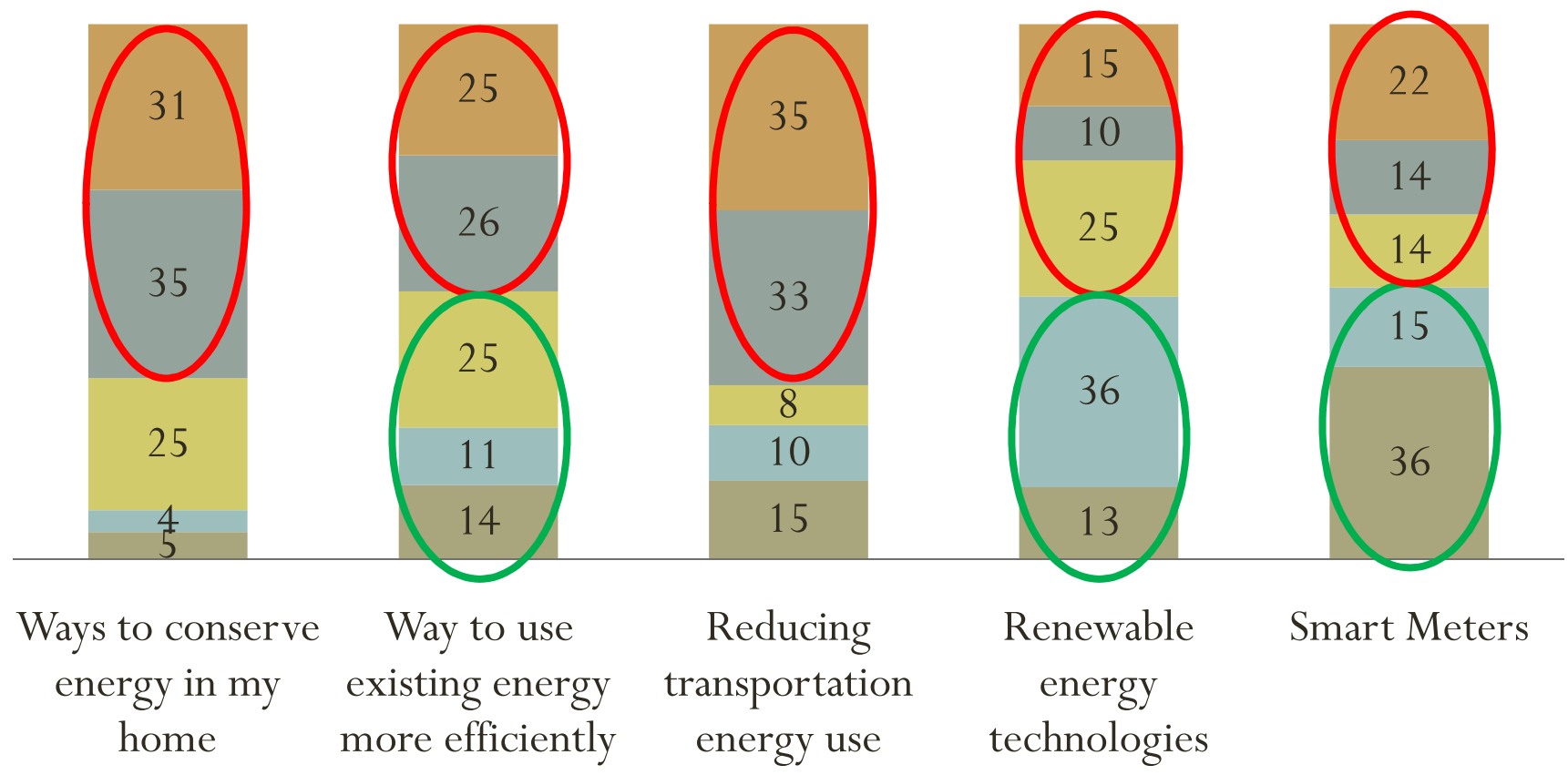
How much do you believe you know about energy sources in Canada?

■ Nothing ■ Not much ■ A medium amount ■ Quite a bit ■ A lot

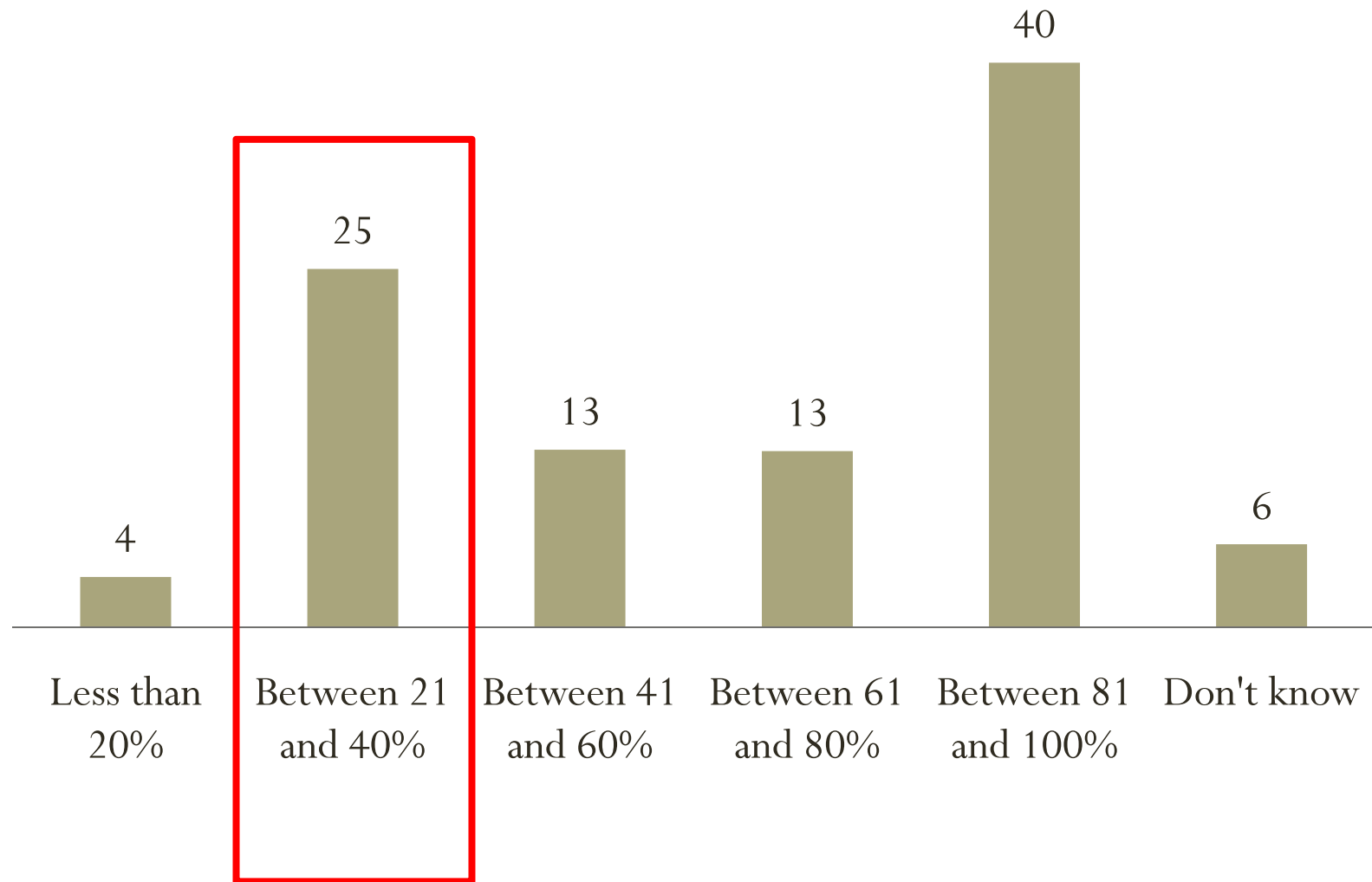


How much do you know about home and transportation energy use options? (%)

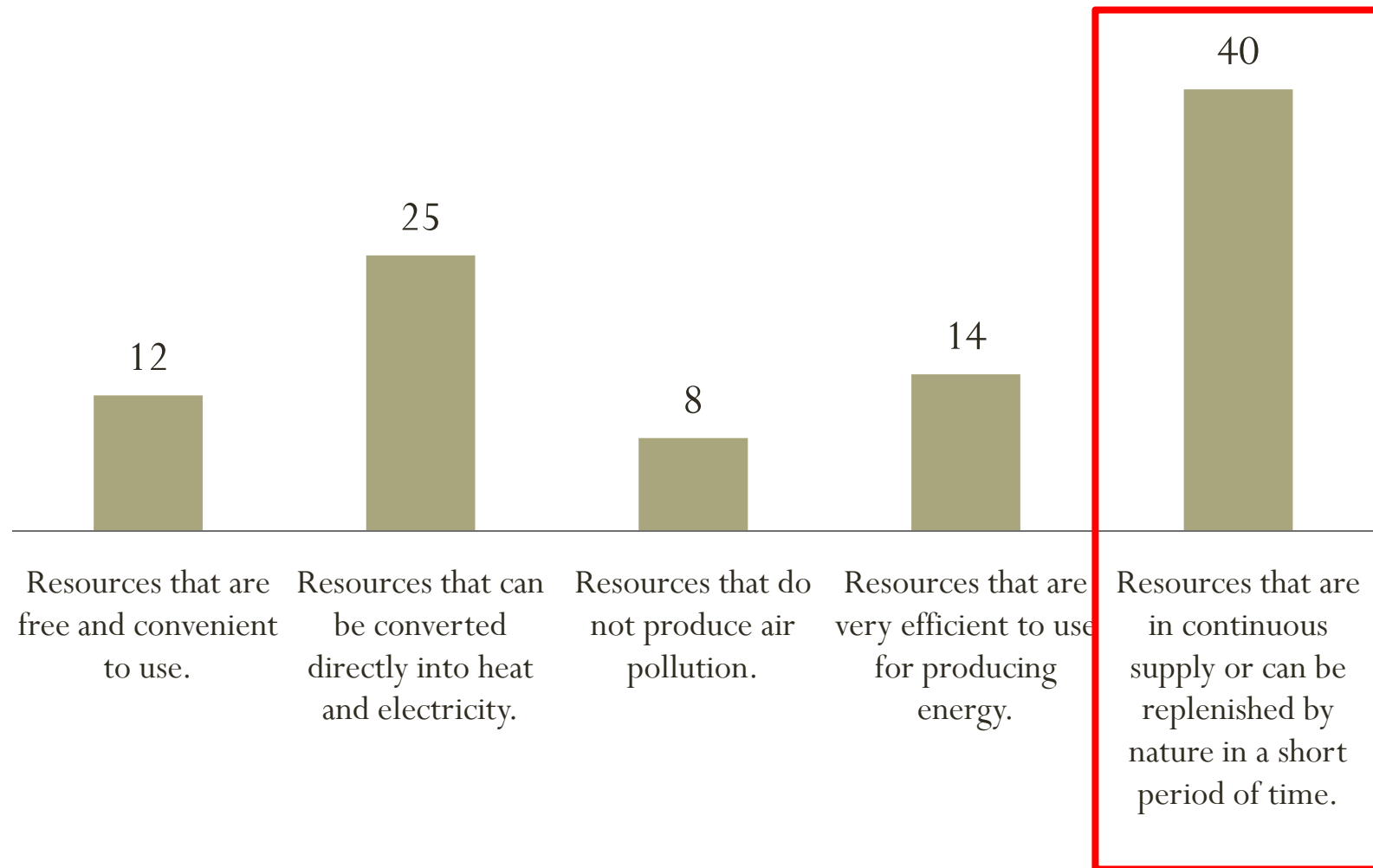
Nothing
 Not much
 A medium amount
 Quite a bit
 A lot



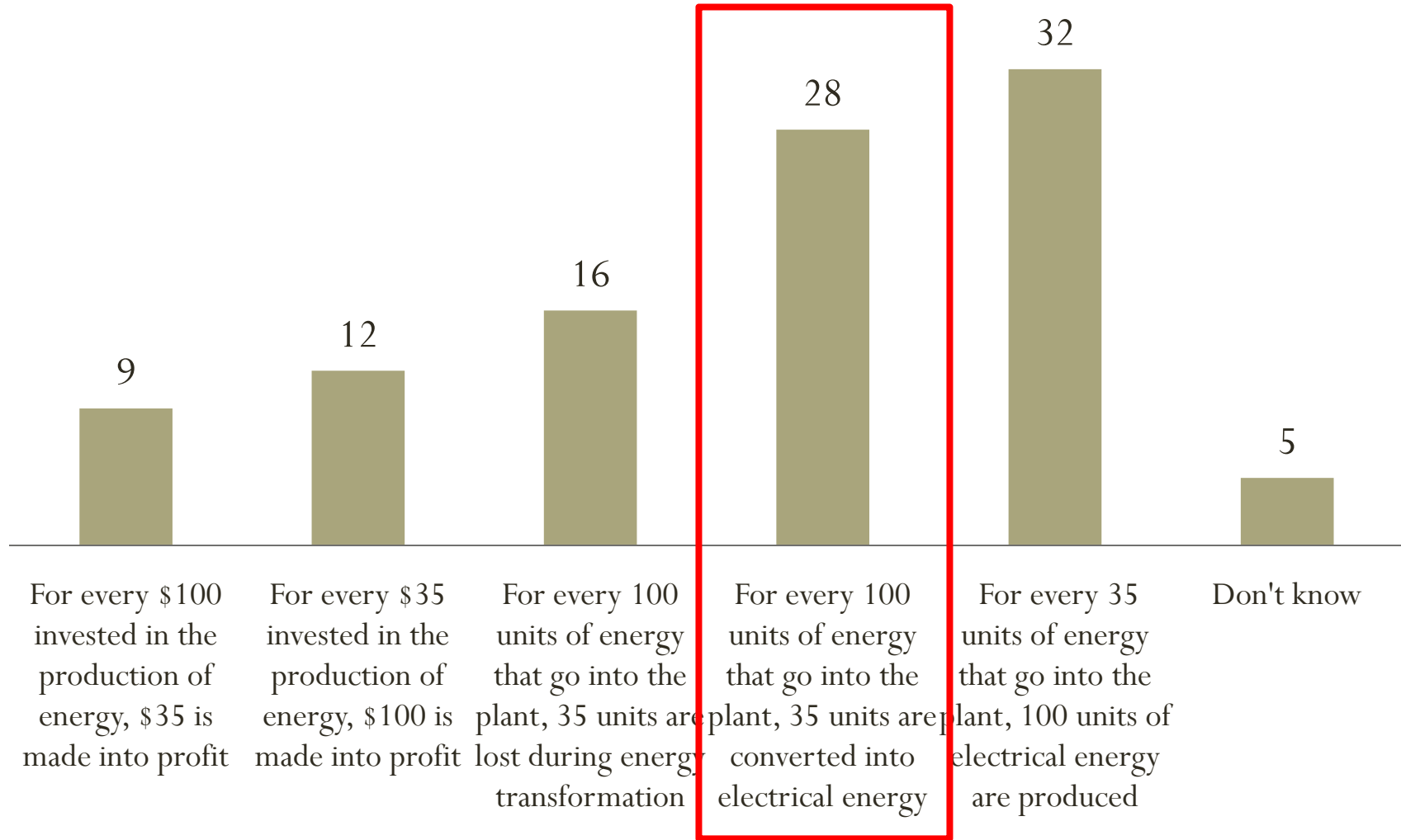
What percentage of total electricity supply comes from hydroelectricity? (%)



Which statement best defines “renewable energy resources” to you (%)

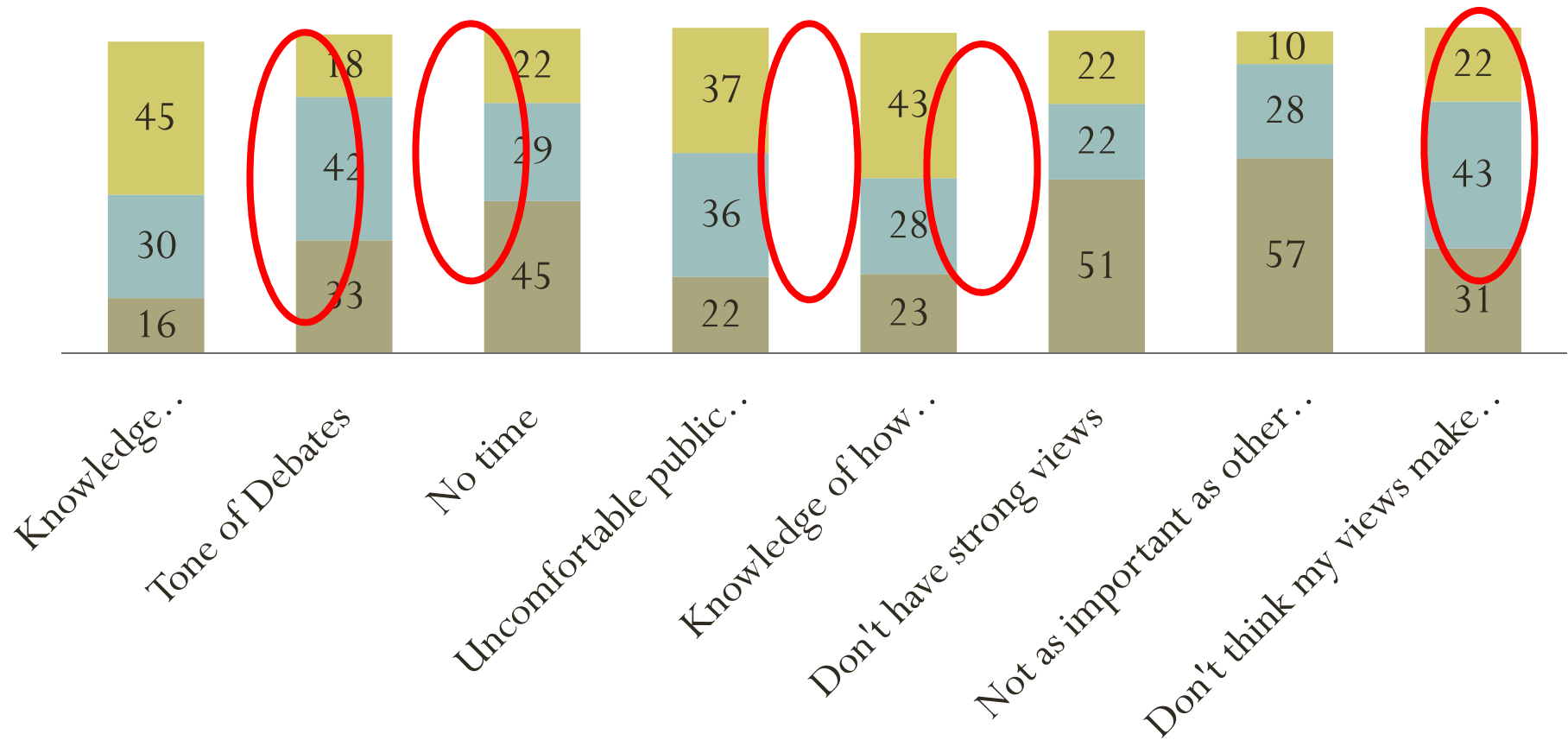


What does it mean to you if an electric power plant is 35% efficient? (%)



Barriers to you participating in energy discussions? (%)

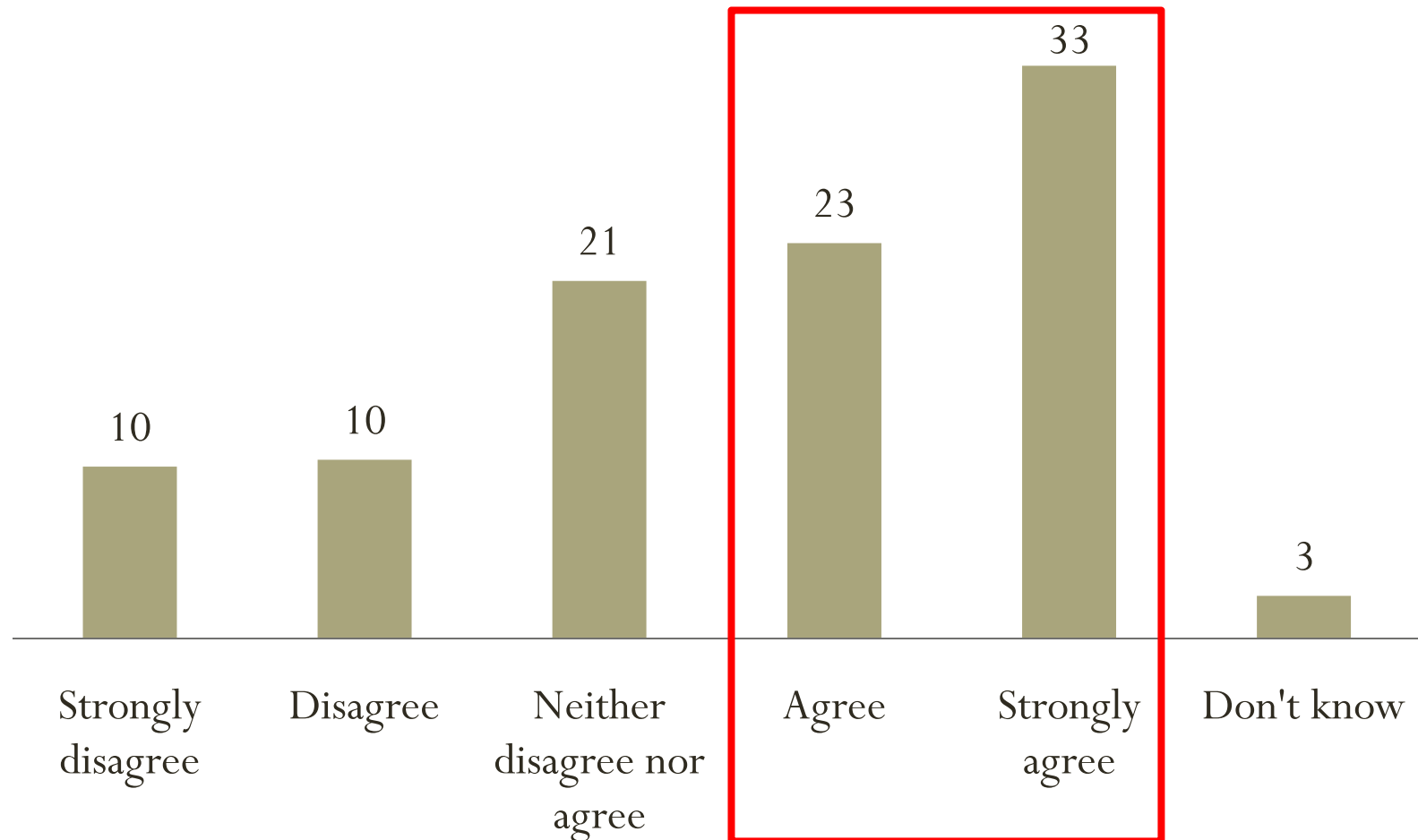
Not a barrier
 Somewhat a barrier
 Very much a barrier



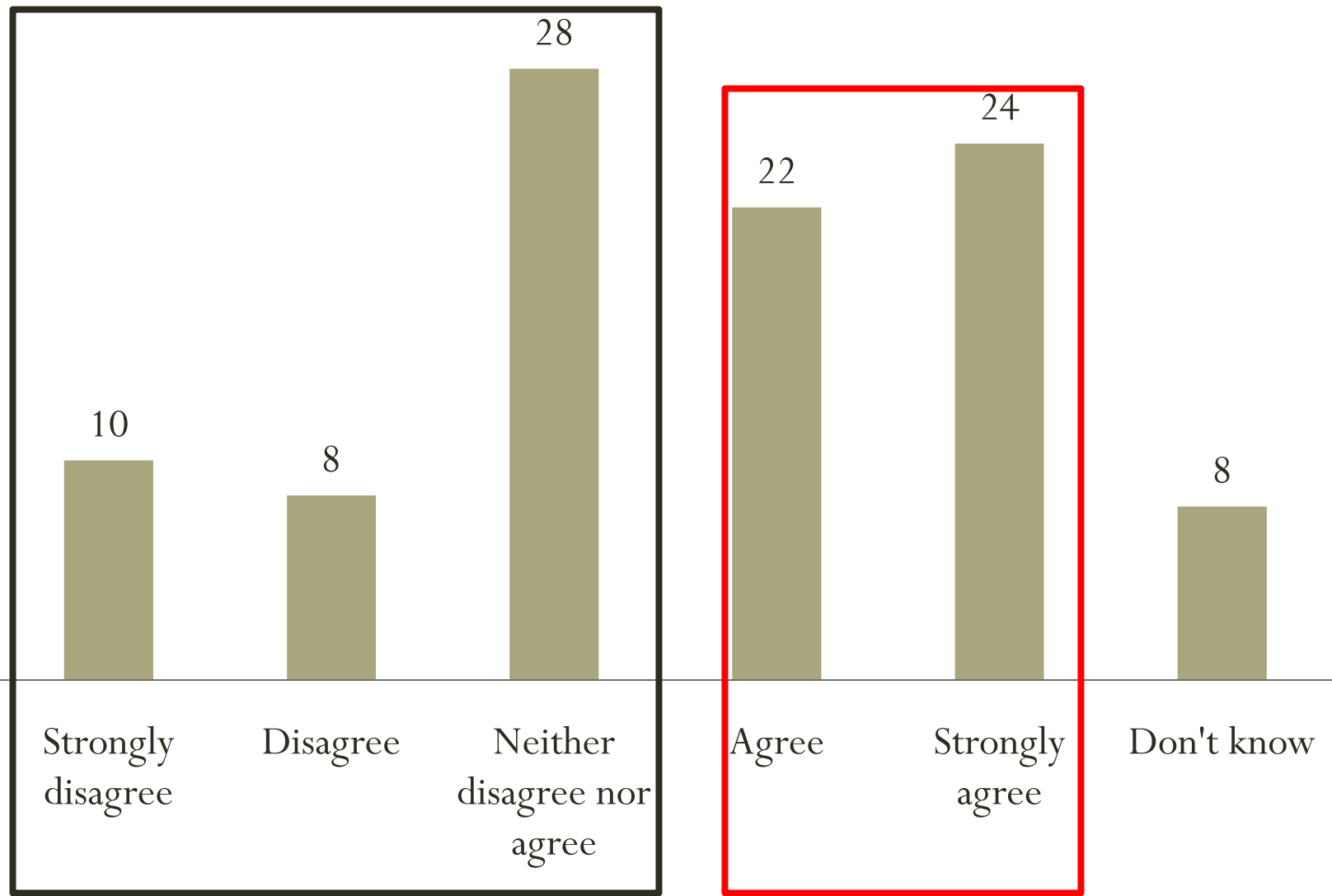
Values and Beliefs

- New Brunswickers see energy more as a consumer, economic issue
- But there are also “emerging” moral dimensions
- We need to talk about energy issues and climate change to develop capacity for reflection and moral reasoning
- Weak link to “human-caused” means weak link to human choices, agency and citizenship

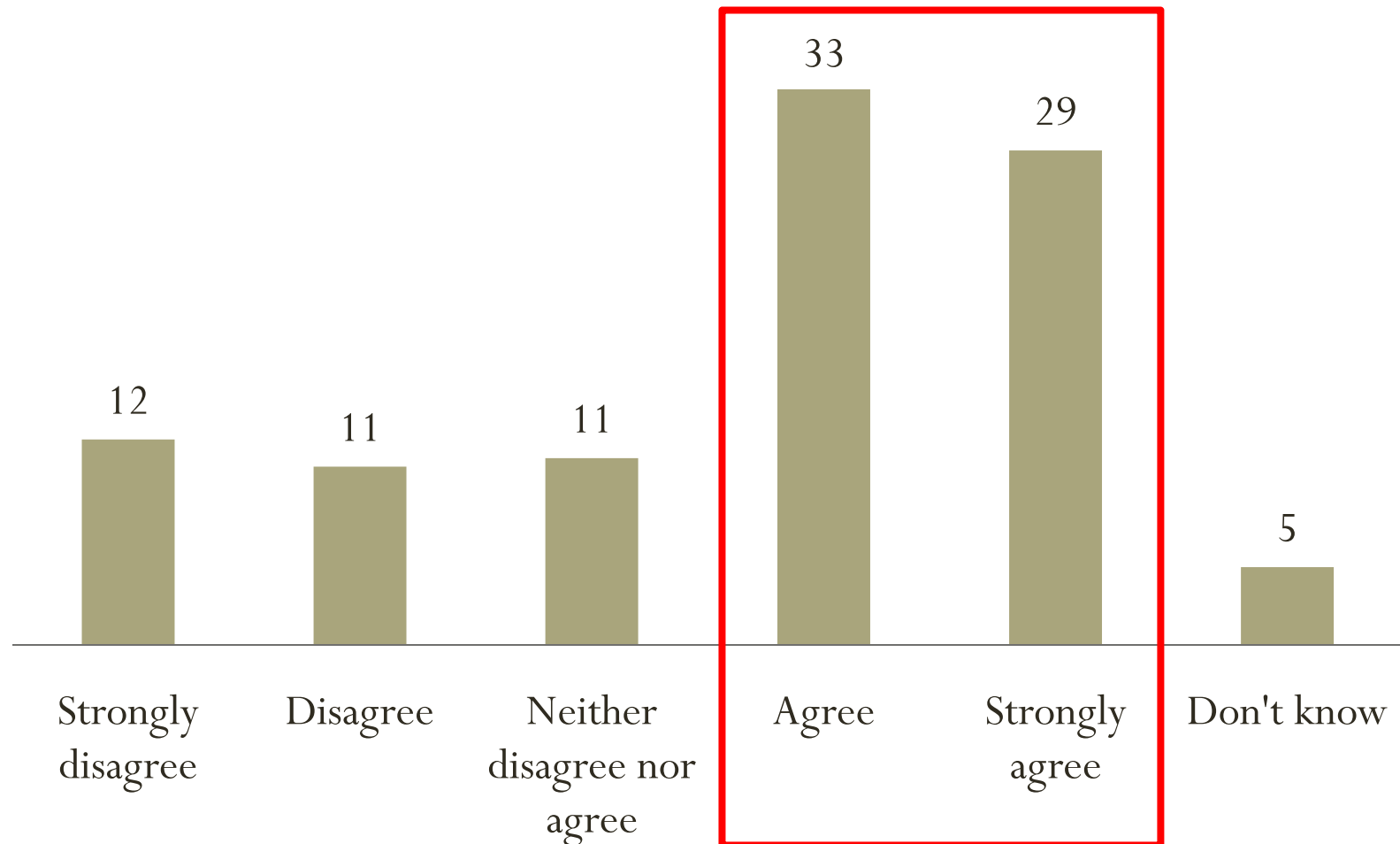
We need to find ways to develop untapped renewable energy resources (%)



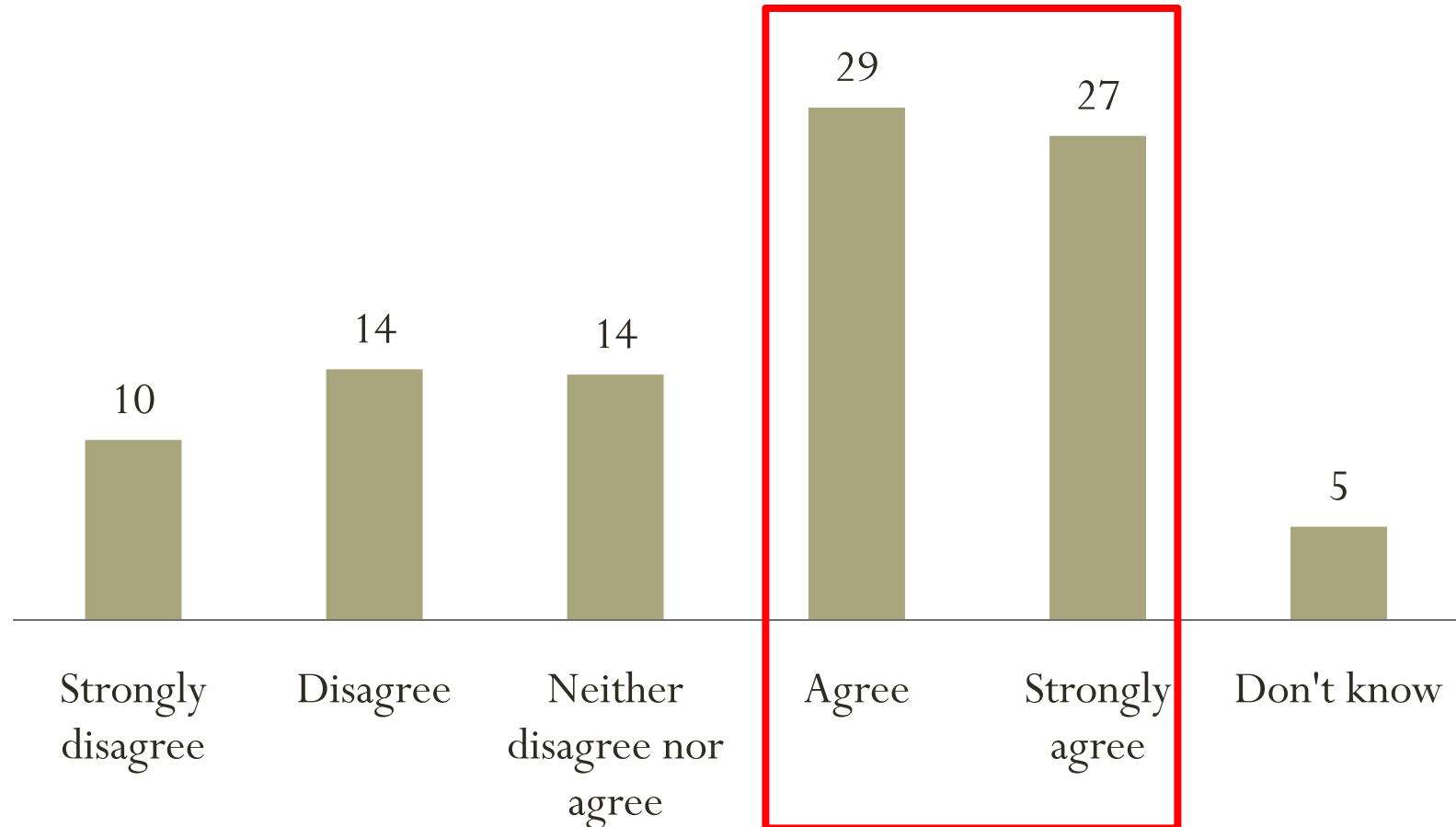
Market forces, not incentives or taxes, drive development and conservation of energy (%)



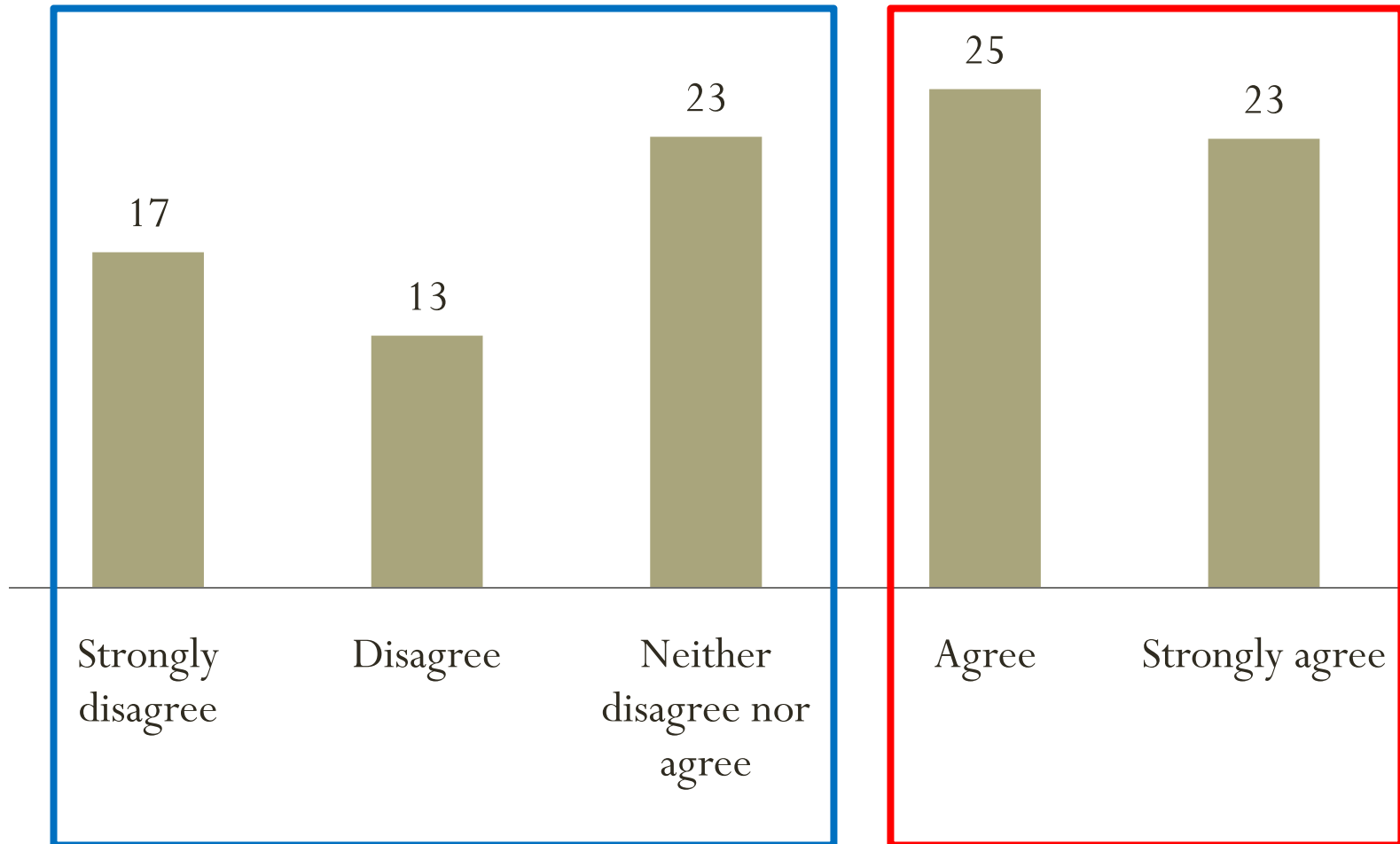
Growth in energy production is key to Canada's economic progress (%)



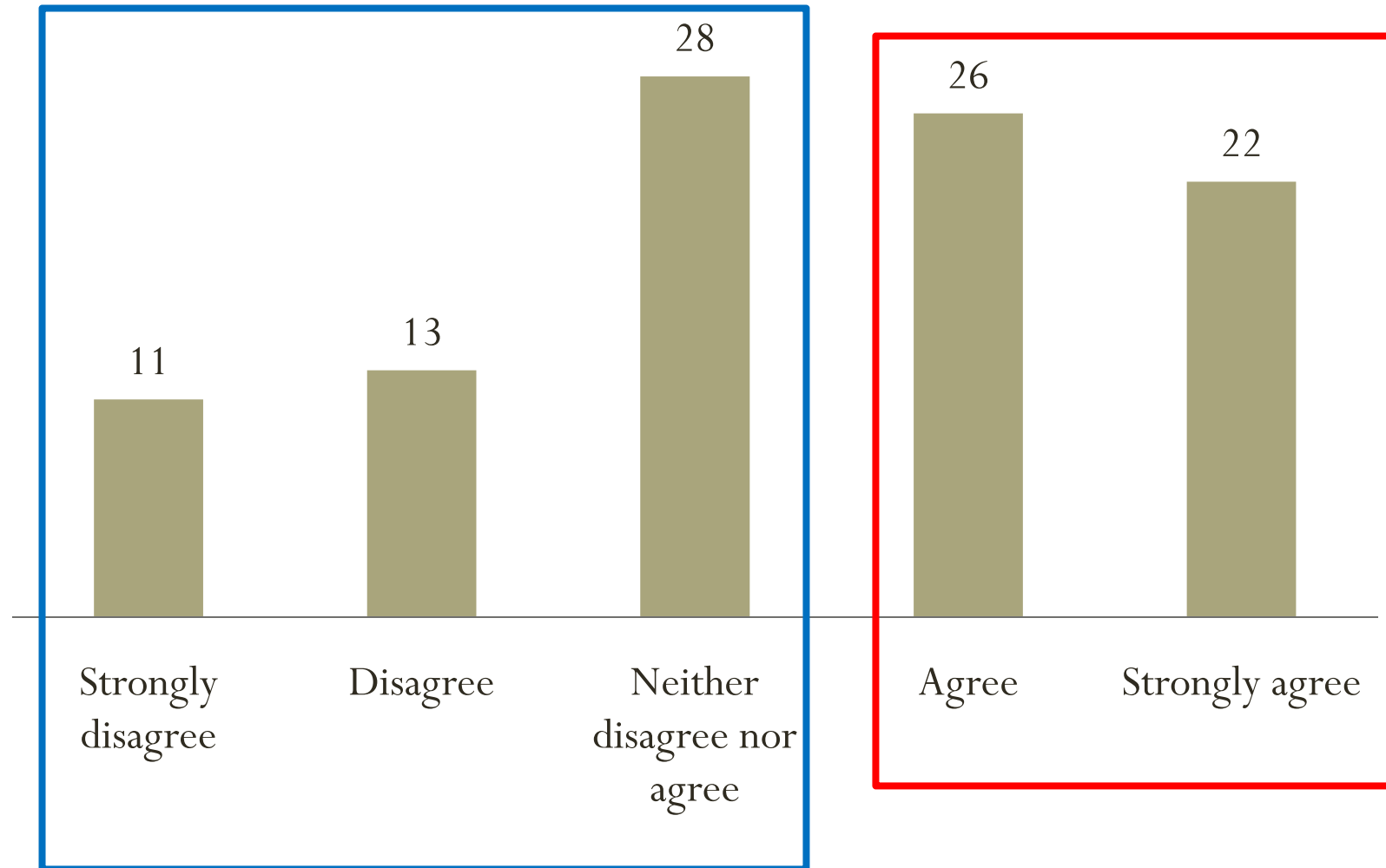
Current trends in energy consumption are clearly unsustainable and must be reduced immediately (%)



It is my moral obligation to conserve energy (%)



Canadians have a duty to be global leaders by reducing our energy consumption (%)



Climate Change Education Objectives

- **A climate-literate person:**
 - understands the essential principles of Earth's climate system
 - knows how to assess scientifically credible information about climate
 - communicates about climate and climate change in a meaningful way, and
 - is able to make informed and responsible decisions with regard to actions that may affect climate

Thinking like a Mountain: System Concepts

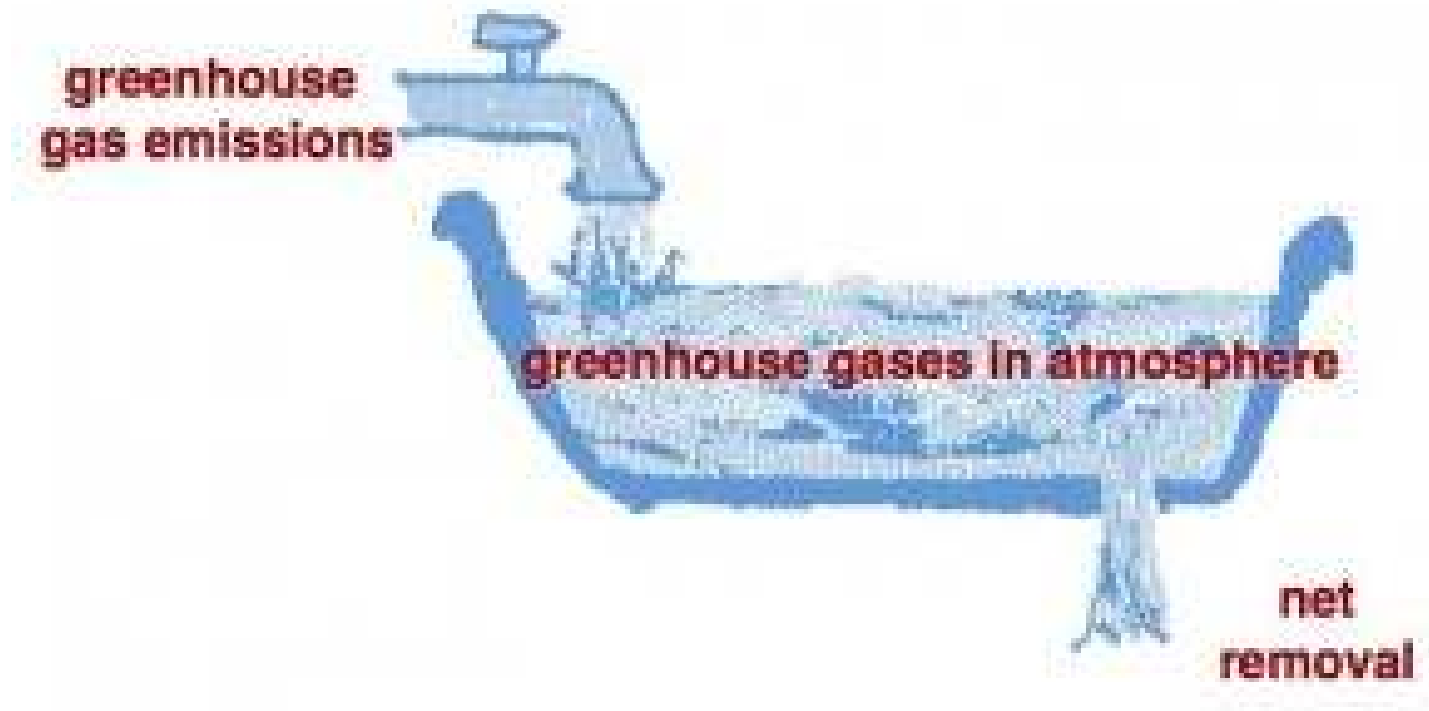


image courtesy of J. Steffen

Build Competencies: Science, Values, Ethics

- Education (formal and informal) needs to build general science literacy so students have the skills to:
 - Understand what the scientific method is, how it works, the process of building knowledge, weight of evidence, peer review, etc.
 - Reason, about consumption generally, our energy choices, how we grow our food, build our communities, and manage our forests
 - Understand our role in the causes and solutions to environmental issues: as citizens and as individuals/consumers

BUT Values Matter More than facts

- New Brunswickers believe :
 - We are dependent on the environment and one another to live well (86%), and
 - Humans are members of the earth's community of life along with all other living things (81%).
- We need to nurture the sense of connectedness, build ecological character
 - Take pride in NB skills: Practical, self-sufficiency

Climate Literacy Depends on Ecological Character; Sustainability as Ethic

Environmental Sphere	Vice Deficiency	Virtue Mean	Vice Excess
Sustainability	Insensitive/Lacking in passion	Temperance	Indulgent/Gluttony/ Avarice/ Greed/Intemperance
	Detached/Indifference	Aesthetic sensibility	Overly receptive
	Disregard	Love	Excessive commitment
	Conservative/Resistant to change/ Inflexible	Openness	Changeable/Unreliable
	Unseeing/Apathy	Attentiveness	Overly alert

Teach Outside; Feel Connected, Be a Role Model



Cognitive Science, Social Psychology, Psychology Can Guide Us

- As educators we have a role to play in framing climate change as a question of citizenship, not just consumerism
- Language matters. Research says we should talk like this:
 - “There is a *strong scientific consensus* that the climate is becoming *unbalanced* mostly *because of human activity*. We need policies and programs that are *fair* and *cut waste* by *making polluters* use clean energy and practice more sustainable agriculture and forestry. If we *act together*, we can *limit the risks* to our *health* and communities from a more extreme climate and *help each other thrive*.”

Questions, Discussion

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