



NPHyCo Final Project Conference

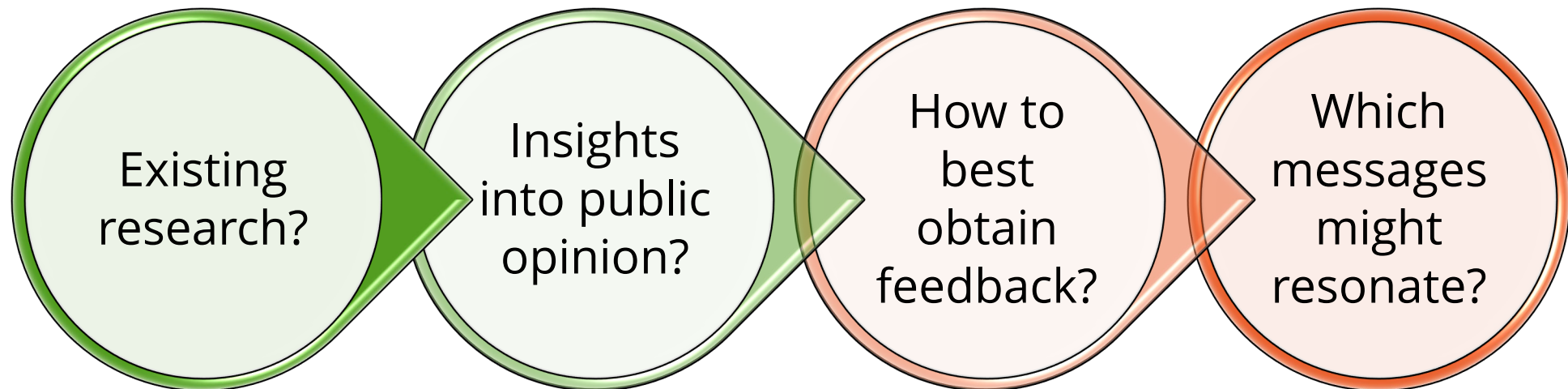
Public Acceptance

Jessica Johnson (nucleareurope)

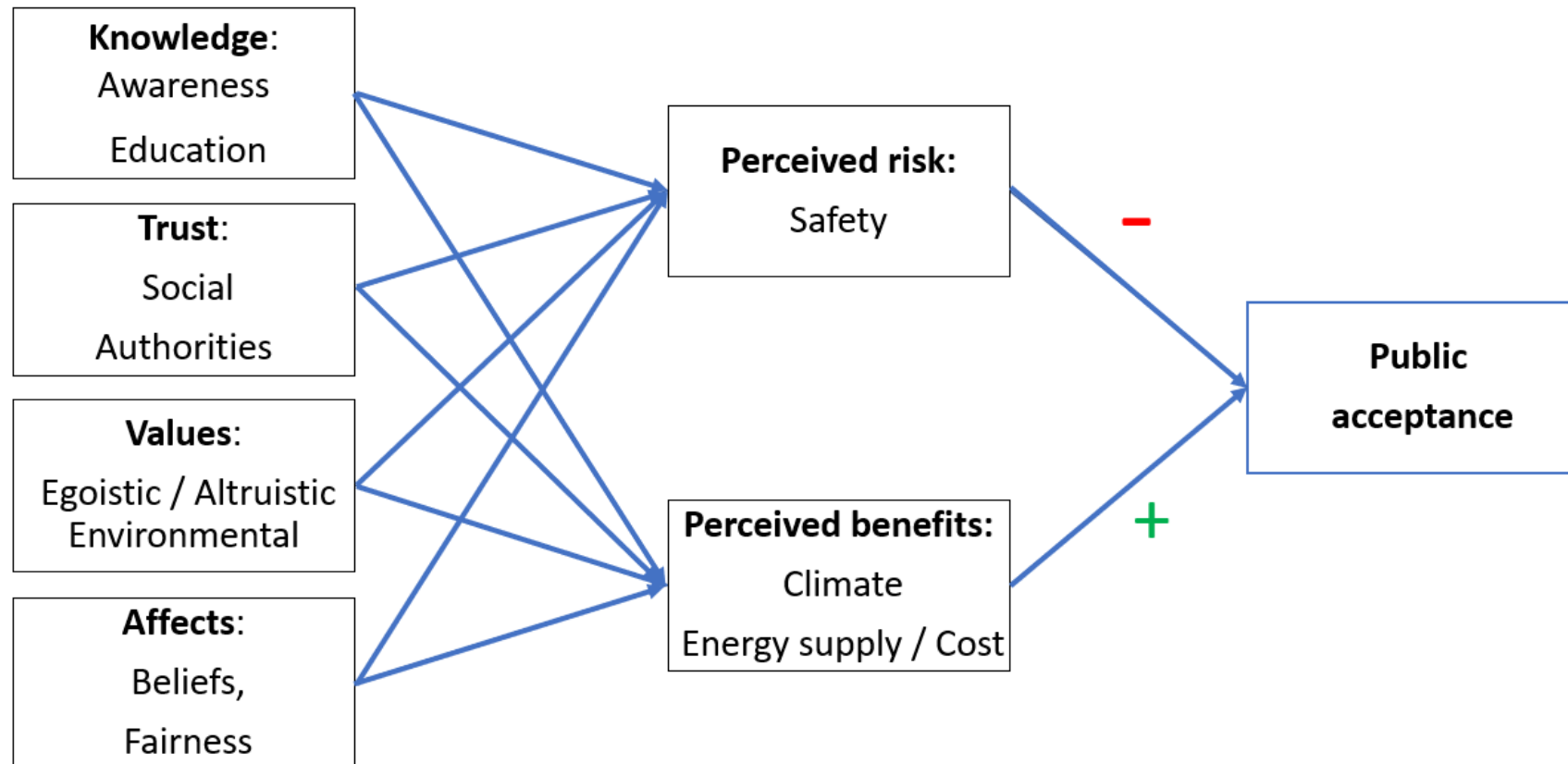


Overview

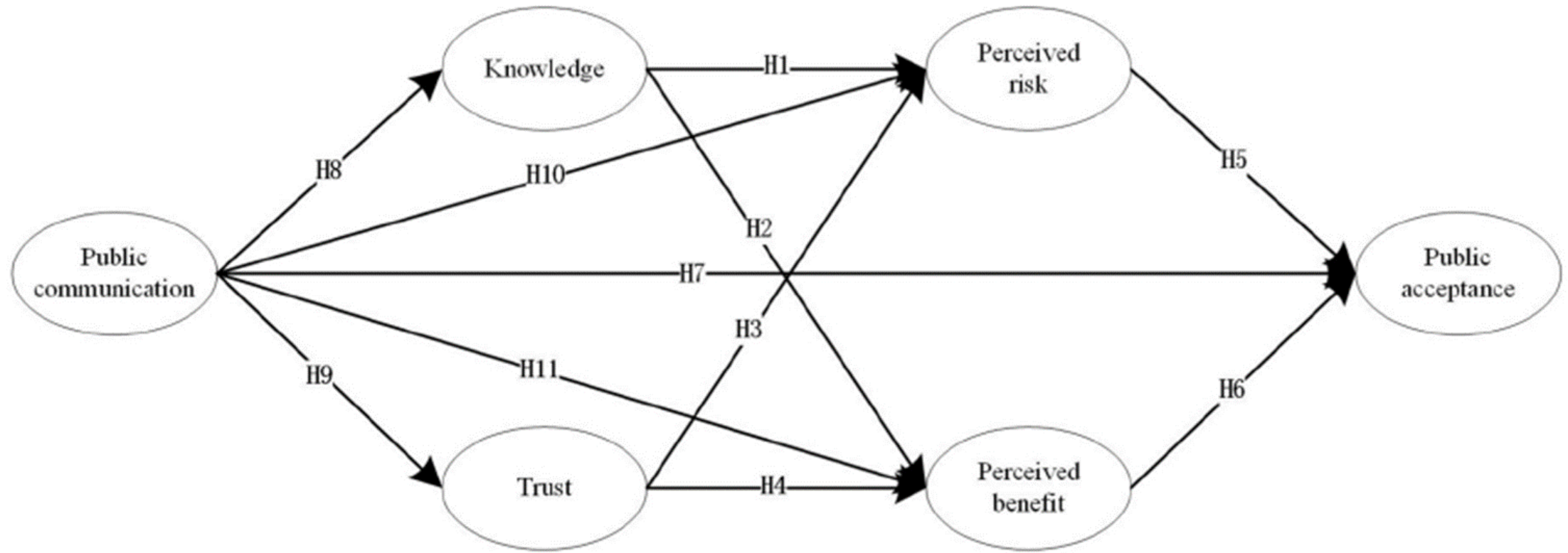
Coupling of a nuclear power plant with a hydrogen production facility



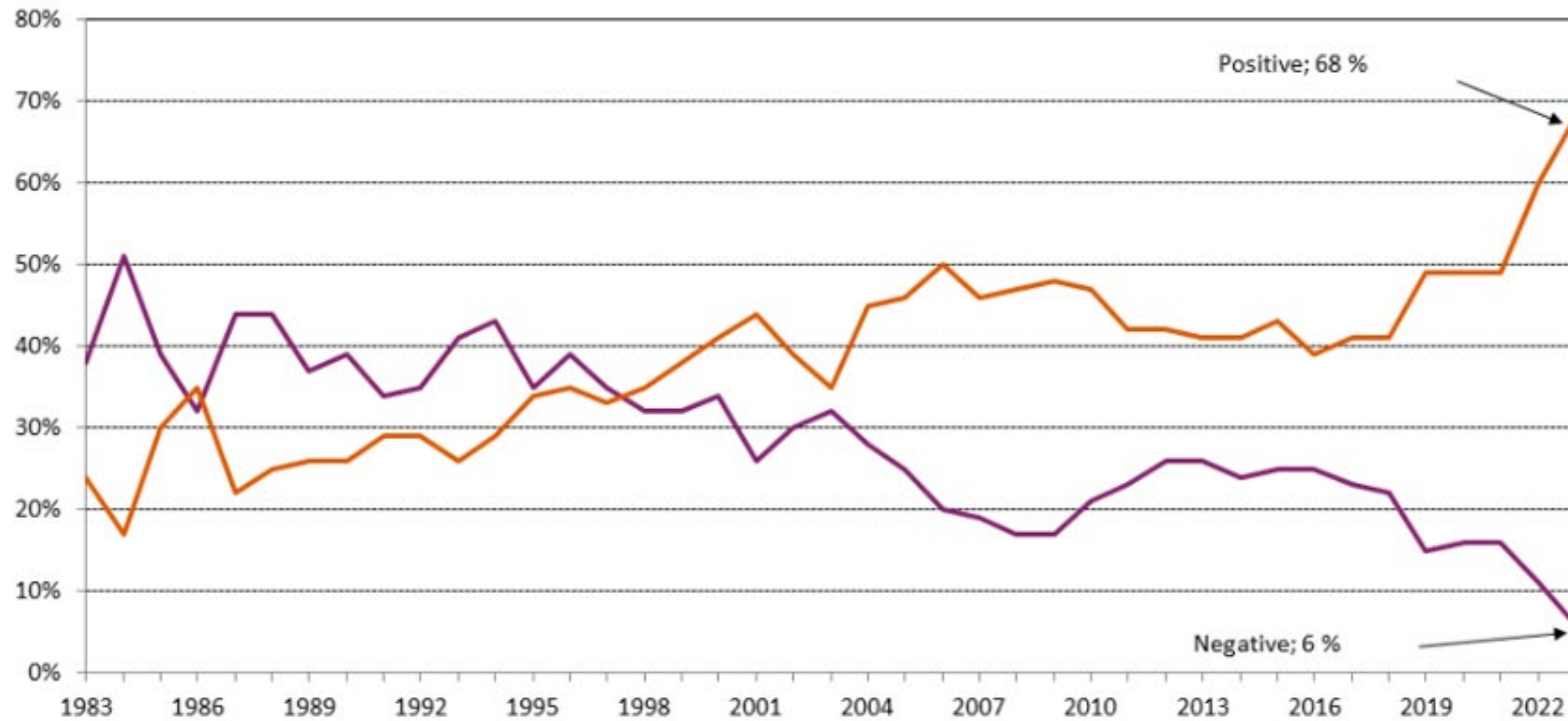
Public Acceptance Model



Role of Communication

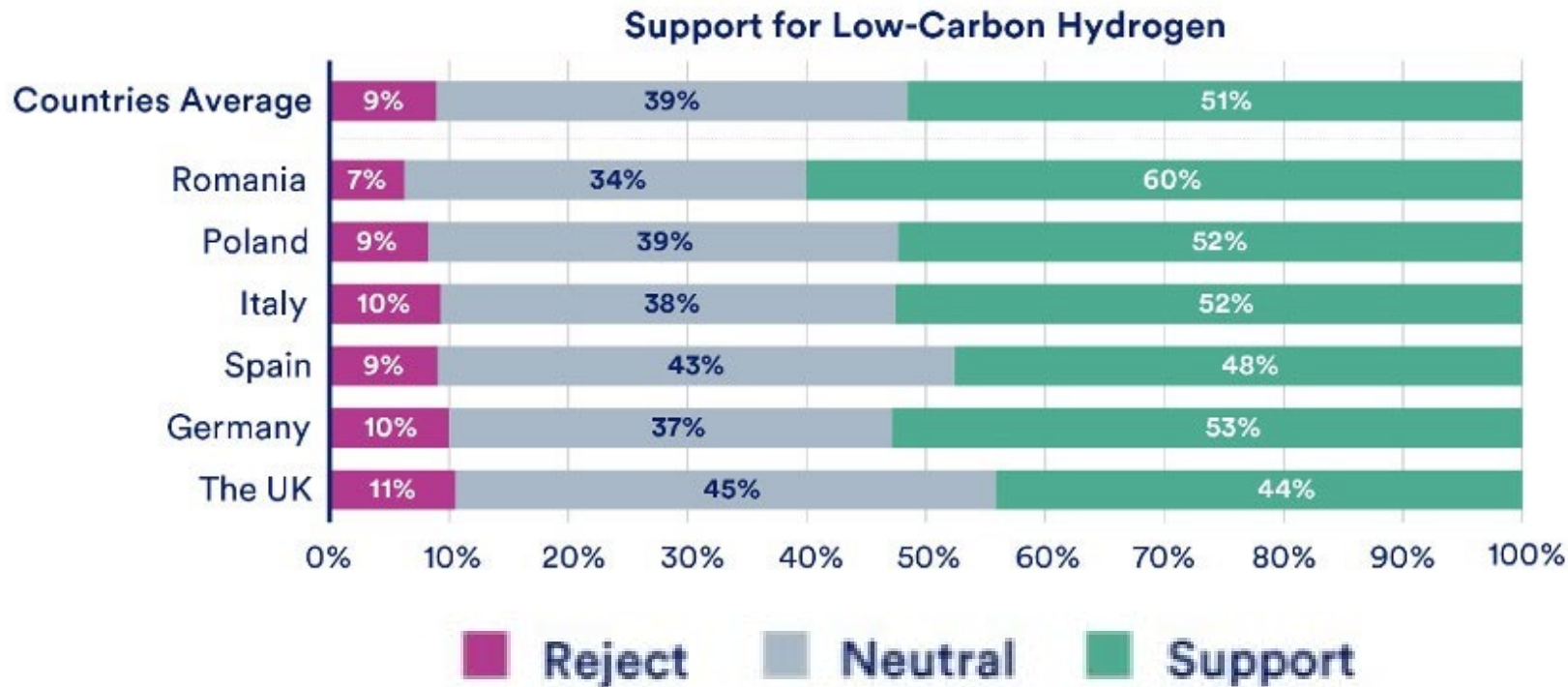


Existing surveys: nuclear



Finland
Development of the acceptance of nuclear power in Finland 1983-2023

Existing surveys: low-carbon hydrogen



Support

Based on what you've read, how in favour are you of Low-Carbon Hydrogen being rolled out across [COUNTRY] on a scale of 0- 10?)



Existing surveys: nuclear + hydrogen



Assessment of potential shared benefits/risks

Shared perceived benefits	Shared perceived risks
<u>Environmental:</u> <ul style="list-style-type: none"> - Replacement of fossil fuel - Decarbonisation of 'hard to abate' sectors 	<u>Environmental:</u> <ul style="list-style-type: none"> - Impacts on biodiversity - Resource scarcity (Uranium and purified water)
<u>Technical:</u> <ul style="list-style-type: none"> - Flexibility of use as compared to other sustainable sources - Storage capacity for electrical power 	<u>Technical:</u> <ul style="list-style-type: none"> - Technical and human failures - Accidents - Transport & storage of hydrogen and nuclear waste
<u>Economic:</u> <ul style="list-style-type: none"> - Energy self-sufficiency - Stable energy costs 	<u>Economic:</u> <ul style="list-style-type: none"> - Large investment and uncertainty in costs - Raw material dependence
<u>Social:</u> <ul style="list-style-type: none"> - Technological innovation - Job creation 	<u>Social:</u> <ul style="list-style-type: none"> - Conflicts of interest (Local vs global) - Dependence on political will

Actions

EU Survey V1

EU Survey V1

National
survey Ukraine

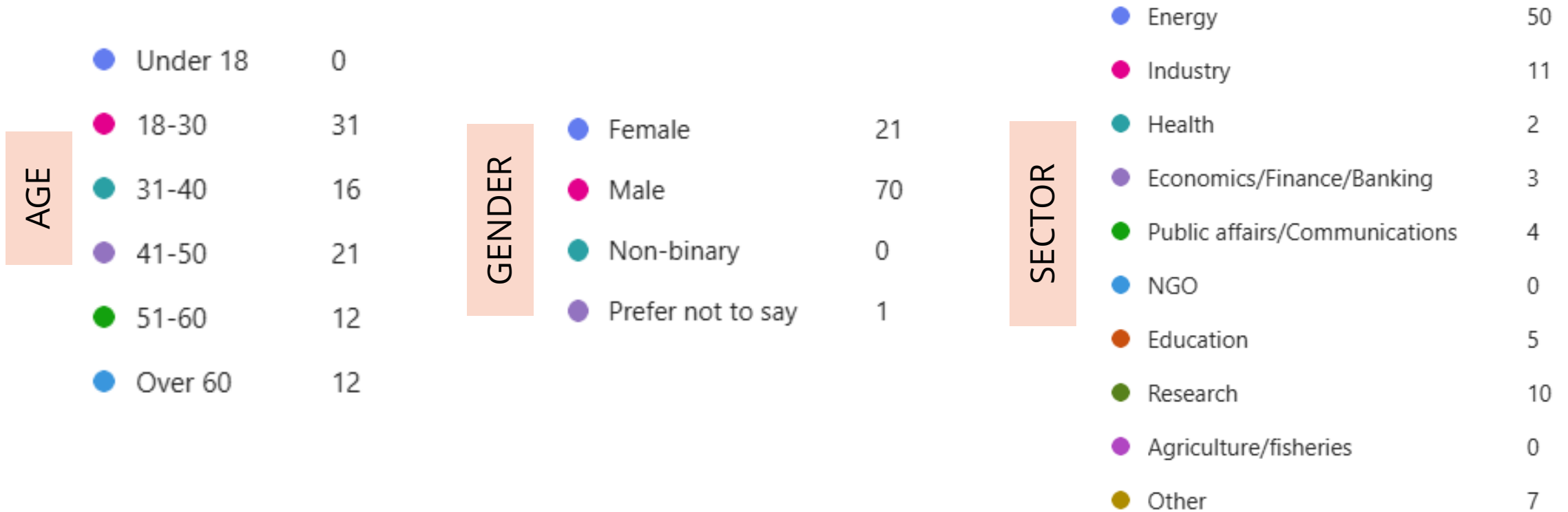


EU Survey – First Version

- Limited number of respondents
- Majority from (nuclear) industry
- Knowledge based on 'self assessment'
- Results could therefore be considered as not meaningful/representative
- BUT: Lessons learnt + enabled development of more robust survey

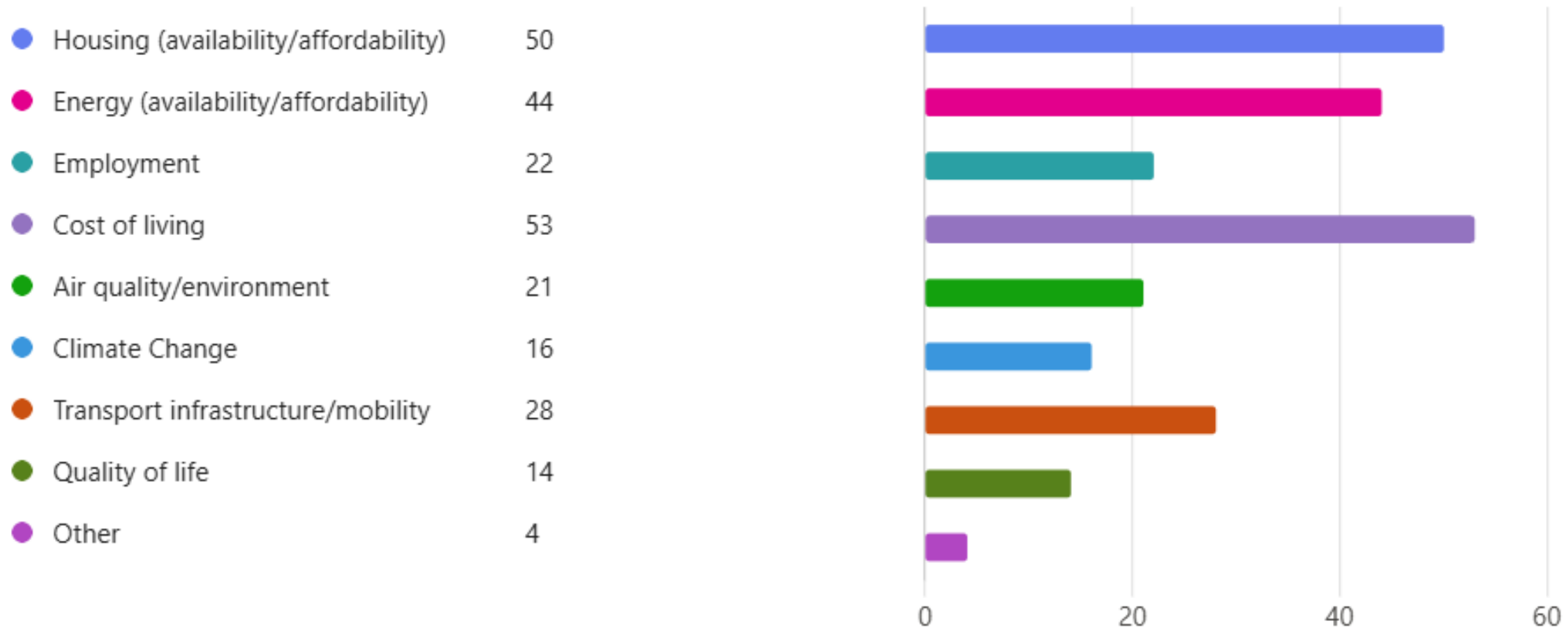


EU Survey – Second Version - General





Main concerns – Local Community





Level of knowledge

NUCLEAR

● Nothing	1
● Not so much	11
● A little	23
● A lot	57

HYDROGEN

● Nothing	13
● Not so much	24
● A little	25
● A lot	30



Hydrogen Uses
Hydrogen Production Methods



Level of support

	Strongly Support	Support	Neutral	Oppose	Strongly Oppose
NUCLEAR	57	22	10	2	1
HYDROGEN	30	35	26	1	0



Level of support – Why?

NUCLEAR

SUPPORT
Clean, affordable and reliable
NEUTRAL
Expensive and did not believe it was flexible in terms of production
OPPOSE
Safety, waste and perceived environmental impacts

HYDROGEN

SUPPORT
Clean, flexible and a solution for hard-to-abate sectors
NEUTRAL
Don't know' + cost
OPPOSE
Do not believe it will bring the solutions being put forward

Could coupling bring benefits to your country?



- Yes 64
- No 6
- Don't Know 22

YES
Efficient way of producing energy Can help decarbonise industry and district heating Potentially affordable energy source
DON'T KNOW
Lack information
NO
Other alternatives exist

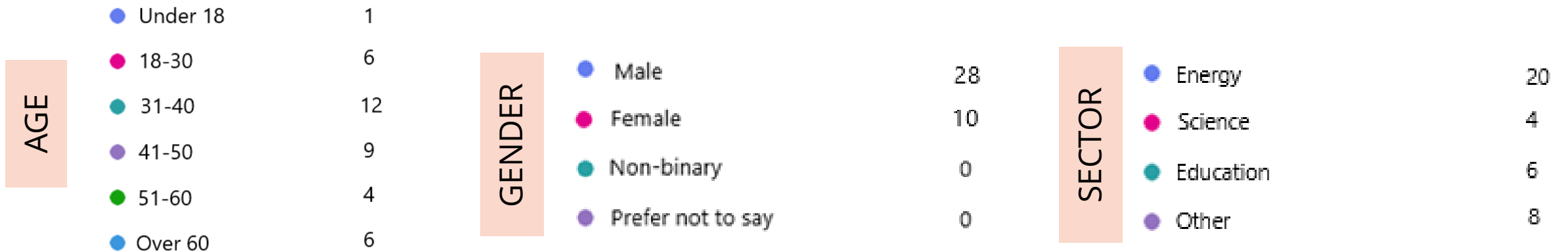


Willingness to consider coupling in their local community? (NIMBY)

- Yes 58
- No 11
- Don't Know 23

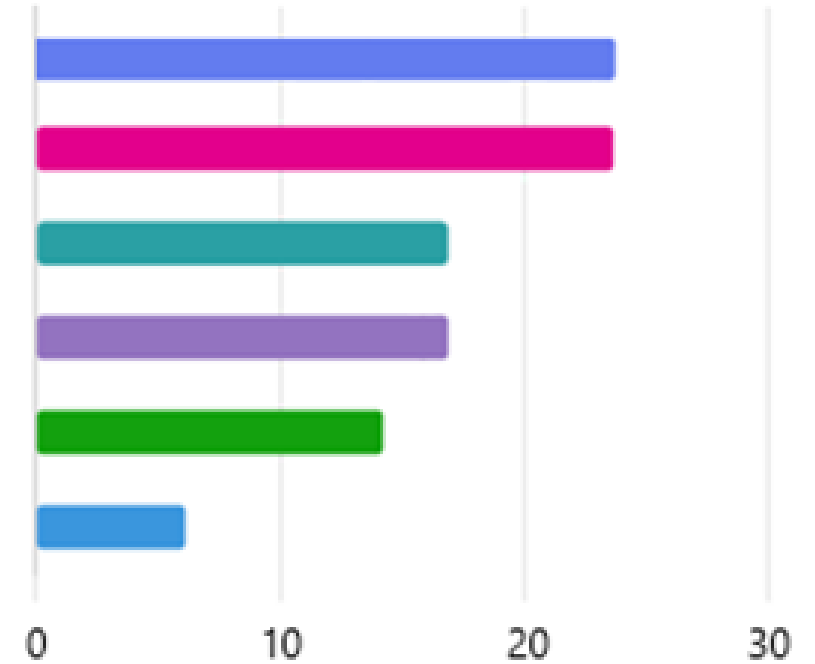
YES
Benefits to their community (jobs, economic growth) Both technologies implement high level of safety/are well regulated. Provision of cheap, clean and constant energy.
DON'T KNOW
Lack information
NO
Other alternatives exist

Ukraine Survey - General



Main concerns – Local Community

● War	9
● Government	9
● Energy system	7
● Environmental issues	7
● Social issues	5
● Other	1



Level of knowledge

NUCLEAR	● Nothing	0
	● Not so much	1
	● A little	2
	● A lot	35

HYDROGEN	● Nothing	2
	● Not so much	8
	● A little	14
	● A lot	14

Level of support

NUCLEAR

● Strongly Support	33
● Support	5
● Neutral	0
● Oppose	0
● Strongly Oppose	0

HYDROGEN

● Strongly Support	11
● Support	20
● Neutral	7
● Oppose	0
● Strongly Oppose	0

Level of support – Why?

NUCLEAR

SUPPORT

- Reliability
- Stability
- Ability to produce large amounts of energy
- High safety standards
- High level of training of specialists in the field
- Environmental friendliness and minimal harm to the planet
- Lack of alternatives

HYDROGEN

SUPPORT

- Safety, environmental friendliness and lack of harmful emissions
- Alternative nature, prospects and opportunities for the development of related industries
- Development of new technologies
- Creation of additional jobs and opportunities

NEUTRAL

- Lack of knowledge
- Misunderstanding of how reliable and safe it is
- Complexity of production
- Lack of completed experimental results.
- High cost

Could coupling bring benefits to your country?

- Yes 32
- Don't Know 6
- No 0

YES
<p>Nuclear energy is the cleanest solution for obtaining clean hydrogen. Hydrogen can be used nationally and exported (benefit to economy) Important role as an energy carrier and as a fuel for vehicles.</p> <p>Development of a new industry = economic benefit from inventions, international interaction and cooperation, jobs and intellectual position of citizens.</p>
DON'T KNOW
Lack information

Willingness to consider coupling in their local community? (NIMBY)

- Yes 28
- Don't know 8
- No 2

YES
Technological development Economic benefits for the region New jobs Cheaper electricity Availability of alternative fuels
DON'T KNOW
Lack information
NO
Safety: war + lack of completed research Geographical and economic complexity of implementing this idea



Thank you!

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