

BUSINESS FINLAND

The Role of Nuclear Energy
and Climate Change

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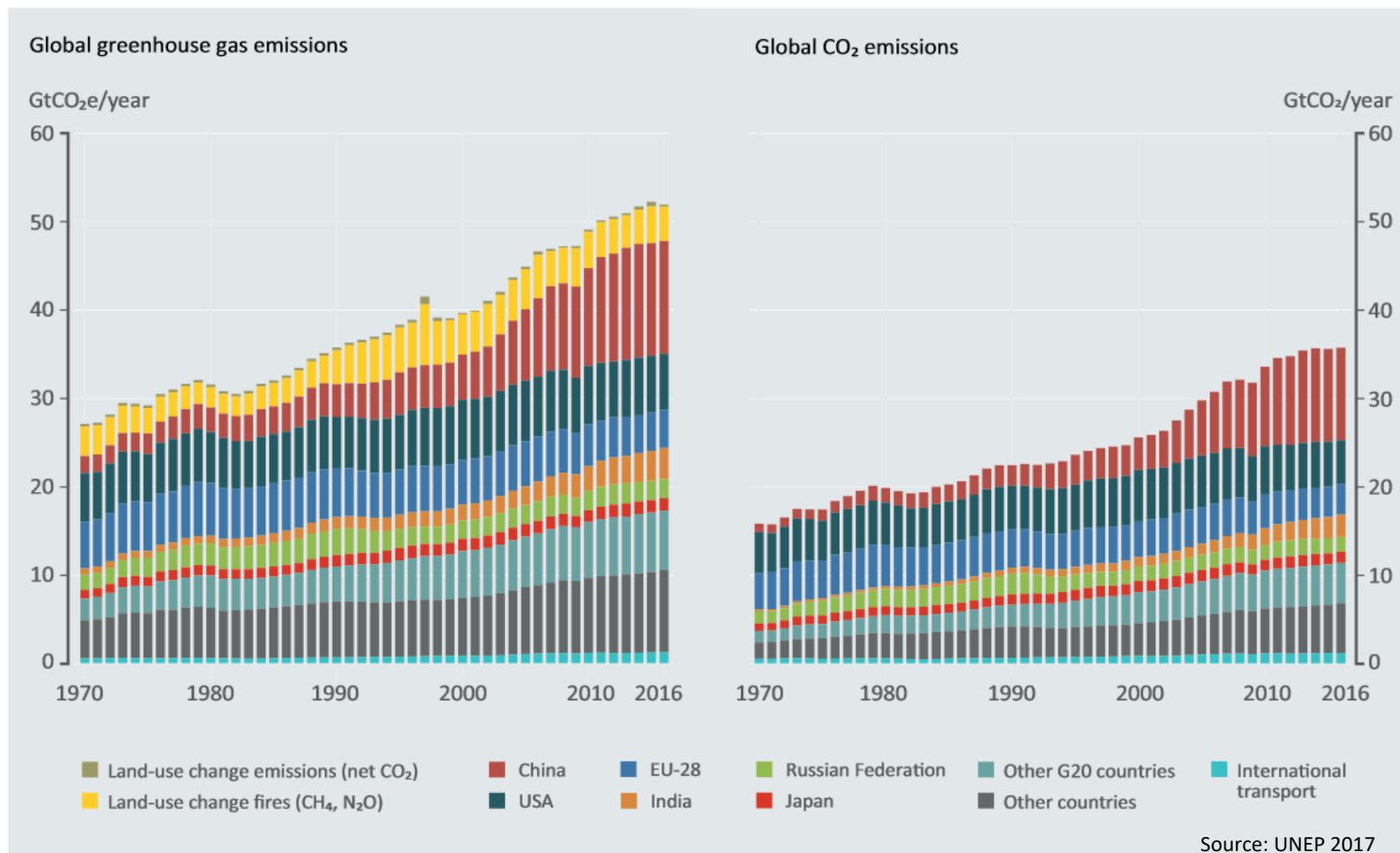
Three points

- Foresight and megatrends
- Finns attitudes to energy, nuclear energy and waste
- Finnish successful nuclear strategy with final disposal



Figure ES.1.a: Global greenhouse gas emissions for top six emitting countries and regions (excluding land use, land-use change and forestry), international transport emissions, and land use, land-use change and forestry emissions.

Figure ES.1.b: Global carbon dioxide emissions per region from fossil fuel use, cement production and other processes, and from international transport.





**Sustainability
crisis now!**

SITRA



**Global
interdependency
with growing
tensions**



**Technology
changes
everything**

**Megatrends
2016**

WHO HOLDS THE FUTURE VISION?



What kind of society are we building?

"Will humankind change more in the next 30 years than in the past 300?"

Human, social, economic aspects...

ALL!

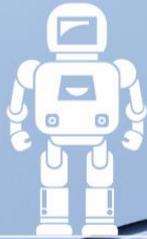


Technology changes everything

Virtualisation, digitalisation, artificial intelligence (AI), instrumentalisation of everything, robotisation, nanomaterials, biotechnology, pharmacology, energy technology, global ICT structures, global crowd platforms, blockchain technology

This challenges our capability to renew our thinking
But also offers great opportunities!

Technology establishment:



- Humans will become a multiplanetary species
- The mystery of death can be solved
- AI is already here
- Human and machine can be combined
- Virtual reality changes the game

Where it currently hurts?

- Work
 - Polarisation
 - Media
- + other side effects

WHO OWNS THE FUTURE?

Ageing population: young people can't solve the future on their own



Everyone must take action

Technology as an enabler of sustainable well-being

Return of humanism and human capabilities

The new deal of the economy and the sharing economy

Importance of ethics

Wider definition of well-being

The new generation will find its ways

New organisations, platforms and identities





Sustainability crisis now!

The biggest challenge of our time



New mindset about the planet, economy and well-being

De-coupling of economic growth and the use of natural resources

Solutions: technology + people

1 Energy revolution: renewables paving their way, fossils in decline

2 The potential of the circular economy

3 Smart services and products finding markets

4 Smart seamless traffic

5 Cities are the key to solving wicked problems: new local solutions with the help of technology



Global warming and resource scarcity

Dramatic decrease of natural resources and climate change are challenges that will define the future. We have to act now.

A 4-6 °C increase in temperature would be catastrophic



But even the best solution or technology needs people to work

In the air...

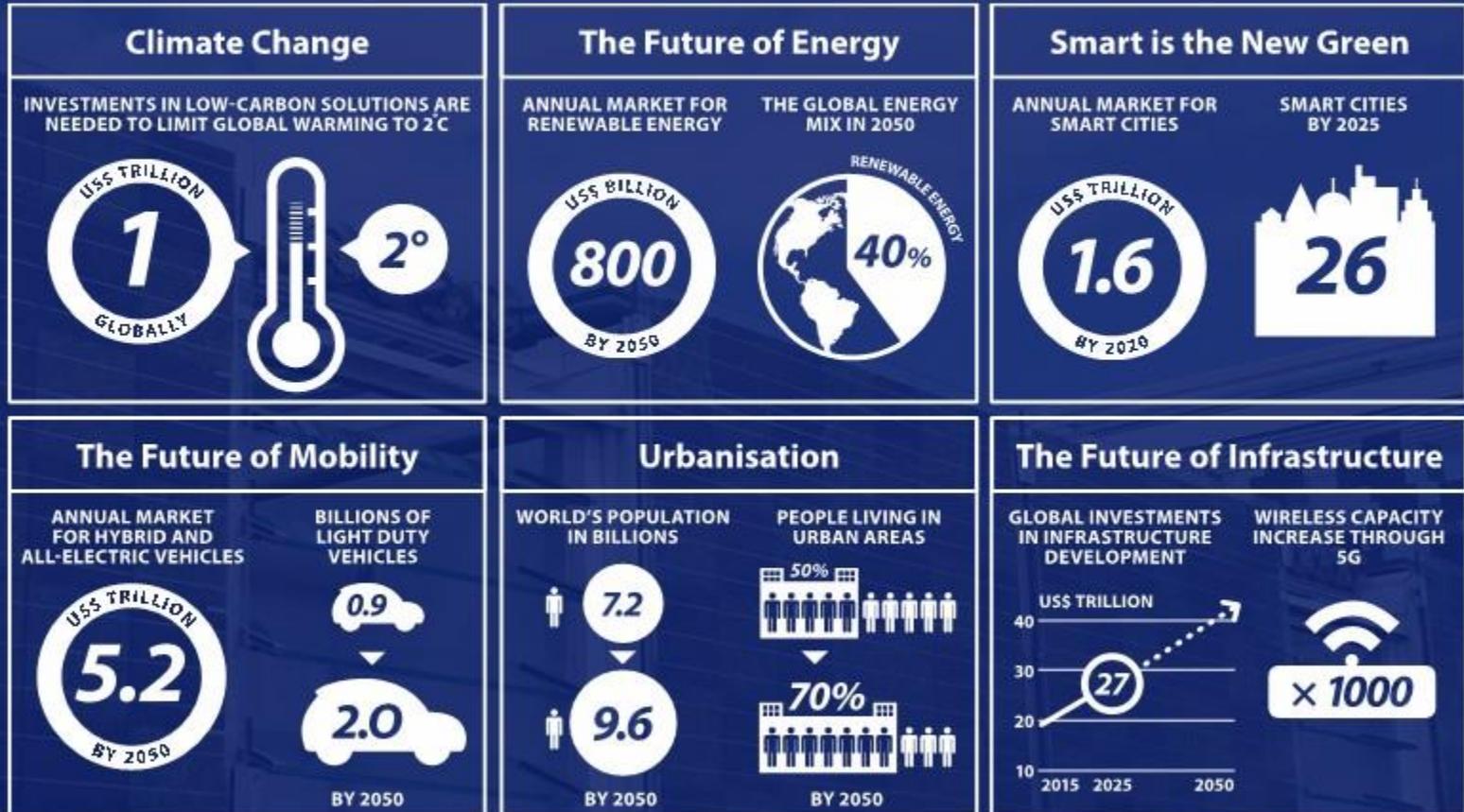
€1500 billion market for cleantech solutions 2020

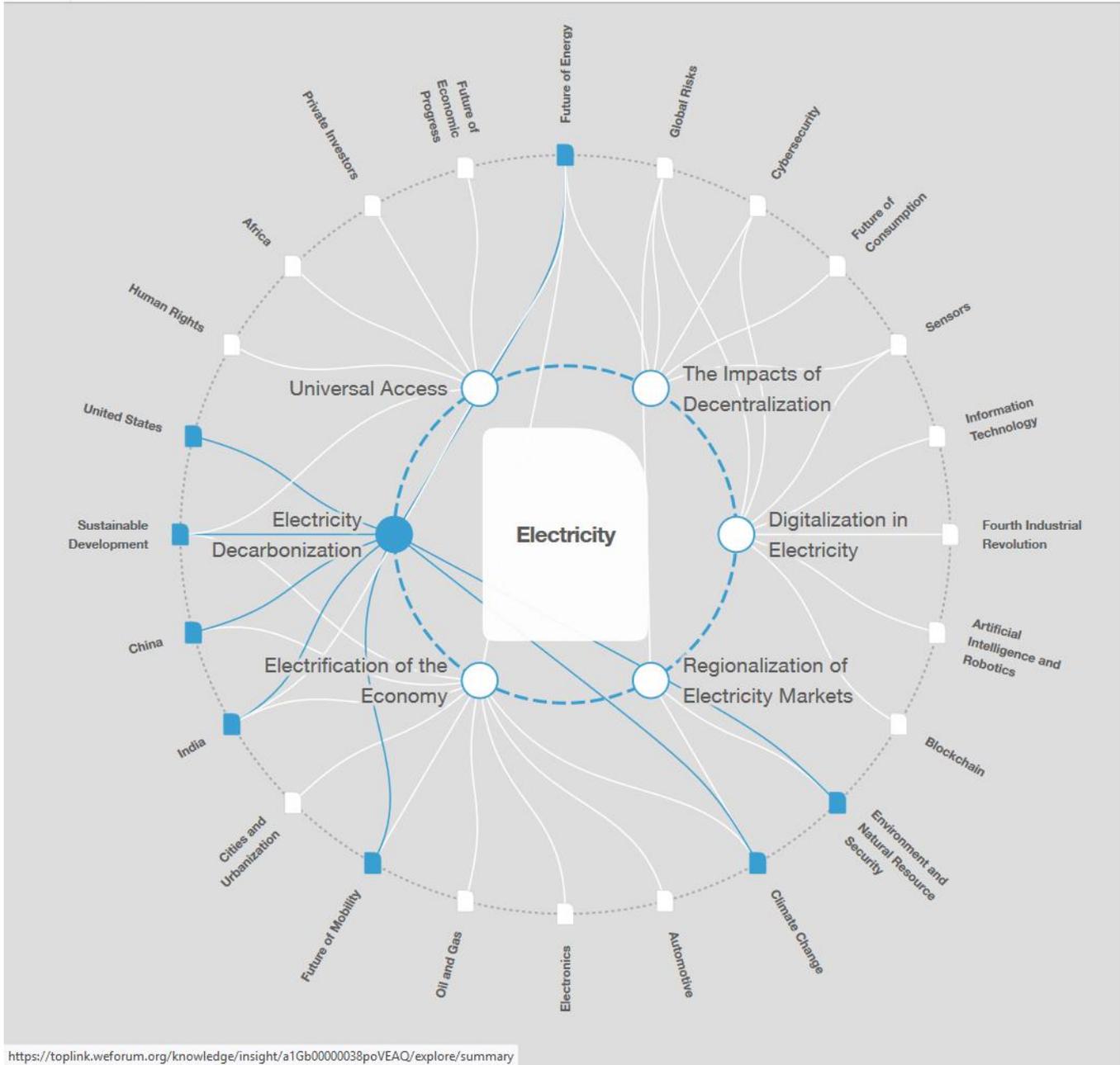
Is this trend an opportunity for humankind to work together?



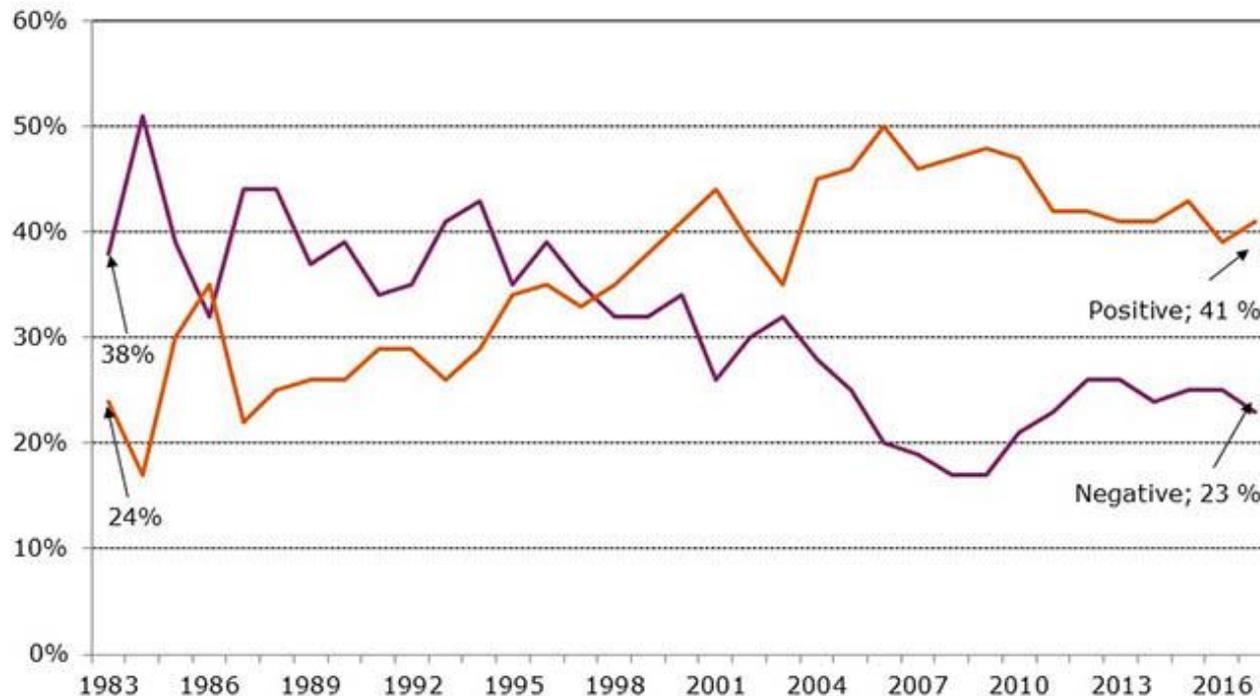
The solutions are already in our hands!

KEY MEGATRENDS DRIVING LOW-CARBON BUSINESS





Finns who have a favourable attitude towards nuclear power as an energy source



According to the survey that was carried out in March, 41 percent of Finnish people are now in favour of nuclear power and 23 percent are against.

Climate change is real and ultimate threat and the whole world should start immediate action of prevention with all the possible means available

All n=1000

Strongly agree Agree Neither Disagree Strongly disagree

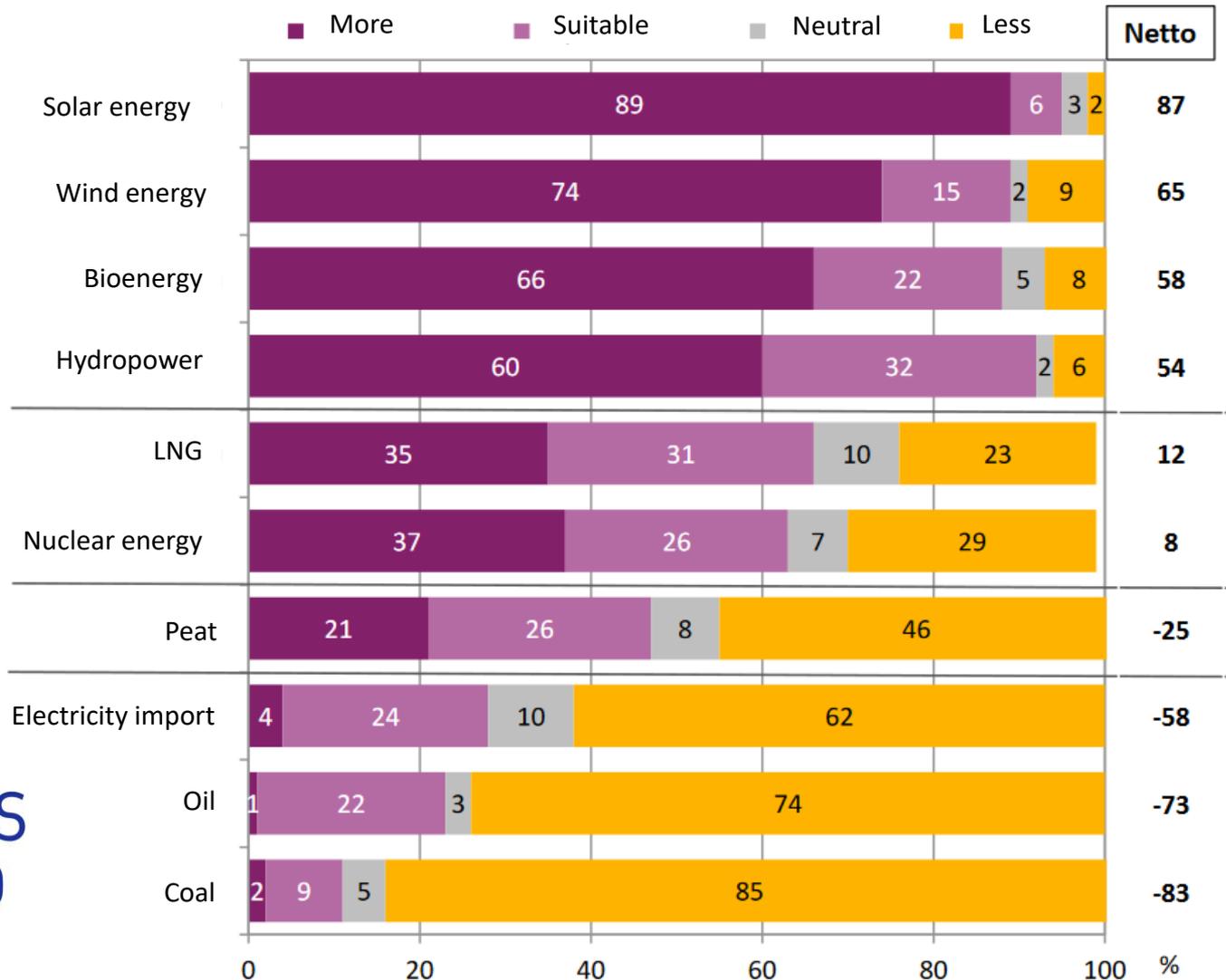


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Which direction our electricity production should take?

Nettoluku on laskettu vähentämällä lisätä %-osuudesta vähentää %-osuus

All *n=1000*

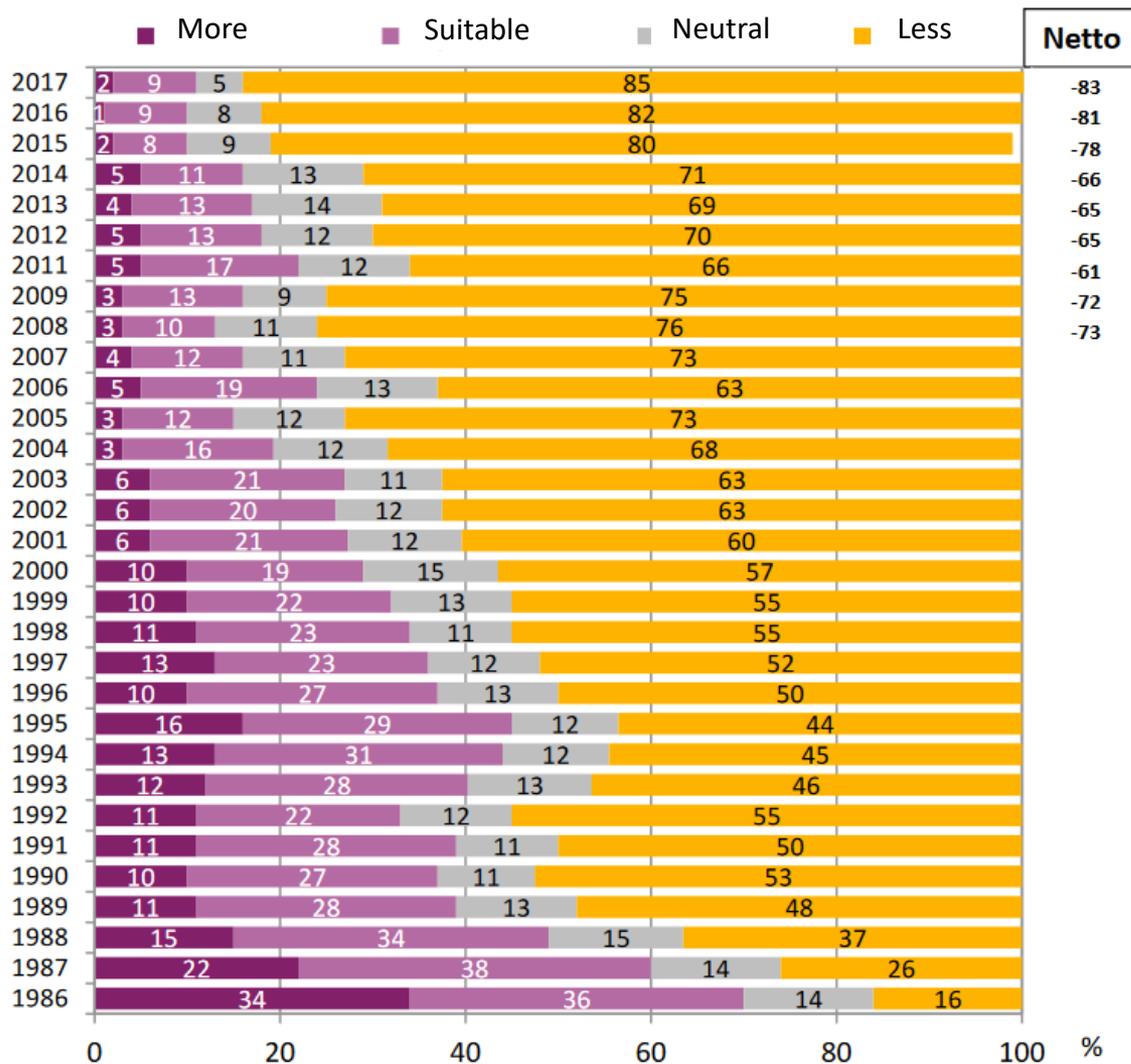


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The use of coal should

All n=1000

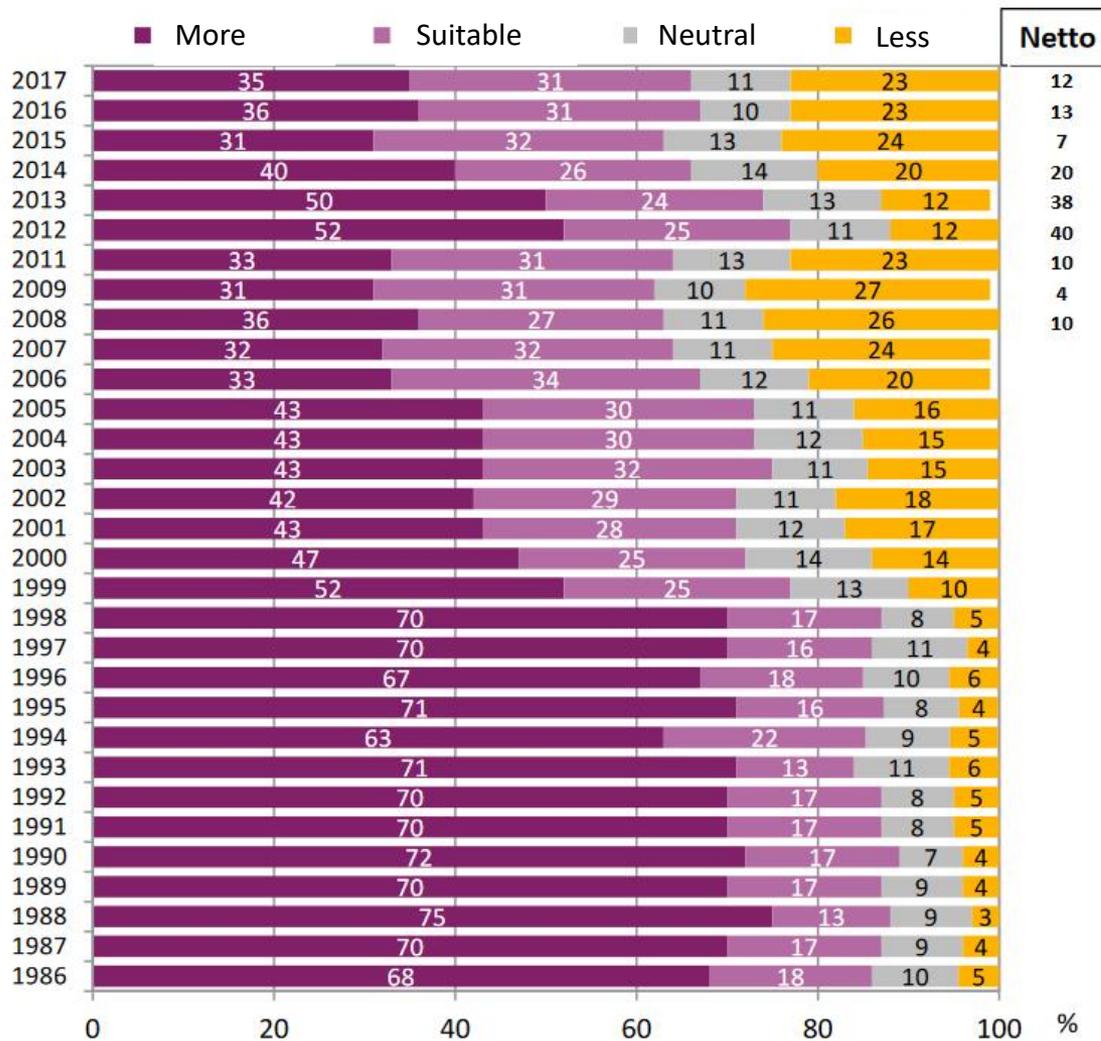
Nettoluku on laskettu vähentämällä lisätä %-osuudesta vähentää %-osuus



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The use of natural gas should

Nettoluku on laskettu vähentämällä lisätä %-osuudesta vähentää %-osuus

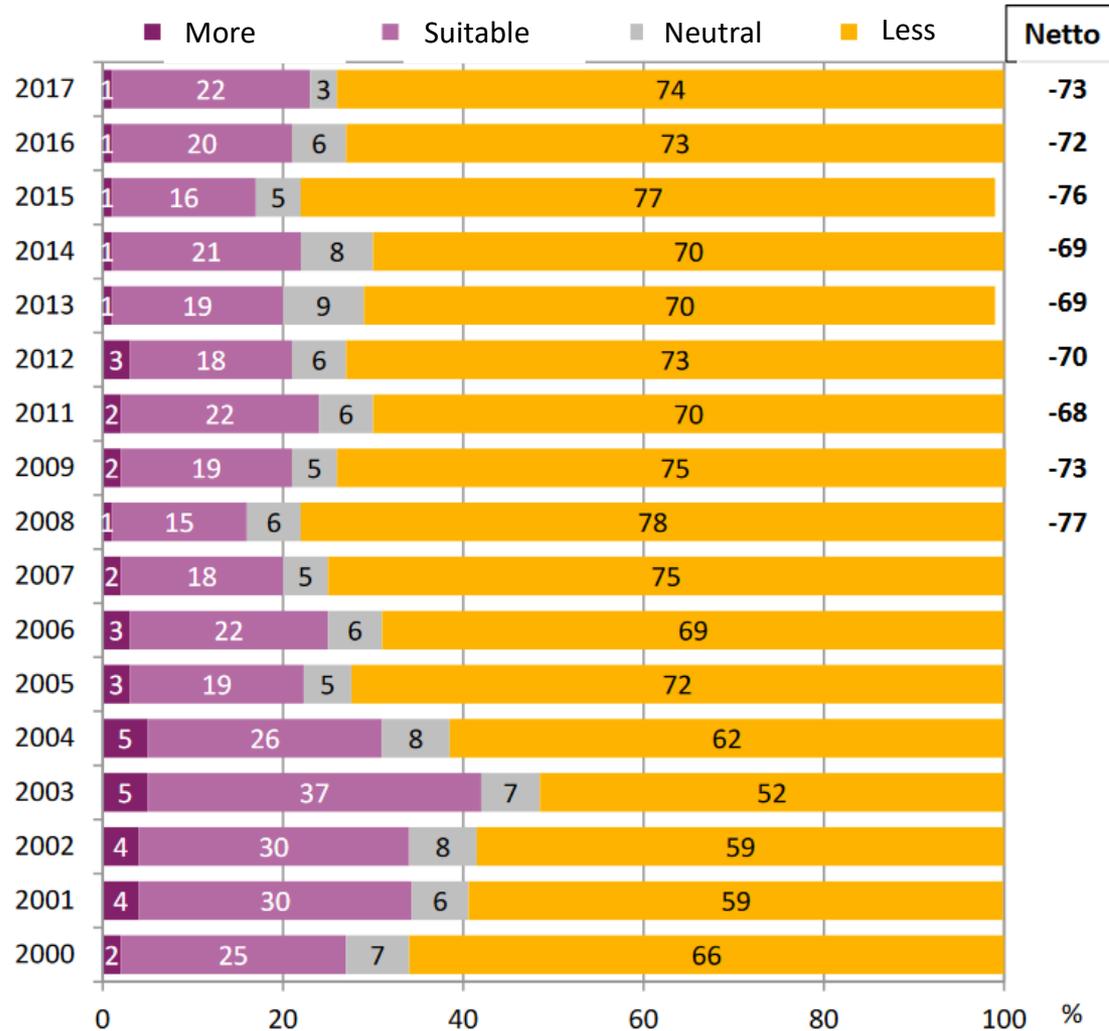


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The use of oil should

All n=1000

Nettoluku on laskettu vähentämällä lisätä %-osuudesta vähentää %-osuus



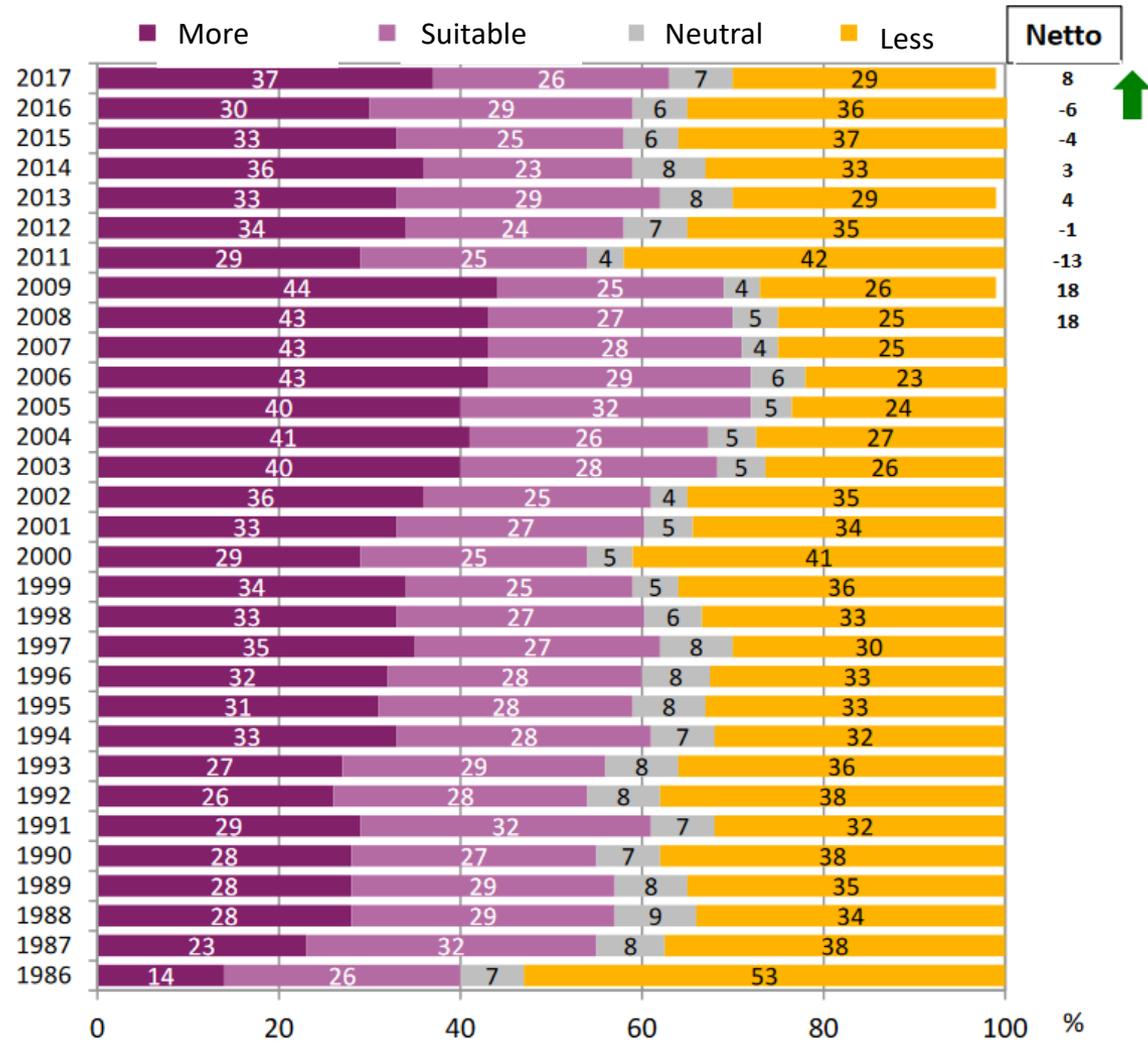
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The use of nuclear power should

All n=1000

Nettoluku on laskettu vähentämällä lisätä %-osuudesta vähentää %-osuus

Fukushiman ydinvoimala-onnettomuus 3/2011

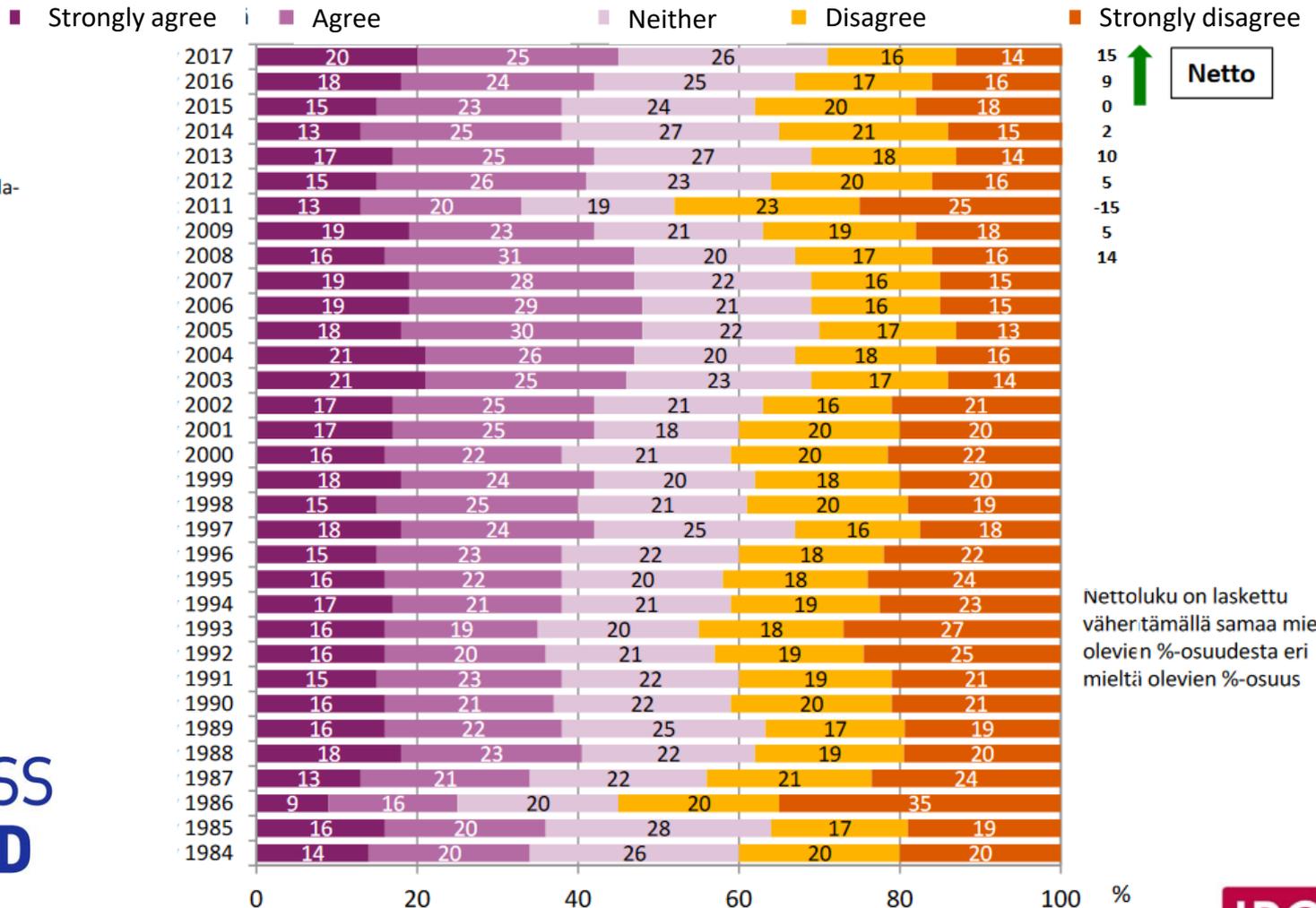


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Nuclear power is environmentally friendly for electricity production

All ; n=1000

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onnettomuus 3/2011



Nettoluku on laskettu vähentämällä samaa mieltä olevien %-osuudesta eri mieltä olevien %-osuus

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The final disposal of nuclear waste to Finland's bedrock is safe

All n=1000

Fukushiman ydinvoimala-
onnettomuus 3/2011



Nettoluku on laskettu vähentämällä samaa mieltä olevien %-osuudesta eri mieltä olevien %-osuus

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Success factors in Finland

- Transparent and open discussion with everyone
- Clear responsibilities:
 - each producer of nuclear power-generated electricity is responsible for its own nuclear waste management
 - the Ministry of Employment and the Economy holds the highest power of control and supervision over nuclear waste management in Finland.
 - the Radiation and Nuclear Safety Authority (STUK) supervises the safety of nuclear power generation.
- Long term and stable policy on nuclear waste management
- Strict safety requirements, credibility and independence of the safety authority (STUK)
- Strong expertise on nuclear sector - also in the future
- World class know-how and excellent companies

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GLOBAL EXPERT

Thank you!
ありがとうございました