

PUBLIC PREFERENCES FOR NUCLEAR VERSUS HYDRO ENERGY: EVIDENCE FROM SLOVENIA

Nives Dolšak¹ · Nevenka Hrovatin² · Jelena Zorić²

¹ School of Marine and Environmental Affairs, University of Washington, Seattle
² University of Ljubljana, School of Economics and Business, Ljubljana, Slovenia

Slovenians split the mix almost evenly.

Average preferred nuclear share is 52.5%. Support rises with perceived safety, trust and economic benefits. Proximity (NIMBY effect) matters mainly around hydropower.

WHY THIS CHOICE MATTERS

In line with the revised Comprehensive National Energy and Climate Plan (NECP, 2024) Slovenia must pursue **the goals of green transition**.



Slovenia must replace coal by 2033 and faces the expiry of Krško NPP’s (NEK1) operating lifetime in 2042—while electricity demand rises through transport and heating electrification.

Two decarbonisation strategies identified:

- investments in **nuclear energy**: construction of NEK2;
- investments in **renewable energy sources (RES)**: for hydropower options include building HPPs on the middle and lower Sava River, constructing pumped-storage HPPs on Drava river and reconstructing existing plants.

RESEARCH QUESTION

When citizens choose between new hydro and nuclear investment, what shapes the share they assign to nuclear power?

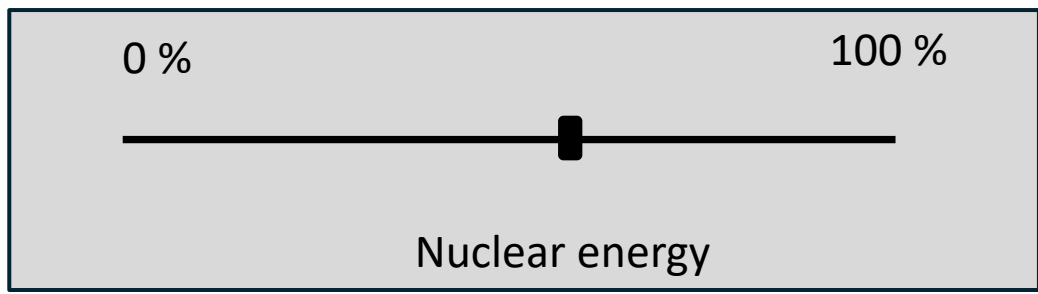
- The study tests whether preferences reflect perceived impacts on health, jobs, landscape, import independence and supply reliability—and whether proximity to existing facilities changes those relationships.



- Not in My Backyard (NIMBY) hypothesis is tested by incorporating respondents’ proximity to nuclear and hydropower facilities.
- It is also examined how socio-economic characteristics (age, gender, income, education, homeownership), installed solar panels, political orientations, and environmental attitudes shape preferences for nuclear over hydropower.

DATA & METHOD

- Online survey conducted in March 2026
- Representative sample of 1,000 Slovenian residents
- Cross-sectional design
- OLS regression analysis
- dependent variable: preferred nuclear share (0–100%)



A NEAR-EVEN NATIONAL SPLIT

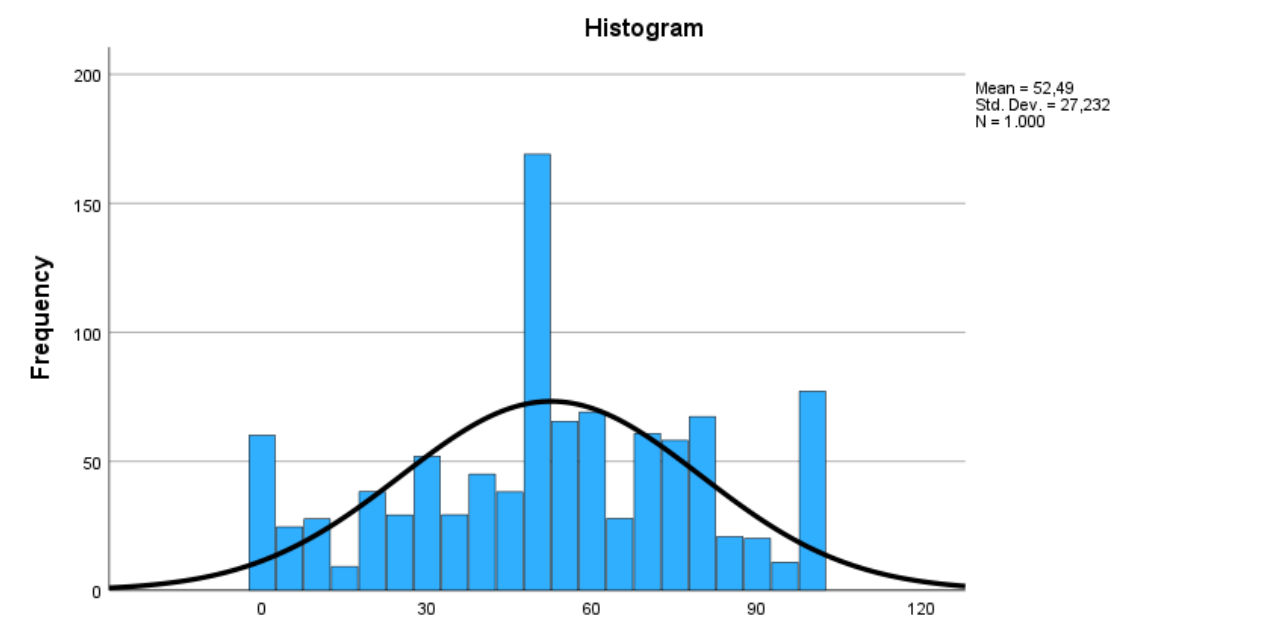
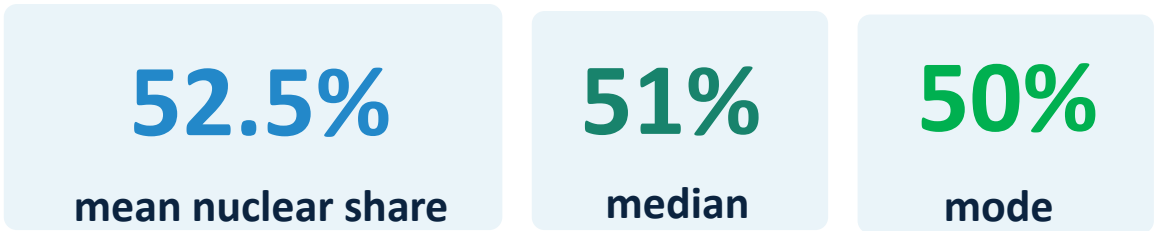
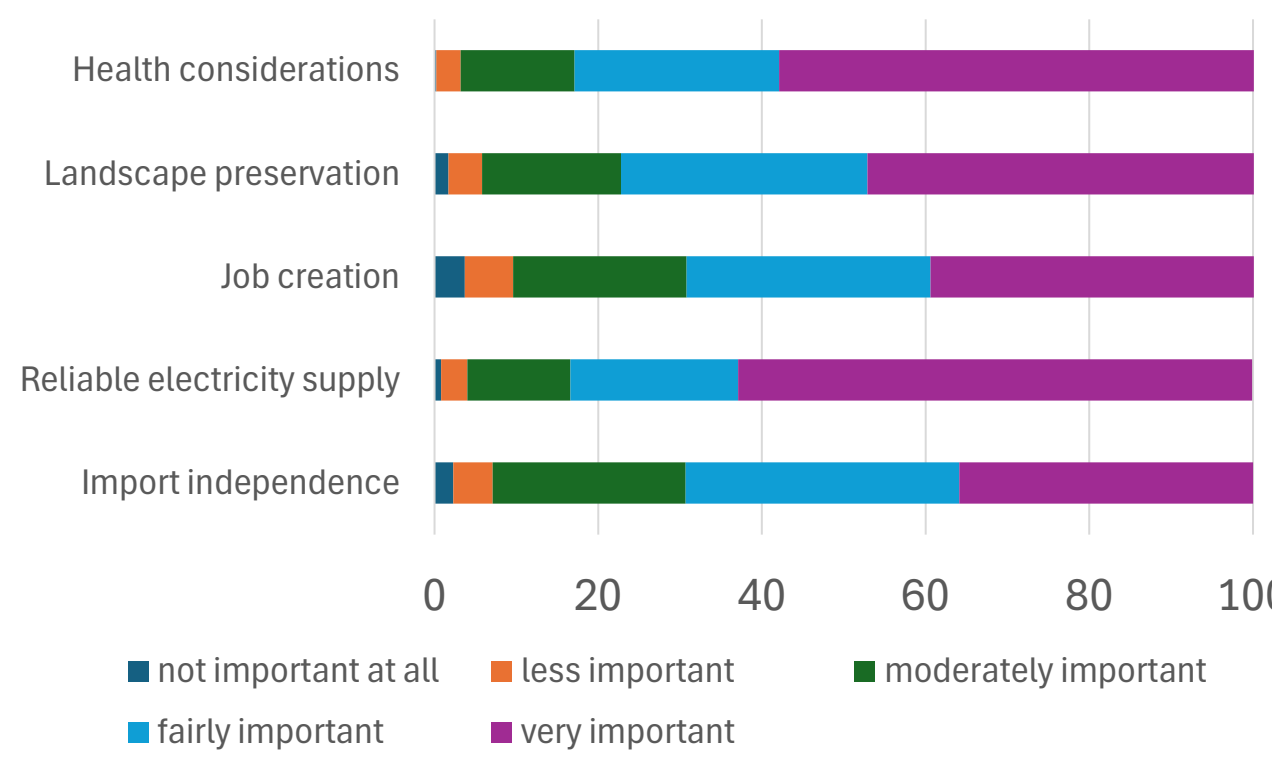


Figure: Distribution of chosen shares of nuclear energy by respondents (in %)



WHAT CITIZENS PRIORITIZE



Reliability and health lead the stated priorities.

Yet health concern points away from nuclear, while reliability, jobs and landscape preservation point toward it in the regression.

SIGNIFICANT PREDICTORS

TOWARD MORE NUCLEAR

Perceived NPP safety :	+14.79***
Trust in NEK:	+7.55***
Expected no bill increase:	+6.23***
Having installed solar panels:	+6.48***
Proximity to HPP:	+24.03*
Landscape importance:	+2.97**
Job importance:	+2.52**
Reliable supply importance:	+2.42*

TOWARD LESS NUCLEAR

Politically undecided:	−8.07***
Trust in radiation-protection ad.:	−2.60*
Religious:	−2.19*

OLS coefficients; * p<.05, ** p<.01, *** p<.001. Selected statistically significant results.

INTERPRETATION OF RESULTS

- No broad hydro-over-nuclear preference:** the average response slightly favors nuclear.
- Support for nuclear over hydro in Slovenia is shaped by the importance respondents attach to **supply stability (+), jobs (+), landscape (+) and health (-)**.
- Facility proximity does not generally moderate the importance respondents attach to these dimensions.
- Proximity to hydropower is associated with greater nuclear support—consistent with a **local NIMBY effect**.
- Support for nuclear over hydro is positively influenced by the **perceived safety of NPPs, trust in NEK, belief that electricity bills will not increase** and a preference for giving higher **priority to economic growth over environmental protection**.
- Socio-economic characteristics also influence preferences** (gender, income, employment status, being religious and politically undecided).

CONCLUSIONS & POLICY IMPLICATIONS

- The debate on the future energy mix in the EU has been renewed in light of the green transition and the war in Ukraine.
- A viable Slovenian energy strategy must address both national system benefits and local distributional concerns.
- Nuclear support grows when institutions make safety, reliability and household costs credible.

BOTTOM LINE

Public acceptance is not a simple technology ranking. It is built from trust, perceived safety, expected costs and place-based experience.

ENERGY CHOICE IS A SOCIAL CHOICE.

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