

Energy for Well-Being

Several European countries are currently undertaking revisions of their energy policies. Germany has proclaimed an accelerated phase-out of nuclear power and an ambitious goal for phasing-in renewable energies, whereas France has announced to extend the lifetime of its nuclear power stations and the United Kingdom is planning to build new ones. Further topical issues are concerns about rising scarcity of energy resources, environmental sustainability, and so-called energy poverty. Against this background, the project aims at an assessment of energy supply, energy costs and the structure of the energy system in terms of citizens' utility, operationalized as subjective well-being (SWB).

Research Questions

- How do the costs of energy affect SWB?
- How is SWB related to the energy mix?
- What are the consequences for SWB of living close to energy facilities?
- Are there measurable effects of the Fukushima accident on SWB?

Empirical Strategy

Life satisfaction (LS) regressions with energy costs, the energy mix and the location of energy facilities as independent variables:

$$LS_{irt} = a' \text{micro}_{irt} + b' \text{macro}_{rt} + c' \text{energy}_{rt} + \text{region}_r + \text{time}_t + e_{irt}$$

- Life satisfaction question: "All things considered, how satisfied are you with your life as a whole nowadays?" (11-point scale with 0 = extremely dissatisfied and 10 = extremely satisfied).
- More than 100,000 regionally disaggregated observations from 5 waves of the European Social Survey (ESS), 2002-2011, and the Swiss Statistics on Income and Living Conditions (SILC), 2009-2011.
- Data on energy prices, the energy mix, and the location of energy facilities from IEA/IAEA.
- Spatial matching using Geographical Information Systems (GIS).

Results

- Energy prices have significant negative effects on European citizens' LS.
- Effects above average are found in individuals from the lowest income quartile.
- Effects are strongest at times when required energy expenditures are high.
- LS varies with differences in the electricity mix across countries and across time.
- A greater share of solar & wind power is associated with greater LS at all levels of income.
- European citizens' LS was unrelated to the share of nuclear power before the Fukushima disaster and negatively related to the nuclear share after the disaster.
- Swiss citizens' LS depends on their proximity to nuclear power plants – in particular after the Fukushima disaster.

Project Team

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Research Interests

- Environmental & Resource Economics
- Economics of Well-Being

Teaching

- Resource Economics
- Competition Policy
- Umweltökonomik
- Verhaltensökonomik und Zufriedenheitsforschung

Publications

H. Welsch & P. Biermann (2014). Electricity Supply Preferences in Europe: Evidence from Subjective Well-Being Data, *Resource and Energy Economics* 38, 38-60.

H. Welsch & S. Ferreira (2014). Environment, Well-Being and Experienced Preference, *International Review of Environmental and Resource Economics*, forthcoming.