In Search of a Triple Win:

Assessing the impacts of energy policies on poverty and inequality

IEA Workshop: Social Impacts of Clean Energy Policies

Angela Picciariello

23 May 2023

IISD
International Institute for Sustainable Development

The EPT Inequality and Poverty dashboard

- Key question: what are the likely social impacts of certain energy policies?

- Starting point for the analysis: Energy Policy Tracker (over 1,000 energy policies in 30 countries, January 2020-November 2021, categorized according to climate impacts)

- Policies were grouped into new categories - relevant from a poverty/inequality perspective, e.g.:
  - Government support for EV charging infrastructure
  - Government support for energy efficiency or retrofitting in social housing

- Beyond the scope of the dashboard:
  - Detailed assessment of specific policies
  - Thorough analysis of policy impacts beyond socioeconomic ones (e.g. related to gender, race etc.)

Source: https://www.energypolicytracker.org/inequalities

Key findings from our work

- Governments have yet to learn how to design energy policies in a way that reduces not only carbon emissions but also inequality and poverty

- The poverty and inequality effects of energy policies must be assessed in the short, medium, and long terms, as they are likely to vary over time

- Context and nuances are key to socially progressive energy policies
  - Contextual factors are often behind differing impacts for similar policies
  - Policy design elements and broader complementary policies matter

Examples of policy summary assessments

Policy category	Expected impact on poverty	Expected impact on inequality
Government support for the purchase of households RE installation	**Poverty increasing (medium confidence)** In fully electrified high-income countries, residential RE installations can increase the electricity tariffs paid by lower-income consumers. **Poverty decreasing (medium confidence)** In middle- or lower-income countries where measures are targeted at non-electrified, rural areas, such policies can decrease poverty by lowering access costs (i.e. other generation options) and providing economic opportunities.	**Inequality increasing (High confidence)** In fully electrified high-income countries, residential RE installations mostly benefit higher-income households. **Inequality decreasing (medium confidence)** In lower- or middle-income countries where measures are targeted at non-electrified, rural areas, this access can decrease inequality.
Government support for energy efficiency programs in private housing	**Poverty decreasing (medium confidence)** There is likely to be a slight decreasing impact on poverty, as this policy generates additional green jobs in retrofitting homes and for regular maintenance of infrastructure (assuming these jobs are available to lower income workers).	**Inequality increasing (high confidence)** Policies for private homeowners are likely to be more accessible to higher-income households, while low-income homeowners and non-homeowners may experience time or communication barriers to access these programs. Over time, inequality increases with the costs of energy.
Government support for EV and hydrogen vehicle purchases, and use of EV charging infrastructure	**Neutral (high confidence)** The policies decrease the price of a household good which should decrease poverty. However, the large upfront costs linked to EV purchase are likely to create a barrier that prevents the low-income households to capture clear benefits from such support.	**Inequality increasing (high confidence)** Because the policies function by reducing the price of products that still require a large upfront investment, or home ownership in the case of charging installation incentives, they are more widely used by higher-income groups, thus increasing the gap between higher- and lower-income households.

Contextual factors often determine different impacts for similar policies

EPT Sectors	Mobility	Power	Resource	Buildings
Most common contextual factors (Sector specific)	• Public transport/bike/ conventional car ridership demographics and patterns* • Size and density of metropolitan areas; location of key resources (hospitals, jobs, government services) with respect to various transport options • Availability of alternative transport options for low-income communities • Income level makeup of car owners in the country/car ownership rates among lower-income households* • Location of vehicle manufacturers and labour intensity of the industry • Economic size of the car industry	• Degree of volatility of gas and electricity prices • Electricity/gas consumption patterns, and shares of households' income spent on electricity/gas* • Characteristics of the firms affected by gas/ electricity subsidies (e.g., size/energy intensity/type/ target consumers/ability to substitute factors of production) • Electrification rates/ demographics of the population with grid access/ reliability of electricity grids* • Share of renewables/fossil fuels/nuclear in the energy	• Extent of migratory nature of resource extraction work* • Location of resource extraction sites in relation to local/Indigenous communities • Nature of resource extraction activities (type of fuel extracted, short-term versus long-term projects)	• Income level of households accessing subsidies for energy-efficiency retrofits • Changes in energy costs over time, both affiliated and unaffiliated with the effects of the energy-efficiency programs • Income level/energy poverty level of the population living in social housing • Energy performance of the social housing stock • Rent market regulations (e.g., the existence of rent control policies) • Proportion of the population working in unsafe/under-heated/under-cooled environments

Contextual factors that are common to two or more sectors

- National income distribution
- Employment makeup of affected industries, especially skilled versus unskilled labour shares (EV infrastructure/EVs and conventional car manufacturing/fossil fuel/renewable power sector/extractive industry/remediation and clean-up industry/ renewable-energy installation)
- Country's broad economic situation and unemployment levels (both at local and national levels)
- Size of government investment programs
- Share of urban versus rural population and extent of rural poverty as opposed to urban poverty*
- Homeownership rates and distribution across the income scale
- Prevalent housing/building types*
- Tariff structure (gas, electricity, public transport fares)
- Infrastructure location (public transport, EVs charging/bike sharing, renewable-energy installations, hydro/nuclear installations, resource extraction sites)
- Extent to which businesses pass profits/losses on to workers/consumers
- Opportunity costs of the policy's government support as opposed to more generalized welfare support, and decisions by the government to reinvest savings into social welfare programs
- Average household energy spending*
- Extent of the informality of the job market*
- Current stock and state of infrastructure affected by government programs*

Policy Design and Complementary Policies can Mitigate Negative Social Outcomes

Policy design elements	Complementary policies
- Targeted incentives for low-income groups (including cash transfers and loans) - Rebates/incentives/subsidies being subject to income tiers and/or income caps - Spatial targeting, with priority for interventions in rural areas - Conditionality of government support to companies on obligations to provide consumer support for low-income groups and job retention - Progressive/phased implementation of policies over time - Inclusion of economically vulnerable groups, including local and Indigenous communities, in decisions to implement projects (e.g., consultations, compensation schemes)	- Targeted government incentives for low-income groups (including cash transfers and loans) - Job training/retraining for workers and clear employment pathways for workers in soon-to-decline industries - Tying the taxation of fossil fuels to the social costs associated with their production and consumption - Tying profits from resource extraction to increased wages for workers and social programs in local communities - Programs to improve education and consumer awareness in areas where the adoption of incentives is low - Revenue recycling (e.g., for fuel taxes) to programs targeting low-income groups - More progressive general taxation systems

Recommendations and conclusions

- Social outcomes assessment of energy policies is extremely complex and context-dependent….but
  - End support for *lose-lose policies* and scale up support for *win-win* ones
  - Adopt clean energy policies designed in a way that *mitigates* their potential detrimental effects

- Carry out a *systematic* assessment of the *long-term social and climate impacts* of energy policies
  - Case studies of national/regional applications can help
  - Ex-post assessments can support ex-ante analyses

Thank You!

Resources:
Energy Policy Tracker inequality and poverty dashboard
https://www.energypolicytracker.org/inequalities

IISD publication on the poverty and inequality impacts of energy policies
https://www.iisd.org/publications/report/covid-19-impacts-on-clean-energy-transition-inequality-poverty

For more information:

Email: apicciariello@iisd.org

Policy design in practice: the Green Homes Grant Scheme, UK

- **WHAT:** buildings retrofit policy targeting low-income homeowners (launched September 2020 but scrapped earlier than planned)
- **HOW:** vouchers worth up to GBP 5,000 to homeowners and up to GBP 10,000 to welfare beneficiaries in England to make their homes more energy efficient
- **EXPECTED IMPACT**: reach up to 650,000 homes and create up to 82,500 jobs over 6 months
- **TARGETING**: low-income households exempt from the whole cost of the intervention
- **EX-POST ASSESSMENT:**
  - Jobs: 5,600 jobs over 12 months (recruiting and training installers required much longer than planned), only half of which benefitted low-income households
  - Households' reach of incentives: in spite of targeting, only 15,182 out of 41,300 measures installed in low-income households