Energy vulnerability: an exploratory cross-national comparative research

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Workshop DEMAND – VERSO

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Methodology

Based on previous research projects' results on fuel poverty and governance (collective book published in French in 2014; Energy and Justice in the EU and in Asia « L'Europe en formation », Winter 2015/2016):

- No equal recognition of the fuel poverty issue in Europe
- No common definition of the fuel poor : the definition reflects the national bias, stereotypes and social representations of the poor, social assistance recipients etc.
- Difficulties to identify adequate target criteria
- Distinction or not of the fuel poverty issue from the poverty issue
- Invisible categories

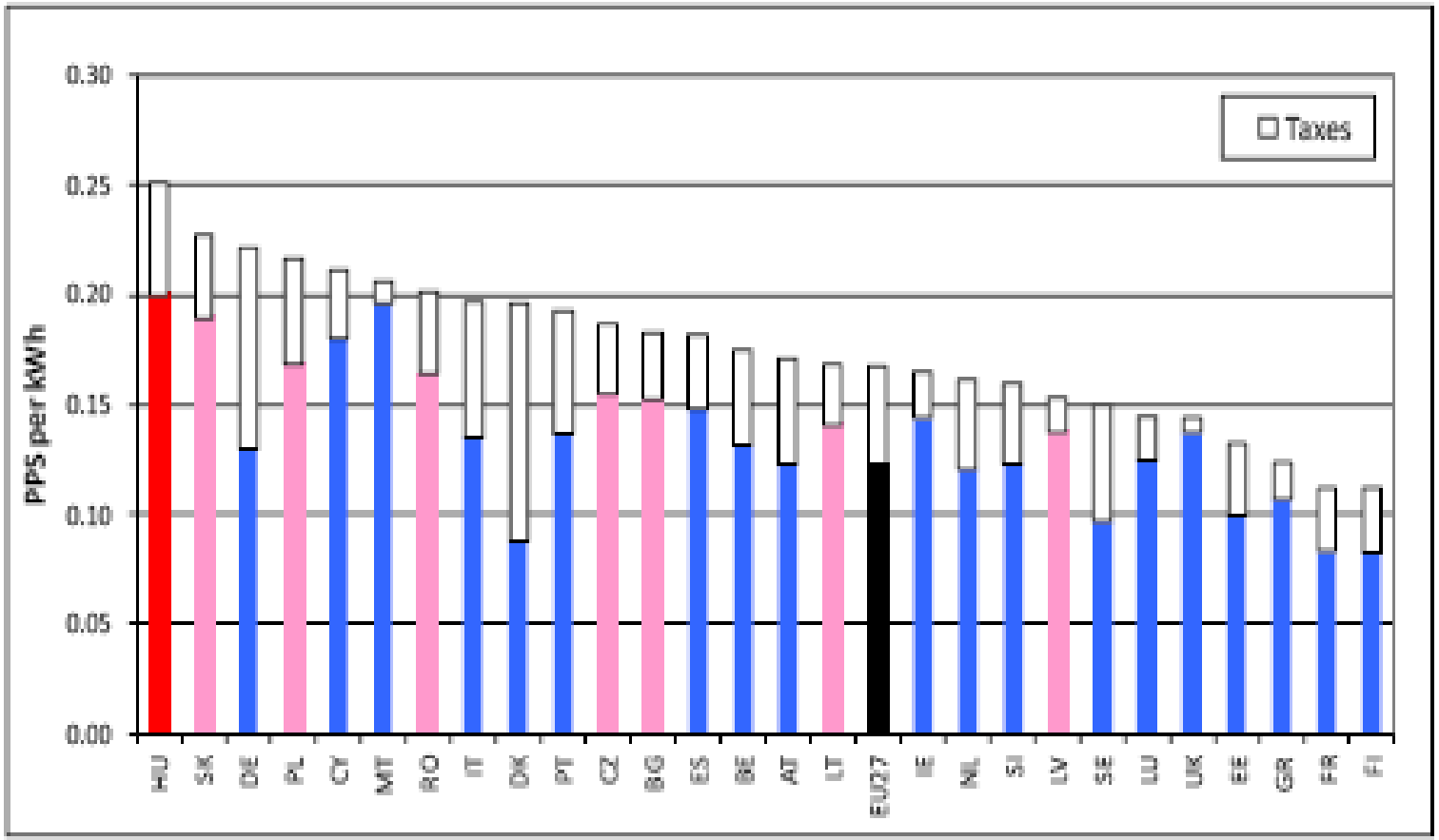
Beyond poverty issues

- The issue of poverty is central but is not enough to understand a more complex reality of energy poverty in the UE (ex. Hungary) and outside the EU

The Hungarian exemple

- **Energy prices** close to western levels: Energy poverty also due to a lack of financial resources (**low income** levels); **not energy-efficient** buildings
- The original English criterion cannot be applied to Hungary-qualitative definition
- Social fracture – long lasting poverty and geographical disparities
- Privatisation did not force prices down (1995), liberalisation neither
- Liberalisation has not changed the territorial nature of distribution
- Western investors have replaced the **public** monopoly by **private** monopolies
- But nothing lasts forever: FIDESZ came to power in 2010 (political right)
- Anti-European, pro-sovereignity rhetoric; control of the media, cronyism
- Stigmatisation of the poor and of the Roma minority, radicalisation, centralisation
- 2013-2014: direct State interventions on energy prices (-25%) **without taking into account consumption and income levels of households**
- **Flat tax, abolition or decrease of social assistance**: populism and demagogical decisions but new victories in 2014 for the FIDESZ – the role of energy policy
- Foreign investors are being pointed a finger at: **renationalisation** is achieved (gas) and in progress for electricity - Back to the eighties? Anti migrants / refugees propaganda / referendum. Back to the thirties? A new populism?
- Hungary, Poland, the Brexit… – the European rules don't last forever (and democracy neither)

Average price of electricity for domestic consumers (2007 – 2011) taking purchasing power parity into account, source Eurostat



Poor? Vulnerable?
Also a question of terminology

Pauvre / *Poor* latin word *pauper* from *paupertas* (pauvreté / poverty)

Paupérisme is a word borrowed by French from English (1823), from latin *pauper* (poor)

- **Semantic field of the social condition**

Précaire / *precarious* from latin *precarius* « obtained by prayer » (1336); Demand (Request) sent to the gods - *Prier / Pray* from latin *precari* and *precaria* – « prayer »

- **Religious** and also legal semantic fields

- *Démuni:* latin *munire* « fortify », « défendre » « defend », préf. -*dé* « defenseless »
- *Fragile:* from classic latin *fragilis* (fragile, breakable) from *frangere* – « break » « briser »
- *Vulnérable:* from latin *vulnerabilis* (from *vulnus* – « blessure » « wound ») : « who can be hurt »

- **Vulnerability's semantic field is not only poverty**: it can also arise when people are isolated, insecure and defenceless in the face of risk, shock or stress (**broad sense**).
- **The antonym of *vulnerability* is *capacity* or *capability*** (Amartya Sen's capabilities economic theory), which can be described as the resources available to individuals, households and communities to cope with a threat or to resist the impact of a hazard.

The term *vulnerability* can be used more easily in various contexts

Energy vulnerability

- Enlarge the comparison of fuel poor (how are they named and the phenomenon?) categories based on micro-dimensions to non EU countries in Asia, Latin America in an exploratory research based on
  - Qualitative and desk research
  - Seminars

- A more complex reality of energy poverty outside the EU linked to multidimensional factors
  - **Economic**: income poverty and inequalities
  - **Social**: family structure, segmentation, legal or illegal tenure, social demand
  - **Geographic**: urban-rural divide, density of the town centers, urban spread
  - **Demographic**: urbanisation rate, low density area, population displacement linked to conflits or energy projects (large dams in Amazonia or on the Mekong)
  - **Technical**: unreliability of the energy supply system, inability of the infrastructures to keep up with the increasing demand
  - **History, traditions and culture** : traditional and cultural lifestyles
  - **Political**: political interruption of supply, rationing, lack of adequate infrastructure, housing, social and energy policy, inadequate regulation, clientelism
  - **Institutional**: unclear responsibilities, unclear market reforms, corruption
  - **Path dependence -** to explain the continued use of a product or practice based on historical preference or use

More blurred categories

- Because of the multidimensional factors explaining the problem of access to electricity = energy vulnerability rather than energy poverty

- More blurred categories:
  - Connected and consuming-able population can have difficulties to access electricity (Latin America)
  - Officially connected populations may not be able to consume
  - Non connected populations to the grid may consume electricity (Argentinian land owners or thanks to connection to neighbours (Burma))
  - Disconnected used to have access but either disconnection by the provider or self-disconnection

Micro-dimensions

- Studying energy vulnerability reflects:
  - What is energy for:
    - Collective use
    - Individual use
    - First meets basic and essential needs, then increases comfort
  - Urban social polarisation
  - Social hierarchies
  - Social representations

Macro-dimensions

- Illegal connections may be tolerated by the authorities or they may be fought against by the authorities and the providers
- The lack of coherent and transparent institutional, governance and policy framework (ex. new solutions but path dependence)
- Electricity provision, subsidies and tariffs are instrumentalised :
  - For political purposes
  - For security purposes
  - For industrial / economic purposes
  - For social purposes

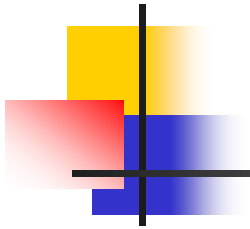
A first comparison of energy access in Africa and in Europe

	Africa	Europe
Energy crisis	Lack of generation capacity or misuse of existing capacities Underdevelopment of grid and interconnection inside a country and between states Lack of efficiency of the installed infrastructure (underinvestment, lack of maintenance, ageing, international subventions are often lost because of high degree of corruption) Negative impacts of oil and gas price volatiliy for exporting countries on the their social consensus + for importing countries Regional conflicts	Overcapacity Interconnection in progress Restructuring Lack of profitability of investment in traditional energy power plants Specific situation of nuclear power (Germany vs France) Negative and positive impacts of oil and gas price volatility on the balance of trade and capacity of investment
Energy Resources	Uneven availability of resources but strong renewable energy potential in most countries at local level	Uneven availabity of resources but strong renewable energy potential in most countries at local level
Grids	Small, fragmented, centralized = politicians determine the supply priorities = priority to urban centers and especially the districts where local elites live Technical and non technical losses : very high non technical loss (a social phenomenon in growth) Equipment theft	Gradually interconnected, all consumers served Limited technical and non technical losses (very few non technical losses comparing with Africa)
Sectoral governance	Mainly public monopolies with some evolution towards privatization	Increasing liberalization, privatization and competition
Political governance	State driven No supra-national regulatory power because no political willingness to give up a part of national sovereignty Political clientelism Collusion of interests between private and public actors Political and personal interests are given priority over the general interest (mostly despotic regimes operating in a family or clan manner.) Corruption	Multi-level governance Supra-national regulatory framework/incentives but sovereignty of the national state
Pricing policy	Low level of payment (connection costs too high, informal connection, inadequate billing system) Subsidies and gap between the production costs and the tariff	High level of payment with procedures to collect debts

Consumption patterns	**No universal access : 32% of electrification rate, between 621-550 million African lack electricity access (big difference between urban and rural districts)** **Chaotic urban growth in most countries (but not all, Rwanda for ex. is different) :** **Chronic shortages even in urban centres, even for well off customers** **Rationing policy** **Limited access to electricity**	**Universal access with some exceptions (fuel poor, non connected populations) : 54 million households can' afford electricity and warmth or 11% of the European population** **Exceptional supply interruptions mainly due to bad weather (not only, cf. power failure 04/11/2006)** **Open access to electricity except for in debt consumers**
Social inequalities	**High income populations are privileged and tend to be connected and supplied (even if they suffer from supply shortages), which represent 10% of the population** **Ability of the high income population to invest in emergency generation systems (polluting and expensive)** **Among the 40% of the poorest population, the electrification rates are less than 10%**	**Fuel poor people and low income have more difficulties to afford electricity and warmth : 24.4% of them can't afford electricity and warmth**
Territorial inequalities	**Very low electricity access in rural areas : 80% of the population without electricity live in rural areas** **Electricity access rate : less than 1% in some countries (such as Republic of Congo, Ethiopia, Niger, Rwanda) to 52% in South Africa** **Average consumption level in rural areas : 50-100kWh per capita and per year** **Urban areas : rapid urbanisation is not up to the demand**	**Part of low income households are to be found in rural areas** **Invisibility of many fuel poors (limit their energy consumption (sometimes they even don't heat) but pay their bills)**
Consumption levels	**On average between 225 and 317 kWh per capita per year without South Africa** **The poorest resort to traditional sources of lighting, heating and cooking and pay a high cost for them.** **The level of connection rate is low even in electrified areas between 25 and 50%** **Consumption via informal consumption system more or less organised**	**20% more than the African average** **Consumption levels are limited by the available income dedicated to energy expenditure** **Possible informal consumption on an individual basis**
Level of expenditure	**For 500kWh it represents 40% of the available income in 15 countries**	**Between 3.5% and 10% of the available income for electricity and warmth.**
Management of non payment	**Increasing disconnection rate** **Introduction of pre-payment in some countries (South Africa, Nigeria)**	**Increasing disconnection rate** **Procedures to collect the debt** **Introduction of pre-payment meters in some countries (UK)**

Conclusion and perspectives

- To understand the complexity of the energy vulnerability, it is necessary to:
  - deepen research on micro-dimensions of energy vulnerability and to cross-cut quantitative and qualitative indicators
  - add a macro-dimension including :
    - A comparison of the governance systems (type of regime, political system, institutional organisation)
    - A comparison of the electrification policy (as tool of domination/legitimation/equity etc.)
    - A comparative analysis of the electric crises



Thank you for your attention