

MEASURES TO TACKLE THE COVID-19 OUTBREAK IMPACT ON ENERGY POVERTY: PRELIMINARY ANALYSIS BASED ON THE ITALIAN AND SPANISH EXPERIENCES

Paolo Mastropietro ^{a,*}, Pablo Rodilla ^a, Carlos Batlle ^c

^a Instituto de Investigación Tecnológica, Universidad Pontificia Comillas, Sta. Cruz de Marcenado 26, Madrid, Spain.

^c Florence School of Regulation, Florence, Italy and MIT Energy Initiative, Cambridge, US

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The impact of Covid-19 outbreak on energy poverty

Many definitions can be found in literature for energy poverty, but all of them point at an unbalance between the economic resources needed to cover the basic energy needs of a household and the income of the family living in it. This unbalance may be due to different causes, from low household incomes to inefficient building and appliances, or a combination of them (EU EPO, 2020).

The Covid-19 outbreak that is currently spreading worldwide is exacerbating energy poverty issues. Several countries are trying to contain the epidemic through confinement measures that require people to stay home. This measure has a two-fold effect:

- The energy needs of residential consumers grow. Academic literature on energy efficiency comprehensively studied the impact that occupancy profiles have on household energy demand (Motuziene and Vilutiene, 2013; Cuerda et al., 2019). In this case, consumptions are likely to rise due to both augmented conventional demand (space

heating, hot water, cooking and dishwashing) and new energy demand (as the one related with teleworking).

- The confinement, or the associated measures, provokes a strong contraction in the job market. Many people are losing their employment, either temporarily or permanently, and many families are seeing their income abruptly decline.

This combination of factors obviously aggravates the usual problems related with energy poverty, by increasing the difficulty in paying energy bills and by enlarging the discomfort of living in households that experience inadequate levels of essential energy services. Several governments have introduced specific measures in the emergency acts issued during the epidemic to tackle this Covid-19-induced energy poverty. The most widespread intervention is the postponement of any supply disconnection in case of non-payment. This article focuses on the measures implemented in Italy and Spain, the two current epicentres of the epidemic in Europe; it highlights the key challenges that arise and outlines innovative alternatives to face them, beyond disconnection bans.

This article has been elaborated while facts were still developing. The main objective of this communication is to critically review some pioneering experiences and to alert the academic community on this urgent matter.

The energy poverty context in Italy and Spain

Italy and Spain are the two countries that suffered the strongest impact of the Covid-19 virus in the initial phase of the pandemic out of China (Johns Hopkins University, 2020). Furthermore, these two jurisdictions have a comprehensive pre-existing legislation on

energy poverty. Both countries rely on social tariffs for electricity and gas¹. Vulnerable customers can enrol in these programmes and benefit from either discounts (Spanish social tariff for electricity) or transfers in cash to cover part of their energy bills (Spanish social tariff for gas and Italian social tariffs for gas and electricity). Customers' vulnerability is defined according to specific socio-economic conditions. As an example, Table i shows the annual income² and consumption limits for different vulnerability categories and living conditions used for the Spanish social tariff for electricity. More than 1 million households benefited from the social tariff in 2018, with a total budget close to 200 million €.

Table i. Socio-economic thresholds for enrolment in the Spanish social electricity tariff; own elaboration based on information from MITECO (2020)

Category	Discount	Pensioners	Households						Large families (>2 children)
			No children		1 child		2 children		
Vulnerable	25%	Minimum pension	11279 €	*15039 €	15039 €	*18799 €	18799 €	*22559 €	No income restriction
Severely vulnerable	40%	7520 €	5640 €	*7520 €	7520 €	*9340 €	9340 €	*11279 €	15039 €
Potential for social marginalisation	100%	Severely vulnerable customers who are enrolled in a social service system							
Annual consumption limit (with discount)		1932 kWh	1380 kWh		1932 kWh		2346 kWh		4140 kWh
* Special cases (disability, gender violence or terrorism victims, dependence, single-parent families)									

As a consequence of the application of confinement measures, both Italy and Spain are experiencing a significant loss of employment. In the first three weeks of the epidemic, Spain suffered a contraction in the labour market much larger than the one that the country

¹ These social tariffs have very different designs. Further information can be found on the websites of the National Regulatory Authorities of Italy (ARERA) and Spain (CNMC).

² The annual income considered in the enrolment process is the one from the last income statement; this feature impedes a prompt access to the subsidy in case of loss of employment.

registered in 2009, in the aftermath of the economic crisis (Figure 1). Out of 19 million employed persons, more than 800 000 jobs were lost, more than 300 000 people applied for unemployment benefits, and 600 000 people suffered a temporary suspension of their labour contracts, although the real figure on the latter could exceed 2 million people (El País, 2020)³.

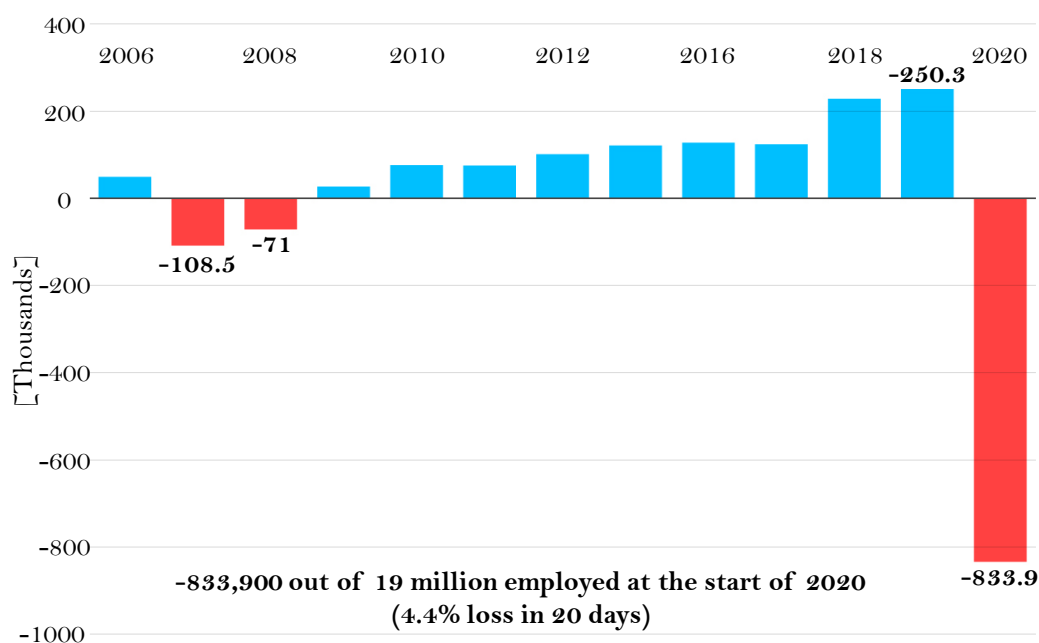


Figure 1. Variation of employed persons registered in the social security system in Spain (El País, 2020)

In the energy sector, both countries experienced a significant reduction in total energy demand, with a plunge that reached almost 10% with respect to the same period in 2019 for electricity (La Repubblica, 2020; REE, 2020). Nonetheless, this reduction has been driven by the industrial and commercial sectors, while residential demand is expected to grow as a result of the confinement (ANSA, 2020). This effect can be confirmed through the data corresponding to the residential electricity demand in Spain. Figure 2 shows the load from consumers enrolled in the default tariff (the so-called PVPC) for households, which

³ Data for Italy are not available at this writing. The United States, in the same period after the start of the outbreak, suffered the loss of more than 700 000 jobs (New York Times, 2020).

represent almost 40% of all residential demand in the country. The load profile has been depicted graphically for the first Wednesday of April in 2019 (normal conditions) and in 2020 (epidemic conditions). The impact of confinement on the demand profile is evident; the total daily energy demand increased by 12% for the 2020 day⁴.

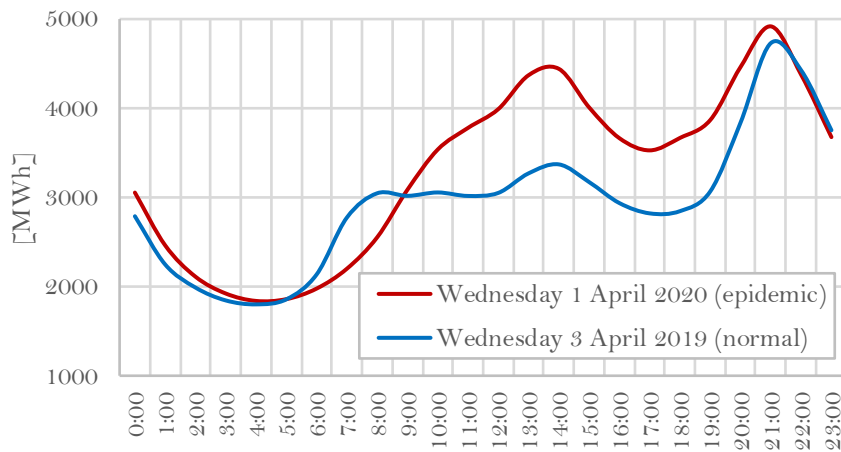


Figure 2. Load profiles for households under the Spanish default electricity tariff, PVPC and comparison between 2019 and 2020; data from esios (REE, 2020)

The price of electricity and gas decreased during the outbreak, as a result of low demand and low oil prices in international markets due to the current commercial conflict within OPEC (The Economist, 2020). However, this price reduction only affects the energy component of electricity and gas tariffs, which, nowadays, accounts for less than half of the final bill⁵ and it may not be perceived by consumers in the free retailing market with fixed prices.

⁴ In order to improve the comparability, the two days chosen by the authors had almost the same temperature range, 6-14 °C (AEMET, 2020); thus, no temperature correction is required.

⁵ According to ACER (2019), the energy component only accounts for 52% of residential electricity bills and 40% of residential gas bills in Italy, with even lower values for Spain (44% for electricity and 37% for gas).

Main measures addressing the energy poverty emergency

Both Italy and Spain introduced measures to guarantee residential energy supplies almost at the same time as the emergency acts imposing confinement. The following list resumes the main interventions in the two jurisdictions (ARERA, 2020; MITECO, 2020).

- As in many other jurisdictions, both countries prohibited residential electricity and gas supply disconnections for non-payment⁶, by postponing the entire regulatory process from the first outstanding bill to the eventual disconnection during the emergency state. When the emergency will be over, retailing companies will have to notify once again all non-payments to their clients, who will have the opportunity of settling their debt (also with the possibility of dividing it in instalments, as in Italy) without suffering any disconnection.
- Both countries postponed the deadlines for the renewal of their social tariffs. The latter must be renewed every year in Italy and every other year in Spain. However, all enrolled customers will have their social tariffs automatically renewed until the end of the emergency state.
- At the very beginning of the national outbreak, Italy postponed all energy bills (together with bills for water and waste management) during the emergency state in the eleven municipalities that were initially isolated. These arrears will be paid in instalments in the bills issued after the end of the emergency state. This measure was not extended to the rest of the national territory when the epidemic expanded. It must be remarked that

⁶ In Spain, this applies only to first homes. It must be underlined that, when these measures were introduced, many retailing companies were already implementing emergency programmes that already contained the postponement of disconnections, among other support measures.

this allowance lacks any targeting strategy and the financial aid can reach many households that do not need it.

- Spain enlarged the pool of customers eligible for the electricity social tariff to those self-employed persons who, due to the outbreak, had to stop their activity or saw their invoicing reduced by more than 75% compared to the average invoicing in the previous six months, subject to some specific income thresholds (higher than those presented in Table i). These customers can opt for a fast-track application, with simplified information requirements.
- Spain temporarily suspended any upward update of the energy component of the default tariff for gas during the emergency state.
- Italy created a 1.5 billion € “COVID account” in order to guarantee the financial stability of energy retailing companies. Those retailers affected by the emergency measures (mainly those concerning unpaid bills) could apply for advanced payments from this fund to cover unbalances in their accounts that exceed 3% of the normal billing for that period of the year. Spain did not foresee any specific financing line to support its measures⁷.

Main findings of this preliminary analysis

The Italian and Spanish pioneering experiences show how the Covid-19 outbreak and the consequent confinement exacerbated energy poverty issues, by destroying employment and

⁷ The Spanish social tariff for electricity is totally financed by the largest retailing companies in the market (a feature that has been appealed by these companies in Spanish and European courts). Therefore, the lack of a specific budget for these measures could be highly controversial. In this context, an interesting experience can be found in Texas. The Texan regulator suspended electricity supply disconnections for non-payments during the Covid-19 epidemic emergency (PUCT, 2020) and introduced a surcharge in the tariff meant to cover unpaid bills from those customers who can prove that they have been negatively affected by the outbreak.

increasing residential energy needs. However, they also provide regulators all over the world with worth-considering benchmarks to tackle such Covid-19-induced energy poverty. The main findings that can be drawn from these experiences are listed hereunder.

- If citizens are legally required to stay home, their basic residential energy needs must be guaranteed, especially if their income has been negatively affected by the outbreak and they have difficulty in paying energy bills. Many countries have social tariffs in place in order to protect vulnerable customers. However, the time-consuming administrative process to enrol in these schemes does not allow the prompt reaction required during an emergency. For this reason, it is essential to suspend any disconnection in the supply of energy due to non-payments, at least until the end of the state of emergency.
- The suspension of disconnections can produce imbalances in the accounts of energy retailers. Regulators must avoid that this affects the short-term liquidity of these companies in a period when the service they provide is essential. This can be achieved through the creation of specific funds, either through the state budget or through other mechanisms, that can relieve the financial burden from retailers through advanced payments.
- During the emergency state, there is no time to target the suspension of supply disconnections according to socio-economic parameters. However, this measure should not imply an implicit postponement of energy bills for all end-users. In Italy, for example, retailers are required to delay the entire process to disconnect customers for non-payment until the end of the emergency state and then to give these customers the opportunity to pay their debt in instalments in the subsequent bills. The Italian Regulator had to issue a press note (ARERA, 2020) specifying that this intervention should not be interpreted as a suspension of energy bills. However, from a purely theoretical point of view, the measure is indeed equivalent to a voluntary suspension,

since customers can stop paying energy bills during the Covid-19 emergency without facing any consequence. In order not to unnecessarily increase the financial burden on retailing companies and/or on the specific funds created to cover the unbalance, some sort of economic penalty could be introduced to discourage non-payments from customers who cannot demonstrate a deterioration of their economic conditions due to the Covid-19 outbreak.

- Those jurisdictions relying on social energy tariffs can enlarge the pool of eligible customers to include those who suffered the economic consequences of the outbreak or can speed up the enrolment process through simplified requirements. However, regulators must always guarantee a proper targeting of the financial aid, identifying those customers whose ability to pay energy bills is actually being affected by the outbreak. An interesting strategy is to analyse incomes during a pre-defined period of time in the past and to set thresholds to the income itself and to its reduction due to confinement measures (as in the Spanish aid for self-employed people).

References

ACER, Agency for the Cooperation of Energy Regulators, 2019. ACER Market Monitoring Report 2018 – Electricity and Gas Retail Markets Volume.

AEMET, Agencia Estatal de Meteorología, 2020. Statistical data from the website http://www.aemet.es/es/datos_abiertos/estadisticas.

ANSA, Agenzia Nazionale Stampa Associata, 2020. “*Andamento dei consumi di energia elettrica durante emergenza Covid-19*”, 31 marzo 2020.

ARERA, Autorità di Regolazione per Energia Reti e Ambiente, 2020. Information from the website <https://www.arera.it/it/elenchi.htm?type=stampa-20>

Cuerda, E., Guerra-Santin, O., Sendra, J.J., Neila González, F.J., 2019. Comparing the Impact of Presence Patterns on Energy Demand in Residential Buildings Using Measured Data and Simulation Models. *Building Simulation*, vol. 12, pp. 985-998.

The Economist, 2020. “*Saudi-Russian Price War Sends Oil and Stock Markets Crashing*”, 9 March 2020.

EU EPO, European Union Energy Poverty Observatory, 2020. Information from the website <https://www.energypoverty.eu/>.

Johns Hopkins University, 2020. Coronavirus Resource Center, information from the website <https://coronavirus.jhu.edu/>.

El País, 2020. Several articles: “*Claves sobre la debacle laboral provocada por el coronavirus*”, 2 April 2020; “*La crisis del coronavirus provoca la pérdida de 900.000 empleos desde el inicio del estado de alarma*”, 2 April 2020.

MITECO, Ministerio para la Transición Ecológica y el Reto Demográfico, 2020. Information from the website <https://www.bonosocial.gob.es/>.

Motuziene, V., Vilutiene, T., 2013. Modelling the Effect of the Domestic Occupancy Profiles on Predicted Energy Demand of the Energy Efficient House. *Procedia Engineering*, vol. 57, pp. 798-807.

New York Times, 2020. “*Decade of Job Growth Comes to an End, Undone by a Pandemic*”, 3 April 2020.

PUCT, Public Utility Commission of Texas, 2020. Public Utility Commission of Texas Acts to Mitigate Covid-19 Impact.

REE, Red Eléctrica de España, 2020. REData and esios from the websites <https://www.ree.es/es> and <https://www.esios.ree.es>.

La Repubblica, 2020. *“Effetti Covid-19, industria ferma Consumi elettricità e gas in frenata”*, 19
March 2020.