

NAME : GOUTALAND Antoine  
COUNTRY : France  
REGISTRATION NUMBER : 620210456

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Solidarity, understood as the preservation of fairness through change, is not doubt a quandary for contemporary electric network design. As a matter of fact, low-carbon pathways foster the design of alternative energy systems. But energy justice scholars have shown that energy systems generate unfair situation and they call for alternative decision making. The research project, led by French TSO RTE and the Center for Management Science at MINES Paris PSL, aims studying the links between the design of electric networks and fairness issues. In order to model them, we consider norms as designed object having the functions to enable efficient action and propose fair allocation.

The special report stresses practical blinspot of the research program we proposed in the article raising the following question : how to implement fairness logis and who is to responsible for them ? I partially answer this question using a case study given by the critical European electric shortage situation for Autumn 2022 and Winter 2023.

#### *Modelling a common peril : black-out*

For various causes, France may suffer from electric supply shortaged in Autumn 2022 and Winter 2023, opening the possibility for a generalized black-out. We designate generalized black-outs as common perils i.e. a situation which no actor have interest in seeing happening and requiring rescue action which makes at least part of the actors interdependent. We aim to assess the fairness for recue action measures found in French public debate.

#### *Press reviews and theoretical underpinnings*

Public debate proposes two ranges of measures :

1. Rationing. The first range is rationing measures. The has issued rules to forbid some electricity uses and called citizens to self-ration their energy consumption. This range has been proposed in the literature in energy sufficiency. Scholars have tried to distinguish needs from desires and call for collectively decided self-restriction preserving need. However, recent empirical studies and historical analysis show rebound and side effects event in collectively decided sufficiency measures fearing for both an arbitrary final situation.
2. Price-signal. The second range of action relies of price signalling. As power supply is scarce in times of consumption peaks, prices should rise for consumers to have a rational behavior towards consumption. Two schools here devide economists and consultants, both in public debate and in the liteature : dynamic tariff and speicif peak-pricing devices. The literature relie more and more on behavioral analysis to calibrate action. However, price signalling measures favor flexible consumer which have ways to substitute the consumptions to other enegy vectors.

#### *Conclusion : fair and efficient management with compensating losses*

We run simulation on rationing and price-signal measures showing that they have difficulties in providing both efficient and fair rescue action. Applying a maritime law allocation rule called the « general average », which states losses due to rescue should be compensated proportionnally to the benefit of preserving the grid's integrity, a legitimate captain can provide efficient action, and TSOs are good candidates to operate. A distinct allocation authority is still to be designed to account for the heterogeneous benefits of preserving electric network's integrity.