



THEME WORK

SUB-THEME:

ECOLOGICAL MACROECONOMICS AND TRANSITION

TITLE OF WORKSHOP

Energy Transition and Degrowth Paradigm



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The transition towards smart grids and the materialisation of new ways of life

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PAPER ABSTRACT: The 'Smart Grid' is a strange object, not yet stabilised, around which many different interests are crystallising. Smart grids are supposed to improve reliability and efficiency of the electricity network while integrating renewables. Many different actors are investing in the electricity grids in order to integrate intermittent renewables and distributed production to the electrical grid, and to strengthen demand side management. Actors' interests are not always aligned and nobody knows how these interests will be translated in material infrastructures. Engineers dream about a complete automation of the grid that would balance production and consumption at each moment. Economists think that the increase of available information will improve the efficiency of the actors, including the end users. The paper expands first on the transition towards smart grids in a degrowth perspective.

The second part focuses on the users and how they could become active. Besides efficiency, reliability and renewables, energy conservation (i.e. degrowth of energy consumption) is absent. However, all the sensible scenarios about future energy use require an absolute decrease of energy consumption. Today the future of smart grids is not thought in a radical approach since it is the development of the current grid.

The transition towards sustainable electricity production and consumption needs to be framed in a degrowth approach. Many fictions are supporting the development of the smart grids. Some will be realised whereas other will stay in the sky of ideas. Electrical vehicles are seen as batteries of the network. However, with the raise of rare earths as a new geopolitical stakes, electrical vehicles and other 'green technologies' will face important challenges. Consumption is envisioned as something that can be steered through signals to users or directly to appliances. However, the capability of displacing the time of use does not seem to expand beyond 10%. Smart meters are supposed to help users to save energy. However, recent studies (Energy Demand Response Project) doubt about this possibility. In emphasising the need to rethink the ways of life, degrowth helps point to different issues as the required resources and the capability of users to become 'active'.

Smart grids have to be considered as a plurality of possibilities. The case of cities is very different from the countryside one. Microgrids in which production and consumption are nearly balanced are an interesting way to meet the requirement of a degrowth of energy consumption. As the stockage of electricity is costly, electricity should be consumed when it is produced. Electricity would gain being considered as a flux rather than a stock always available. There is no general way of development, but some principles should however guide the materialisation of the grids: decrease the electricity consumption, consumed when produced, use first local sources, free access to the consumption data. This last point is developed in the second part of the paper.

The second part focuses on the case of the smart metering, which will be imposed in many European countries. Their promises, failures, dangers and opportunities are described. Beyond technological and economic fictions, I explore the conditions under which smart grids could be appropriated by users. I suggest



that users should have free access to their consumption data, so that a sort of open source movement could develop. The appropriation of the electricity production and consumption requires the possibility to understand and manipulate the different objects integrated into the grids. I conclude thus with an alternative socio-political fiction in which active users participate to the materialisation of functionalities, usages and meanings of the new grids.



Combining Efficiency, Sufficiency and Lifestyle Changes: the Case of Zero Energy Buildings.

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Even in an overall steady or shrinking economy, certain investments in a green infrastructure are necessary and advisable. This is especially the case with so-called passive houses: buildings that require no energy inputs for heating, cooling and powering. Since buildings are responsible for about a third of all energy consumption in countries such as the US, interest in the passive house technology has been rapidly rising over the past twenty years, and so has the knowledge how to design and build them. There are about 25,000 passive houses built around the world, majority of those in Europe. Germany and Austria are the world leaders in the number of such houses as well as in the associated technical expertise.

The developing world and the global north present different opportunities for the wide adoption of the passive house technology, as in both paces the demand for new housing is expected to grow. In the developing world the demand is driven by growing population, especially young people seeking to form families. In the rich global north, especially the US but also Europe, the demand for urban homes is driven by several factors: the aging population eager to move from suburbs to cities, the clearly unsustainable suburban developments, and the changing values and lifestyles among young people. Passive houses, with their zero energy demand on the occupants, is an obvious choice, and should be strongly supported by public policies.

But this anticipated real estate boom offers opportunities beyond the simple energy efficiency argument that this technology represents. Since the development of this innovative technology has brought together some of the most creative communities of professionals, it also offers an opportunity to re-think the lifestyles of their future occupants. The current model of a flat with individual private spaces suitable for all kinds of lifestyles, focused on individuality, and implicitly based on the idea of private consumption, is just as unsustainable as the current models of building construction. What is needed is a new model of a combination of private and shared public spaces and access to life amenities. Such buildings will require smaller flats, develop more communal interaction, and facilitate civic engagements. Many of the leaders in the passive house movements are missing this opportunity to rethink the buildings as conduits for new types of lifestyles and new types of values, focusing instead on the energy efficiency alone.



Transitions towards a post-carbon society: redistributive impacts and everyday life

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PAPER ABSTRACT: The transition to a ‘post-carbon’ society through a degrowth process cannot be achieved by an increase in energy efficiency alone or by changing government policies, but also requires far-reaching transformation in lifestyles, consumption patterns, and forms of urbanization, along with other features of social organization. The argument presented here is the result of a research project focused on the so-called demand-side of the pathways to European ‘post-carbon’ societies by emphasizing their socio-cultural dimensions. Three scientific approaches are then combined under the overall perspective of a degrowth phase and a “culture of sufficiency”:

- social-anthropological history of technical developments,
- social-ecological approaches to everyday life and sustainable consumption patterns,
- social change and social movement research concerning creative (innovative) initiatives and communities.

In addition, two other regulatory ideas are incorporated in the project.

Firstly, that the reduction in fossil fuels consumption will eventually have redistributive impacts, whose social scope can be assessed by means of an analysis of the relationship between ecological footprints and carbon footprints, and social stratification. Secondly, that the transformation pathways are indubitably influenced by the individual history and culture of each society, and that means that idiosyncrasies and peculiarities should be detected and taken into account. For this reason, the above-mentioned approaches will be combined using methods of intercultural comparison and using foresight methods in order to obtain distinct ‘visions of the future’ of a ‘post-carbon’ society in diverse local contexts -where cultural crystallization points can be identified- in Spain and France, with a main focus on the metropolitan areas of Paris, Barcelona and Valencia. The fundamental objective of the project is to facilitate behavioural change and support public policies about climate change and de-carbonization by providing a new analytical framework concerning phenomena which could aid or support the aforementioned transition within civil society: social and intellectual movements, citizens’ initiatives, changes in lifestyles, perceptions and attitudes of the general public or of important sectors of the same.

This means generating information along three axes: a) analysis, through case studies, of localized phenomena that are active catalyses, demonstrations of civil society’s capacity to take the initiative and to formulate propositions; b) an exploration of the values, attitudes and behaviors of the population as a whole which can be connected with the aforementioned elements of change, empowering or disseminating their effects; c) taking into consideration cultural characteristics: our purpose is to elaborate a specific discourse about the transition towards a post-carbon society as determined by the conditions found in different societies (and, as a collateral aim, to indirectly test the value of the hypothesis according to which the “Mediterranean way of life” could become a socio-economic factor that would make sense in a post-carbon society).

To meet these objectives several social research techniques will be used, both quantitative (surveys, secondary sources, and other existing statistical data analysis) and qualitative (in-depth interviews, sociological involvement, documentary analysis, case studies, foresight methods). In addition to social empirical research, methods of historical retrospect and hermeneutic-philosophical interpretation will be used in order to highlight the cultural dimensions of the transition processes.



TACKLED ISSUES:

The smart grids integrates more resources and decentralized productions. The great transition needs a new imagination. In any case all the sensible scenarios about future energy use require an absolute decrease of energy consumption. Namely a co-evolution between smart grids and our consumptions. Micro - grids in which production and consumption are nearly balanced are an interesting way to meet the requirement of a degrowth of energy consumption. As the stock of electricity is costly, electricity should be consumed when it is produced. Electricity would gain being considered as a flux rather than a stock always available.

In order to adapt our activities to the available energy we need an access to the disaggregate value of consumption (I[^]STEP ACCESS TO INFORMATION AND DATA→ II STEP: CONSUMPTION REDUCTION→ III STEP MANAGE THE DISTRIBUTION OF THE PRODUCED ENERGY) Development of open source software to elaborate data.

(Brown) combining efficiency and wellbeing. The transition in dominant socio-technical system viewed through multilevel perspective, MLP., is needed in order to incorporate new technological development in old institutions.

Urbanization is the future! Disincentives for living in the peri-urban suburbs, how do we get the middle class to afford living in the megacities? Austria is the leader in the Passive House sector. What is that Austria made this transition and the US couldn't? It's a mix of policies, incentives and other command and control regulation that made it possible in Austria.

How can new technology change the life styles accordingly with the degrowth movement?

If we build new Passive Houses in the cities, we may miss the link between the district/neighbourhood and the rest of the system. How do we frame the transition? The research should shift the focus from technology to people. For example how do the occupants of the Passive Houses (PH) use energy?

(Marotta) Asymmetry of information: small enterprises which are reliable actors in a neoliberal environment could be consider accountable and able to develop long term relationships, on the contrary the big corporation are evanescent and unreliable as they control our data on energy consumption.



GIVEN ANSWERS

How do the people who don't own many money could afford Passive Houses?

A PH costs the same as other houses in countries use incentives, there should be just passive houses.

European Union consider growth still as a strategical goal for development and at the same time pushes for a transition in the energy sector, how does degrowth fit in this scenario?

(Brown) Growth is necessary for a growing population, just in strategic sectors, we need to grow in some sectors in order to degrow in other.

How we could lead the transition towards degrowth?

(Wallenborg) We need the control over technology. Energy communities that are producers and consumers and through the smart grids adapt the distribution on the base of their consumptions, have access to their data to carry out researches.

Does the smart grids experience some difficulties, which are the mayor costs for the development of the infrastructure?

The main problems at the local level are in the conversion of energy for the exchange between production and consumption.

Halina Brown

In degrowth perspective should we question whether urbanization is the future, or this is given and we shall accept it?

I think that we need to accept it. One can, of course, envision a scenario of a total collapse of our civilization as a result of great climatic changes, and people being forced into the countryside in search of subsistence. But short of that scenario, urbanization seems to be a relentless process.

Can passive house approach be applied to retrofit existing buildings, so to avoid material plus energy needed for new constructions?



Retrofitting existing buildings presents a different problem than new buildings. Both are based on the same scientific principles but the techniques are very different. So of course we need to talk about the retrofits but in a way it is a different topic. And especially it is different in my presentation because:

1. I make an argument that urbanization will require construction of new buildings to accommodate all the people moving into the cities
2. It is the construction of these new buildings that opens an opportunity to rethink the lifestyles, and to design these buildings according to the lifestyles in which the pursuit of wellbeing, not growth, is the main goal. Retrofits do not offer such opportunities. Retrofits are strictly about energy efficiency.