

The role of behaviours in Energy Transition: The holistic approach of Human Energy

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Introduction

Challenge 1

How can we develop an empirical base for the study of the future?

The first challenge was to create a sufficiently solid empirical basis for energy transition studies. In other terms, our challenge was to develop a research based on facts and not on mere hypothesis.

Challenge 2

What is the role of the “human factor” in energy transition?

The second challenge was to study energy transition as a human phenomenon. This approach would try to overcome definitively the old perspective that opposed the “social” to the “technological”.



Istitutional Framework

The poster presents the results of the activities carried out under the Work Package 2 (led by LSC) of Milesecure-2050 Project (Multidimensional Impact of the Low-carbon European Strategy on Energy Security, and Socio-Economic Dimension up to 2050 Perspective - SSH.2012.2.2-2 – 320169).

Visit: www.milesecure2050.eu

Essential references

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Disclaimer

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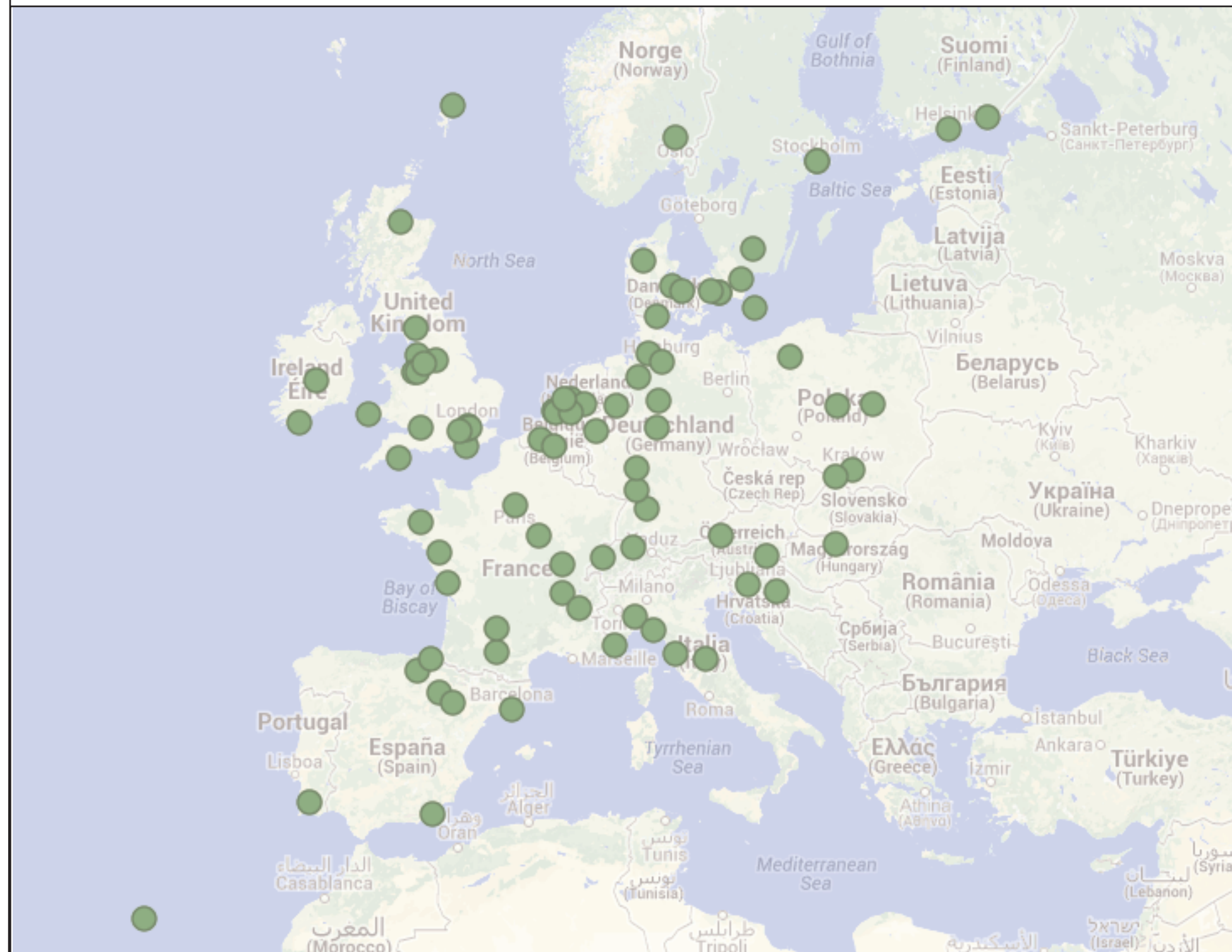
Theory and Metodology

Anticipatory Experiences (AEs)

already existing "pieces" of a future low-carbon society

Research analysed a series of "anticipatory experiences" (AEs), or local experiences that contain some fundamental characteristics (thus, anticipating them) of a society based on environmentally sustainable energy sources. These case studies can be seen, thus, as anticipatory of the energy transition. The study of AEs allowed for a focus on concrete factual elements of energy systems in transition, and not on mere hypotheses.

From an overall database of 1500 initiatives a set 90 AEs were identified and studied (see map below)



Human Energy (E, S and P)

an holistic conception of energy

Human energy can be conceived as a unitary social phenomena in which different energy dimensions interact. In addition to the traditional exploitation of resources, which would fall into the dimension “extrasomatic energy”, we can include two other dimensions: “social energy” and “endosomatic energy”.

- Extrasomatic energy (E) is characterized by the use of natural resources through the adoption of all kinds of equipment, technology or machinery (using all energy sources, whether carbon or low carbon).
- Social energy (S) brings together different forms of social activism that coordinate, and orient different social actors toward common energy transition's goal.
- Endosomatic energy (P) originates directly from the body. It can be assimilated to the capacity of effecting profound changes at the personal level in one's daily actions and convictions, in view of a more sustainable lifestyle.

Results

Social and endosomatic energy are present in Energy Transition (ET)

Direct observation of AEs shows quite clearly that energy transition is not only a matter of technological renewal. On the contrary, all three forms of human energy, and not only extrasomatic, tend to be present in all the energy transition experiences we have analysed.

Social and endosomatic energy play a key role in ET

Direct observation of AEs shows quite clearly that energy transition is not only a matter of technological renewal. On the contrary, all three forms of human energy, and not only extrasomatic, tend to be present in all the energy transition experiences we have analysed.

Type of balance	#	%
ESP	30	33.3
SEP	22	24.5
EPS	14	15.6
SPE	13	14.4
PSE	7	7.8
PES	4	4.4
Total	90	100.0

Type of balance	#	%
Prevalence of E	44	48.9
Prevalence of S	35	38.9
Prevalence of P	11	12.2
Total	90	100

Source: LSC 2013

ETs proceed in a certain direction

Energy transition processes seems to be characterized by a "direction", or rather an order of activation of different forms of human energy. If the first to be activated is social energy, it is likely that extrasomatic energy can be activated more easily. When, on the contrary, the latter is the first to be activated, it is likely to meet with resistance and obstacles from the other two dimensions of human energy .

Energy Transition Depth

All AEs consciously tend to have a profound effect on the local reality, in technological, organizational, social and personal terms.

Social conflicts
Dissonance with the surrounding reality
Tensions related to personal resistance to change
Conflicts within the promoter group

A state of stress in Energy Transition

Energy transition can lead to many different forms of opposition, conflicts, tensions and resistances that involve the social system as a whole.

A deep awareness of social and environmental dangers
Critical attitude to contemporary society
Adoption of innovative approaches
Construction of new social configurations

Conclusions

Localization (extrasomatic energy)

In the studied local energy transitions the technologies and services for producing, consuming and moving energy became more accessible and apparent for citizens than ever before. A new relationship between man and the environment is established when people have a more active role in controlling the energy system. Human shifts in behaviour occurred, therefore, in the studied AEs in relation to the extrasomatic realm.

Technical proximity
Energy autonomy
Repairing capacity of users

Cybernetic function (social energy)

Not only is human behaviour important in driving the energy transition, but also in stabilising it. Tensions and conflicts linked to the situation of stress are managed through a series of continuous, coordinated and simultaneous actions: the cybernetic function. The cybernetic function is a phenomenon which involves people as the protagonists of energy transition, and not as mere receptors. Human behaviour takes on a critical role in stabilising the interrelated social tensions that develop in conjunction with the energy transition.

Active participation in decision making
The exercise of negotiation
Continuous communication
Gaining an institutional space for energy transition

Repositioning (endosomatic energy)

In energy transition individuals reposition themselves in the context of a new energy (and social) system where the relationship between body and reality change deeply. Individual behaviors may change as shown in the box below.

Increased use of muscular strength
New attention toward practical issues of everyday life
Self-perception is reframed in the new energy system

Homo Comfort VS Homo Responsabilis

A paradigm shift in human behaviour occurred in energy transition anticipatory experiences.

Homo Comfort	Emergent social functions	Homo Responsabilis
Use service / technology but do not understand it, or choose not to use it.	Localization	Actively use service / technology with high degree of agency
Focused on the self, loses contacts with others	Cybernetic	Act in group to control and address energy transition
Avoids fatigue and pain	Repositioning	Activate his body: short-term fatigue and pain does not dominate decision-making – instead long-term happiness