

Energy sufficiency: a future reality that is happy or suffered? The point of view of stakeholders

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It aims at exploring how we can live well, within the limits.

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Introduction

Hosts :

- **François MOISAN, Executive Director DEPR, ADEME (FR)**
- **Joanne Wade, Vice President ECEEE and Deputy Director ADE (UK)**
- **José LOPEZ, Energy Efficiency Manager, AFD (FR)**

Organiser: Didier BOSSEBOEUF, Head of evaluation of energy efficiency policies, Directorate of Foresight and Research, ADEME

François MOISAN

This workshop is titled 'Energy Sufficiency. Future reality accepted or suffered: the viewpoint of stakeholders'. It has been organised in collaboration between ADEME, ECEEE and the AFD. It is a project carried out by ECEEE.

ADEME has been involved since the first oil shock in actions on energy efficiency. Today is part of a qualitative and quantitative increase in ADEME's engagement with energy sufficiency.

Definitions of sufficiency:

Energy sufficiency can be described as a state in which people's fundamental needs for energy services are met in an equitable way and ecological limits are respected.

Alternatively, one can describe energy sufficiency as a process that can be described as the search for moderation in production and consumption of goods and services requiring materials and resources.

Reflections from ADEME :

1. If the behavioural component of sufficiency is important and often the one that is highlighted, the technological dimension must also be integrated. For example, in the digital area, should we promote the reconditioning of mobile phones rather than changing them every 3 years (idea of programmed obsolescence)
2. The question; 'sufficiency accepted or suffered' is linked to the idea of individual sufficiency versus policies that can facilitate sufficiency. The presence of cycle lanes, for example, allows citizens to make more sufficient choices.
3. The subject of wealth indicators, notably GDP, and the alternatives to wealth indicators as an indicator of national wealth. There have been many academic studies by environmental non-governmental organisations on energy sufficiency, but more official studies are still rare.

ADEME is the driver of the energy transition and plays a pioneering role. It must reflect on the idea of what sufficiency is and the implementation of future policies that will be more or less binding in the longer term. ADEME must also have a vision that is broader than just energy, and work on the synergies with other areas such as pollution, resources, air quality, consumption etc.

There is also work on behaviours, dealing with the acceptability for actors of very drastic changes in their way of life. Also, there is work with the European Commission on indicators to measure and monitor the evolution of energy sufficiency.

Joanne Wade

ECEEE is the leading European network for energy efficiency professionals, producing knowledge and supporting exchange of ideas between actors and countries. ECEEE organises Summer Studies each year, which aim to inform the policy agenda in Europe and to ensure that those who are interested in energy efficiency can support the development of public policies that meet the needs of professionals in the sector.

Why 'energy sufficiency'? Because it is necessary to go beyond energy efficiency to reduce significantly and sustainably our energy use and so respond to the challenge of climate change.

Turning to today's workshop: ECEEE received funding for a 2 year project from the KR Foundation in Denmark, and additional support from a range of organisations to organise workshops like today's. Today, we are going to explore the concept of energy sufficiency and think about how we best communicate this idea to public decision makers, so that they see energy sufficiency as an opportunity and not as a threat. More specifically, this workshop has two objectives: ECEEE would like to better understand French ideas and would like equally to hear the points of view of a range of actors and stakeholders.

José LOPEZ

The AFD is happy to host this seminar. The AFD works with developing countries where the question of energy sufficiency is important. Energy efficiency and sufficiency are henceforth at the core of AFD's strategy, which has worked much on renewable energy. One observes a rebalancing of efforts in the energy domain towards energy efficiency, which is reflected in the AFD's strategy (which is in the process of being adopted today).

This workshop is also a good illustration of the spirit of cooperation between ADEME and the AFD. Given the increasing importance of these topics, the AFD needs to integrate and learn from ADEME, which has a long history of implementing energy management actions in France and also internationally.

What is the AFD? The AFD acts to improve living conditions of people living in developing countries, emerging economies and French overseas territories. It is a financial actor and also a provider of technical assistance which acts in many sectors such as water, health, digitalisation, culture, etc., within the framework of the Sustainable Development Goals. It is a network of 85 agencies and 17 regional delegations, which manage around 4000 projects. The AFD's total annual financial commitments are around 12 billion Euros. The AFD aims to become the first development bank 100% in line with the Paris Agreement (supported projects must be coherent with the objective of containing global warming to less than 2 degrees, as in the Paris Agreement). The AFD has committed 2 billion Euros in direct interventions in the energy domain.

The AFD's strategy is based on 3 vectors of sustainable energy, which are renewable energy, energy efficiency and energy sufficiency. The issues and the levers of energy sufficiency are well known; nevertheless the more practical questions of implementation and generalisation are less well known. The AFD hopes to propose some pathways and also to learn about the practical cases that will be presented today.

This demand for sufficiency challenged the AFD because how can we convey a message that also leads to concrete actions in countries in which leaders and communities wish for access to energy? The aspirations of developing countries are also very often inspired by Western models of life. Having said that, there are also the countries where 80% of the infrastructures that will be in place in 2050 do not exist today. Thus they are also the countries which perhaps have the most freedom to imagine and put in place modes of development that are energy sufficient.

Didier BOSSEBOEUF

This workshop is the sixth in a series of workshops held in many European countries. Its objective is to describe what sufficiency policies could be and how these may be differentiated from the policies of energy efficiency that we know in Europe.

ECEEE is characterised by informal exchanges – today is a workshop, not a conference or a seminar: interactions are encouraged.

Session 1. Concepts and definitions: where are we?

Modérateur : François VIDALENC (ADEME)

Talking about sufficiency poses the question of limits. This is not an accepted notion; it is less so than the idea of energy efficiency because it questions the foundations of the consumer society.

At the same time, the fact of this workshop shows that discussions about sufficiency are becoming more institutionalised and also that it may be registered (or is about to be registered) on the political agenda. The example of a transformation such as that which happened around alcoholism when alcoholism was recognised as a collective problem and not only an individual problem is certainly enlightening. A publicity leaflet suggesting a maximum of 1 litre of wine per day per person was seen as very coercive at the time, but today this leaflet causes laughter because society has evolved.

The last report from the IPCC revealed that to contain climate warming below the 2 degree level, it is necessary to halve emissions of greenhouse gases in the next 10 years. It is necessary therefore to take the first step in this direction. Measures such as the electrification of transport, digitalisation of services and insulation of buildings require a long time.

Energy sufficiency is interesting because it can be implemented and be effective in the short term. It can also contribute to making more resilient a system that is at the moment vulnerable to the effects of a changing climate, for example the 2008 summer heat wave.

Participants:

Joanne WADE, ECEEE Vice President and Deputy Director, ADE (UK)

Patrick BEHM, Founder of ENERCOOP and Coordinator, Energy Transition Axis at the ESS Laboratory (FR)

Jean-Louis BERGER, ADEME national expert on the circular economy and primary materials (FR)

Joanne WADE

Thinking about the definition of energy sufficiency: how will people react to limits? This has implications for communication with politicians. What do we know about this subject? Research to date has focused on the differences between energy efficiency and sufficiency, and approaches in two sectors: buildings and transport.

Key findings from the KR Foundation project. There has been debate on the definition of energy sufficiency: is it a state of an action? Energy sufficiency in terms of a state is well represented by a doughnut; adapted from Kate Raworth's sustainable development doughnut: the green space is the ideal place; in the hole in the middle of the doughnut you do not have enough, and on the outside you are using too much. The objective of policy is

to move us in the direction of the inside of the doughnut. The question is will people want to do this, or will it have to be imposed on them?

How do people react to the idea of energy sufficiency? There are all sorts of reactions from 'it is political suicide' to 'living the good life'. Energy sufficiency is a relevant topic in the view of social movements such as Extinction Rebellion in the UK for example; which are gaining much public support.

There are things we can do individually, but most choices require infrastructures to make them possible, and this infrastructure depends on policy choices – not only in energy policy. For example, cycle paths, cycle parking depend on urban policy and land-use planning. How can we start the dialogue with these actors ?

A guide to the measures that can be taken at the local, national and international levels will be produced following these debates.

Questions

What limits are you talking about, scientific limits? The difficulty is not the limits, it is the decisions needed to face these constraints. Can one rely solely on the market to respond? Probably not.

Markets produce volumes and are part of an ensemble of instruments which allow us to reduce emissions of greenhouse gases.

Society sometimes takes decisions without having the economic dimension at the centre, as for example in the choice to have a big public communication campaign to mitigate the ravages of alcohol.

Patrick BEHM

Energy sufficiency focuses on consumer actions. There is a sequence: energy sufficiency > energy efficiency > renewable sources.

The energy transition comprises consuming less, then consuming more efficiently, and finally consuming energy from the least polluting sources, the renewable sources.

The development of new and renewable energy sources is being implemented. It is late in France, but the movement has started. Energy efficiency is also well implanted in public policy. Energy intensity (the quantity of energy needed to carry out an activity) is falling by 1.4% per year. In the area of digitalisation, Moore's Law states that processors double in power every 18 months, and Coumet's law has shown that the quantity of energy needed to calculate an algorithm is dividing by 2 every 18 months.

So, is everything therefore good? No, because there is the rebound effect. Reductions in consumption in one area are followed by an increase in another. In the automobile sector, new cars are heavier, more powerful, comfortable, so despite gains in energy efficiency there is not an improvement in consumption. In the same way, in the digital world, the energy required is growing by 8% each year.

A transformation in behaviour is needed, which must be accompanied by a positive story. The narrative around sufficiency is still very negative, which means that it is perhaps introduced as desirable but in practice it is more complicated. There is a need to redevelop a story around sufficiency that gives it back its credentials. For example, with happy, voluntary sufficiency and the 'slow' movement (living better and living less quickly).

The three levels (citizens, public and private groups, institutions) must be involved, say sociologists. Work is necessary with actors in the social economy.

Questions

Could energy sufficiency be viewed as a new social project, even in regions affected by difficult problems like unemployment? It is in effect a reconstruction proposition and an alternative to the current model which is deadlocked and difficult to get out of.

Jean-Louis BERGER

We need to pose the question of materials; which are the finite resources necessary for the manufacture of goods and services.

The presentation includes a citation from Kenneth Boulding which illustrates that the linear economy is the economy of the cowboy, and the circular economy is the way of life in a spatial vessel in which resources are very limited.

The International Resources Panel produced a report on fossil energy, biomass and construction materials. At the current rate, the world population will consume twice as much material as now in ten years time. This is not tenable; we must reuse materials, recycle and consume less non-necessary things.

What is sufficiency? We talk about what are needs (education, health, leisure, etc) and what is 'too much'. This is the key: what is it that is too much?

Turning to an OECD report on development perspectives to 2060. There may be shortages, even if physically and geologically unlikely, but there may also be geopolitical shortages. China has large reserves and its strategy is to invest in mines outside China; its geopolitical weight is thus much more important.

Questions

What are fundamental needs? They evolve. For example, in developing countries, a mobile phone is an essential element of economic development, social interaction, etc.

There is work ongoing in the UK to define minimum needs which suggests that needs change more slowly than one might think, and thus it is possible to define them.

The OECD shows that use of primary materials must be divided by 3 to reach the objective of the Paris Agreement. Beyond 1% of GDP, recycling alone cannot help us to deal with the climate constraint.

Can Netflix be considered a fundamental need? This is a debate for society.

Fundamental needs are different from what we think: in prehistoric times human beings drew art on walls even though they did not know what they were going to eat the following day.

A simple definition is of a state in which each person has enough and no-one has too much, and I hope to hear some examples of initiatives today which can bring us towards this ideal state.

Session 2. Public policies for energy sufficiency: a sectoral approach

Moderator: Jean Sébastien BROCC, IEECP (NE)

We must recognise the important of imagining different choices.

Participants:

Anja BEIRWIRTH, Wuppertal Institute (DE)

Lorenzo PAGLIANO, Politecnico di Milano (IT)

Sophie ATTALI, Sowatt (FR)

Heike BRUGGER, ISI-Fraunhofer (DE)

Anja BIERWIRTH

Many decisions are taken during the construction of a building. The life cycle of the materials, flexibility of usage, recyclability of equipment.

Let's consider the square metres of space per person in housing for buildings to be sustainable. European benchmarks show a wide variety in usage of space.

Research results suggest that 340 TWh of energy could be saved in residential buildings in European countries if the average was 35 square metres per person. This is more than 20% of what we use today.

Other indicators are important: are washrooms in each living unit or shares; indicators of damp or cold. The height of the ceilings is also important for understanding energy use.

How can we identify the factors of sustainable or non-sustainable lifestyles? How can we have more buildings without having asked ourselves the question of whether or not these buildings are sustainable?

There are interesting policies for older people. Older people often live in spaces which have become too large for them.

Think about financial advantages. There are countries where it is the norm to share a washing machine or clothes dryer, rather than having individual equipment.

Minimum energy efficiency standards for electrical appliances in general has not reduced total energy consumption for housing. A relative label could improve things – for example a 'pick-up' may be high energy performance but a smaller, less efficient car may still consume less energy. This is not taken into account by policies.

Questions

People have asked if there are positive stories on energy sufficiency; have you heard any examples?

Not so much in policy, but more in recent projects. New homes in Zurich have very few parking places, so living there goes hand in hand with not having a car. People don't see this as a limit, because there are very few places to park and people like being able to walk in parks and breathe clean air.

Why did you present averages even though we know there are large disparities, for example between urban and rural areas? The buildings market differentiates buildings by price, which reflects also the size of houses, thus this is included in the choices of actors in the market.

We do not have the data. The fiscal system in Germany is not based on size of buildings, but on price and the price does not always reflect the size of the homes.

Do you have any information on the impact of energy sufficiency on the price of buildings? In certain European countries, there is a strong correlation between energy sufficiency and the price of the building.

Yes, in zones where the price of homes is raised, such as in the centre of towns, where small apartments can be more expensive than the price of large houses. There are studies happening, but these are not yet finished.

Lorenzo PAGLIANO

Energy sufficiency, as other speakers have said, consists of reducing energy use and at the decarbonising the remaining energy needs. Ventilating a home rather than using air conditioning for example allows using less energy, but this depends on having a calm environment and clean air. So we have need for fewer cars, for sustainable mobility. Other small actions such as using a washing line rather than a dryer let us use less water and allow space for bicycles in homes, etc.

We know that regulation improves comfort in buildings. Humidity affects comfort negatively, and a good system of ventilation allows us to improve comfort alongside reduction energy use – this must be written into building standards. This is not enough. The environment must allow this solution to be the one preferred by households.

Regulation which concentrates on the quality of materials is the most effective. For example, protection against the sun's rays integrated into the facades of buildings.

Emissions of micro-particulates (PM₁₀ and PM_{2.5}) are the same with petrol vehicles and electric vehicles because they result from the effect of friction between tyres and the road, which raises particles which we then breathe in. The future is less cars.

I, with others, have proposed an amendment to the European Buildings Directive, which is the first directive which includes provisions on mobility by providing charging points for electric cars integrated into buildings. Our proposal was to integrate more space for sustainable mobility options like bicycles, but unfortunately our amendment was not passed.

Questions

The data on humidity, comfort etc: are these technical or do they also integrate the perception of occupants?

These data are based on surveys in which people are asked to rate how they feel and measurements are made in parallel, which allows us to correlate the technical results and the statements on perceptions of comfort. These are large databases.

What is the next step that you suggest? To present the results to Mayors, to collaborate with projects at town scale or something else? What must we do so that these approaches become everyday?

We are working with the city of Milan in a cross-cutting way, to integrate these reflections on planning and road construction, which present some challenges. Everyone must play to their expertise to promote energy sufficiency.

Sophie ATTALI

Looking at the relationship between energy sufficiency and labels.

Electricity consumption in EU countries in the residential sector represents 785 TWh, of which 40% comes from electronic equipment and this part has grown 5% since 2015.

This is not to deny the impact of the European Directive, because the situation would have been worse without it. On the other hand, each household owns more household

appliances per person (the IEA suggests that a person may own more than 200 objects that require electrical recharging by 2030). These trends cancel out efforts taken in other areas.

There are a number of action and measures that can help to resolve this problem. Examples of the main categories are: unplugging equipment when not in use / smaller sizes / collaboration between individuals such as sharing wifi / not buying a TV. These measures could reduce by 50% residential energy consumption, which is more than energy efficiency can achieve.

Fewer data are available in the commercial sector, but a first estimate suggests that a similar potential exists.

The Negawatt scenario has similar conclusions. There exists a potential of 25 TWh energy saving with energy efficiency, and 29 TWh more with energy sufficiency, which demonstrates that for countries like France or the UK it is impossible to reach our ecological and just transition objectives without using the lever of energy sufficiency.

Societal values (individualism, social status through comfort and the possession of objects) influence people's behaviour. These values have become so strong that the products offered to consumers do not necessarily include a sustainable option, for example new building programmes all have air conditioning.

On the other hand there is good news. Environmental awareness is becoming more important in what society values. The sharing economy may also be a positive trend – avoiding buying and moving towards borrowing. The convergence of products, such as a camera integrated in a smartphone. Intelligent products that have energy sufficiency functions integrated, such as switching off lighting if there is no-one in the room.

Electricity is invisible and is not well understood by people, so people do not realise that they are consuming electricity.

The average size of washing machines is growing, even though the average volume of linen baskets remains the same. Cold washing is more efficient; it is used in Australia for example.

Regulation today is a barrier to energy sufficiency because it encourages the purchase of bigger products. Acceptability is also a constraint on energy sufficiency. There is potential for energy sufficiency in products and household appliances.

Do public decision-makers understand energy sufficiency? Their role is to enable people to act in a sustainable way. It is a problem that European Regulation does not recognise the concept of energy sufficiency, and this lack of reference is holding back progress and communication.

Another role of regulation is to prevent the least efficient behaviours: banning supermarket refrigerators without doors to keep in the cold. Advertising that runs counter to energy sufficiency could also be banned, in the same way as was done in France during the first oil shock.

Questions

Electricity consumption has been flat for the last 2-3 years, which is perhaps linked to a weaker economic growth.

You have mentioned the good results from the Ecodesign Directive, and a Directive takes a good 5-6 years to be adopted. Is there an opportunity soon to introduce energy sufficiency into the revision of European Directives?

There was a recent revision and some aspects were passed, such as the durability of products, but we feel like we are advancing very slowly. Equipment manufacturers must support these changes, but they say they have already made every effort possible. There are still plenty of opportunities to do things differently.

Question from the Commission: I would like to react in response to the comment which suggests that there is a lack of taking into account energy sufficiency at the EU level, but we

must recognise that energy sufficiency and energy efficiency overlap. The objectives of energy efficiency contribute to energy sufficiency in European policy. I see energy sufficiency as a more coherent and larger response to the constraints of climate change and it is necessary to create new policies. The European and local levels are both necessary to put in place solutions.

In effect, the European Commission has a mix of policies in place, which is good, nevertheless on the Ecodesign Directive the measures do not go very far. The problem is that even when the European Commission propose things, they are refused by the other institutions.

Heike BRUGGER

How does energy sufficiency translate into the transport sector?

We decide to use this or that mode of transport (car, train, etc.) as well as the goods that we consume (buying in a shop, buying online with delivery), which has an effect in return on the tertiary sector. In industries, standards have an effect. The three sectors and their interactions have an effect on emissions from the transport sector.

A nicer town can be created with fewer cars and roads. In a study which evaluated the potential for economies linked to energy efficiency, we tested the lifting of constraints and our results suggested that we could reduce by 30% the emissions in the transport sector.

Nous observons des tendances, telles que l'effet rebond. Si les voitures deviennent plus grandes et que nous voyageons plus, alors beaucoup d'avantages sont diminués. Si nous ne saisissons pas les gisements de l'efficacité énergétique, alors la situation pourrait être pire.

We observe certain trends, such as the rebound effect. If cars become bigger and we travel more, many of the advantages are reduced. If we do not seize the advantages of energy efficiency, the situation will become worse.

What would happen if the trends we can observe today are all positive trends in terms of reducing consumption in transport? We could reduce our energy demand by 77% compared with a scenario where nothing changes until 2050. On the other hand, demand for energy could grow if we do nothing.

The work of the Coalition on Energy Demand suggests that consumption by road transport may be reduced by 40% with automation, if that is put in place in a way to reduce energy demand. But in the worst scenario, demand for energy may almost double. If we do not regulate what can happen with electric cars, people could for example decide to use their cars like a train to drive them in the night from London to Paris, which would again increase electricity demand.

We have regulations on energy efficiency for products, but which don't regulate the size of products. This is contrary to what we must have to support energy sufficiency.

How do we regulate in the right way? Encourage use of cars or the train, of the train or planes?

Questions

You did not talk much about investment, in the context of constrained public budgets. There are proposals which everyone dreams about, but is it not possible to put costs against these proposals? To do a cost-benefit analysis ?

Yes we must consider at the same time the direct costs and the externalities.

Didier Bosseboeuf: I would like to make some general comments.

In talking about costs, a third of our taxes disappear because of fiscal evasion by a part of the population. Since it is urgent to act today, where can we find the funding?

I feel a pressure to be an expert to do my shopping; it would be much easier if we had only sustainable and durable options. Taking the example of plastic water bottles, they are always in the supermarkets because they are cheaper. Can we take a collective decision to stop making plastic water bottles?

There are discussions happening on energy sufficiency in the agricultural sector, and I have been invited to speak at a future meeting of the agricultural federation on the subject.

How can we ask people to think about these questions when they live with stress? We talk of regulation and of obligations, but policies must be based on consent and on collective agreement, because we have seen that the opposite does not work and hard regulations lead to clashes.

This links to a previous comment, that more options offered to consumers must be sustainable. This links also to social norms, because social norms do not develop in a linear way, they can have points of rupture where the social norm changes rapidly, and when this line is reached, it is possible to have rapid changes.

Negawatt is finishing a study for ADEME in sufficiency in the agricultural domain.

Sophie Attali mentioned a fifth dimension of energy efficiency which is that of temperance, and that seems interesting to me.

People need to be supported at all times, and public policies create a stop-go effect which is counter-productive.

Conclusion:

There exists an enormous potential, but this is not going to happen on its own, and policies are needed to change behaviour. The examples mentioned are taking place at the local level, and we hope that these local initiatives can be extended to a bigger scale.

Session 3: Round Tables

First Round Table: Energy sufficiency, myth or reality; stakeholders' points of view

Moderator : Stéphane SIGNORET ; Editor, Energie Plus

This round table addresses the question of our approach to limits; to what extent do we accept the limits? Economic degrowth is a controversial concept, but one which must be introduced into policy. What are the differences between energy sufficiency and energy efficiency?

Participants:

Joseph AJJAR, Ministry for the Ecological and Just Transition (FR)

Chiara MARTINI, ENEA (IT)

Benoit LEBOT, IPEEC (FR)

José LOPEZ, AFD (FR)

Joseph AJJAR

I am working on modelling the long term effects of climate policy. France has a climate plan which runs to 2025, and this plan is currently the object of a consultation.

Emissions of greenhouse gases are modelled to 2050. Constraints include limits to CO₂ storage and to limited biomass resources. In industry, there are emissions linked to processes that can't be reduced, and you find these also in the agricultural sector.

Agriculture: one key hypothesis is changing eating habits. Less consumption of meat, less food waste. This is an average which covers disparities : some people will continue to eat meat whilst others may reduce their consumption. This has implications in terms of the utilisation of land and emissions of methane by herds of animals.

Transport: teleworking and urbanisation tend to reduce the need for mobility compared with today. In a similar way, one can hypothesise a reduction in the number of cars per kilometre travelled which comes from car sharing.

Buildings: a key hypothesis is better insulation of buildings combined with a 1 degree reduction in the average temperature desired.

Industry: circular economy; products which last longer reduce demand.

Constraining emissions of greenhouse gases will be difficult without changing behaviour because this objective is very ambitious, and these hypotheses are already pushed to the limit. One important consideration is the combined effect of policies, to make sure that synergies rather than contradictions are created.

Communication of co-benefits is also important, not only in terms of greenhouse gas emissions but also in terms of image, quality etc. The worst situation would be that where one does nothing because others are doing nothing (fisherman's dilemma).

Chiara MARTINI

Orienting energy efficiency in the wrong direction will be counter-productive. Energy poverty and energy sufficiency are connected at the centre of the doughnut (see Kate Raworth), since people do not have enough. Households who are in energy poverty need to improve their situation at the same time as other households, it is not productive to treat other households in a different way.

Households in energy poverty may have equipment with very low efficiency or indeed behave in a way that is not sustainable. For example, the television may be on for more than 11 hours per day. This is not only an energy question, but also a problem of social exclusion. Energy sufficiency can have beneficial effects on these two aspects with, for example, communal rooms for television watching, to create a communal life and reduce the number of television sets.

In terms of equity, society must be ready to accept that the rebound effect will happen in the homes of households in energy poverty.

The role of government is to evaluate the multiple benefits of energy sufficiency. These solutions are economically accessible and enable the resolution of other problems such as social exclusion.

In the collective vs individual debate, there are many examples. In Japan, for example, homes and objects are made to the size required.

A matrix can be used to represent the different solutions which respond to the needs of households in energy poverty.

Behaviours are very important for changing things, and national energy agencies have a role to train and support households and encourage them to adopt more virtuous behaviours.

Questions

Are there energy sufficiency policies in Italy or is it still in the works ?

Italy is not at the point of considering energy sufficiency to be political suicide, but neither is it an imperative.

Benoit LEBOT

The IPEEC brings together 17 countries from the G20 with the objective of cooperating on energy efficiency issues. Energy efficiency is a common source of energy in all countries. The international dimension allows the exchange of good practices.

Only four steps are needed to reach climate objectives: energy efficiency – renewable energy and energy recovery - the carbon content of products – changes in behaviour. In 2004 the IPCC report already mentioned these four approaches.

Russia has much invested in energy efficiency, and Brazil also invest in education in schools on virtuous behaviours in the energy plan. Argentina has demanded that the effects and effectiveness of behaviour changes should be studied in more countries. There is a report available on the IPEEC site.

Energy sufficiency is a long term effort. Energy sufficiency is not yet an institutional subject. The IEA is a working platform for the exchange of knowledge to help professionals to put in place long term actions and to increase their impact.

José LOPEZ

The strategic plan which the AFD adopts today recognises energy sufficiency and makes it a major focus of its strategy and approaches to financing infrastructure in developing countries.

However, it remains a difficult subject to broach with Heads of State. Developing countries imitate the ways of life of developed countries. We need positive examples of energy sufficiency to convince Heads of State that this is a good way to follow. For example, we ask that social housing is constructed close to public transport infrastructure.

Questions to the panel

Are there other examples of virtuous behaviours and energy sufficiency good practices? It is not my area of expertise, but we can see progress in institutional recognition of the idea of energy sufficiency. Citizens, NGOs and researchers have a key role in promoting energy sufficiency.

Negawatt has played a key role in introducing energy sufficiency into the public debate.

Is there a role for a collaboration between technical experts and sociological experts (behaviour change) which aims to propose energy sufficient solutions to consumers?

Do we need to talk about equity, which is a notion close to that of justice while efficiency seems more innocuous.

Design of good public policies is essential in order to change behaviours.

Italy has a three year training programme for households in energy poverty. Also, in the tertiary sector, behaviour can change rapidly vis-a-vis heating and air conditioning. The availability of indicators is important for us to be able to follow trends. Indicators which track well-being, which surpass the only classic macro-economic indicators (GDP etc.)

Public budgets are important for financing programmes, defining indicators and more can be done to put energy sufficiency on the political agenda of international institutions. Europe has a key role to play.

We have addressed much the subject of energy sufficiency, but people will not go spontaneously towards energy sufficiency. More 4x4 were sold last year than electric cars. What can we do?

We can talk about sufficiency as a way to regain autonomy, security and creativity. Internalising limits leads to more creativity. We do not hear this point of view because we approach the question from the scientific point of view, in a reductionist way.

There is a project underway (ODYSSEE-MURE) that collects energy sufficiency indicators in many countries; we will have results within two years.

It seems that it is more possible to do energy sufficiency in developing countries because there is more infrastructure to construct. Choices can be made with the latest available information. However, the policy framework is weak in these countries, so political discourse leads to very little action on the ground.

Second round table – businesses and civil society

Moderator : Stéphane SIGNORET (Energie plus)

Participants:

Edouard TOULOUSE, Negawatt/ENOUGH network (FR)

Claire TUTENUIT, Entreprises Pour l'Environnement (FR)

Dominique OSSO, EDF R&D (FR)

Barbara NICOLO, Virages-énergie (FR)

Julien CAMACHO, CLERC (FR)

Dominique OSSO

Sufficiency is very linked to energy efficiency, as soon as you consume less for the same service.

Where is EDF? EDF helps its clients to carry out energy renovation works with energy saving certificates. Customer relations is also an area of intervention for EDF, which enters into discussion with customers who call to question their electricity bill and provides them with advice.

In energy management, turning off the light to save energy when the room is not lit can increase energy efficiency, while lowering the desired temperature from 23 to 19 degrees is close to energy sufficiency. The boundary is thin.

Recent buildings all perform well, but still one can see a difference in the consumption of very high performing buildings. There is there also a space for energy sufficiency.

The first point is to minimise the energy service. Electrical heating is only economically viable with building insulation.

The second point is to use efficient equipment.

The third point is the use of renewable energy at the local level.

The fourth point is the emissions which come from elsewhere, which depends on the overall structure of the energy system.

Finally, is not sufficiency the additional factor that will allow us to achieve zero emissions?

Claire TUTENUIT

I represent an association of 40 large firms from all sectors.

At the January 2019 climate march, one placard said 'the big eating of energy, stop, that's enough'.

In another sector, wine, firms closed during the public campaign raising awareness of the ill effects of alcoholism and, so sales of wine have not fallen. Growth is compatible with energy sufficiency.

Efficiency cannot work alone. For example, the aeronautics sector is the champion of energy efficiency with an average reduction of 2% per year. However, their global emissions are increasing because demand is increasing.

EPE is leading the ZEN study, which studies both economic and sociological aspects. There are different points of view ; some people who are reticent, some who are drivers, and some 'variable' people who are the big majority; all these people need to change. The study asked the question of what must be done by 2050 to respond to the collective psychological attitude as well as to particular situations.

ZEN showed that firms are not indifferent to household representations of ideal ways of life. Firms play a role in the shaping of ways of life and norms, using publicity for example. The ideal of the individual detached house is represented by estate agents as well as in the advertisements from insurers, for example.

The social norm is set to change and ZEN companies are collectively aware of this.

Edouard TOULOUSE

What has the Negawatt scenario done? The approach of the association is to propose an energy transition scenario taking as wide a view as possible of energy needs, even before considering the technologies that are used.

The Negawatt scenario was the first to propose the sufficiency/efficiency/renewables triptych. Starting from needs to move towards the mode of production. However, much of the work of local agencies does the inverse, and acts on the technologies before acting on demand. The ambition of Negawatt is to reverse this tendency.

The limit of this approach is that there is only one scenario, which may seem a little normative. The other limit is that we reason in terms of the average consumer, whereas in reality behind the averages there are disparities. Sufficiency does not mean the standardisation of lifestyles.

Figures can be attacked, for example 0% of energy for games consoles, which is not to say that children cannot play any more but which is to say that other games can be proposed to children.

Questions

What public policies are needed? Public steps must be explicit to be accepted, and Ademe has a strong role to play in particular in terms of communication. The ZEN study convened a citizens panel and a spontaneous recommendation was to put in place a massive communication campaign to call for a change in lifestyles.

Julien CAMACHO

The energy sufficiency competition 'Energy positive families programme', run by CLERC came originally from a European grant. The idea is to support households around the demand for energy, in order to enable citizens to act, which requires understanding and a technical mastery, always adapted to behaviours.

This approach can be adapted to other themes such as waste, transport, etc. Sufficiency, those are social relationships, puts the means in front of the needs.

We do not ask enough the question of time: citizen movements today knock on the doors of politics to raise a collective dissonance: we do not have time, what do we do?

Regulation is necessary, but the idea is to make sufficiency desirable. We come back to the idea of chosen, voluntary sufficiency.

Chiara's presentation showed that there are people who live an imposed sufficiency who have things to teach to people who have chosen sufficiency. That is not to say that imposed sufficiency has to continue, but that it should be in the discussion. Norms are made when people discuss conventions between themselves; the norm cannot be imposed without dialogue or in a dialogue where not all stakeholders are represented.

Questions

Do the people who take part in the programme view it as sufficiency, as a challenge?

They see it as conviviality; they are people who have the means.

Sufficiency is first, then come technical solutions. There are efficiencies that are more sufficient than others, like the energy efficiency of buildings.

A liberal society can set up sufficiency spaces with discussion to reintroduce a political space.

Barbara NICOLOSO

Created in 2006, Virage-energy creates energy planning scenarios. How can we conduct this reflection at the level of a territory? We apply the Negawatt scenario and we have shown that it is possible to reach the 'factor 4' objective with 3 scenarios. The objective is to equip the public process with more than 250 measures.

Sufficiency must be holistic ; it touches on societal organisation, in relation to individual property, and also the question of time. Leaving a centralised model to maximise re-localisation on territories. The association is consulted by collectives who are researching routes and solutions before action at the local level in the realisation of their Climate Plans.

- First scenario: fragmented society
- Second scenario: moderate society
- Third scenario: societal shift

In the third scenario, a 70% reduction in energy is possible at the level of the Nord Pas de Calais Region. The region is engaged in the 3rd industrial revolution, which is based on Jeremy Rifkins' theory, smart grids, etc.

Sufficiency also allows the creation of employment, of a quality and sustainable workforce for example in the construction, services, health... Student training streams can be aligned with energy sufficiency goals.

Questions

What do you think of the proposal to tax advertising campaigns to allow a re-equilibration in public communication? This proposal has not been adopted.

CLERC is against regulation from above ; the idea is to create local leaders and with ideas that make a splash.

In EDF's point of view, energy sufficiency is a growth relay. Consumption decreases, prices increase and new sufficiency services are offered to consumers.

From the point of view of CLERC, an EDF tariff, the progressive tariff, is a good idea but one which posed questions around equity and which did not last.

The modes of production are just as important as households.

Are local initiatives bigger drivers than national initiatives? Public budgets are collapsing and this is a problem. Measures do exist, put in place by individuals on a case-by-case basis, but there is a need for national mechanisms to achieve things on a large scale and to share the weight of the effort.

Another question that exercises the researchers is to know if sufficiency must be intentional.

Journalists also have a role to play to promote energy sufficiency in the political agenda.

Session 4 – Energy sufficiency and social transitions

Modérateur : Didier Bosseboeuf (ADEME)

Participants:

Yamina SAHEB, IPCC & Energy Charter (BE)

Marine CORNELIS, Nextenergiescons (IT)

Solange MARTIN, ADEME (FR)

Yamina SAHEB

Emissions are cumulatively growing, and our only opportunity is to act between now and 2030. Europe, with the last energy-climate package, failed to take the necessary steps to fulfil the objectives of the Paris Agreement.

The speaker presented the three IPCC scenarios. At what point do we enter the risk zone? What do we do with CCS? With CCS we can go into debt from the point of view of the climate. The demand reduction scenario includes less debt and no CCS.

The 'Shared Economic Pathways' scenarios take into account the North-South inequalities and also the inequalities within countries.

The 'Energy Demand' scenario includes 5 important parameters :

- Quality of life continues to improve, for developed and non-developed countries
- Urbanisation
- New services
- Users becoming actors in the energy system (prosumers)
- Important penetration of information technologies, as for example the telephone in Africa

The combinations of these determinants give birth to other diverse factors: small production units, change from an ownership model to a use model, digitalisation of everyday life, development of Southern countries that is different from that of the countries of the North.

Looking at the example of transport : sufficiency is not the key parameter in reducing energy use in transport.

Sufficiency is not only about energy, the concept must be extended.

Next stage : carrying out the decomposition of economies, and transposing modellers hypotheses into policy measures.

Marine CORNELIS

If you look at a room in a house in Eastern Europe, you can see that energy poverty is nested within poverty.

An uncensored report by the Trump administration suggests that persons of colour will be the first victims of climate warming. Women too will be the first victims of problems resulting from climate change.

There are today more than 5 million people in France who have problems paying their bills and who have mould on their walls. France is in the low average of Europe.

Energy poverty is a combination of many factors which are not necessarily chosen. It causes serious health problems.

Certain countries have realised that there is the problem of cold-related deaths, evaluated in England so there will be statistics. What will appear with climate change is the effect of heat waves on populations. EU Member States have not analysed these situations much.

There is a favourable European frame; the effects of energy efficiency are taken into account more, but there is much work still to be done. There are few public policies tackling energy precariousness.

3 main types of public policy :

- Market regulation (price limitation)
- Social policy (support for bill payment) – perverse effects; encourages spending but, linked to energy poverty, these are people who are already depriving themselves
- Renovation and energy efficiency

Short term measures ease but do not resolve the problems in their entirety. There are pilot projects that encourage sufficiency. ‘Warmth and Well-being’ in Ireland, where the doctor treats chronic health problems and prescribes an intervention on the quality of the building. Or rental of high performance appliances to households to help them with their choices.

Those who offer preventative measures and works must involve the landlord ; the tenant cannot do this alone. Landlords do not always have the means, and may have need of help.

In the approach to reduction and sufficiency, nuances must reflect different situations (those who already have little).

The project ‘Eurofound’ found that an investment of 3 Euros in the matter of renovation of housing recovered 2 Euros by a reduction in the costs of health care. This leads us to ask whether we must approach sufficiency as a public health matter?

Solange MARTIN

How palatable is sufficiency amongst the French population? What are the current political conditions? Ademe has put in place opinion barometers with consumers who are trying to answer these questions.

On energy actions, more than 50% of practices (switching off lights, reducing the temperature).

On consumption, around 50% of practices (buying vegetables in season, limiting the consumption of meat, and consuming less).

On transport, the constraints are structural. Moving around by bicycle or on foot – 35%; car sharing 9%.

On the trends: the curves are stagnant when looking at reducing the temperature of housing. A loss of 20 points on the standby of electrical appliances. Improvement in consuming less.

On responsible consumption, ecolabels are acclaimed, as well as the option to consume less (minority).

On acceptable changes, sufficiency is seen by 53% as a constraint and by 47% as an opportunity.

On accountability, currently at 51% (one of the lowest levels). Who is best placed to act? First answer: companies.

25% of French respondents think that climate change is an anthropogenic phenomenon, and yet scientists still have an important store of confidence.

There is trust in the local, the small, and public institutions like hospitals, schools etc.

72% of French respondents consider that economies profit owners of capital more than everyone.

Conditions for accepting drastic changes: that they are shared equitably between citizens and economic actors.

Conclusion: an approach to sufficiency only via individual actions is not realistic and considered illegitimate by a part of the population. There is an urgency to re-integrate the general interest in the social and energy transition.

Questions

Where can one find a report on these surveys? The qualitative can perhaps have the effect of a magnifying glass, the quantitative allows taking a little height.

Energy efficiency in energy precariousness; there are still 1/4 of obligations that are oriented towards precariousness, have you taken this into account? Measures in Europe are curative and palliative, and not long term.

Conclusion of the workshop and next steps

This workshop has been positively considered by the audience and speakers as one of the first institutional initiatives to debate energy sufficiency. It is thus recommended to follow-up this approach. Amongst the issues to discuss in greater depth: what or local policies should there be, and what is the sociology of their implementation? The more constraints, the more we can make the diagnosis that there will be more regulation in the policy mix and regulations that are more and more stringent.

We see a willingness to participate in a collective way. This workshop has shown us that we must act on poverty and sufficiency in parallel. We need to stop apologising for wanting to change things. We need to convince others and that means positive messages.

Join us at the eceee summer study!