--- 1st November week ---
First Edition

EXPLOR2ING CENTURY

Approaches of sustainable initiatives and degrowth in Hungary

ENERGY

Sziasztok,

We are Tom, Enora and Perrine, three students in Sciences Po Rennes and currently trainees at Cargonomia, a social cooperative in Budapest.

We are currently facing an ecological crisis raising, among others issues, political, social and economical questions. The current system is calling for indefinite growth whereas the planet has boundaries and limited ressources. So, when we asked ourselves about sustainable solutions and alternatives, degrowth catched our attention. Then we would like to learn from people who theorize about degrowth, put it into practice, but also from those who engage in ways that degrowth is likely to support.

This series of weekly papers are aimed to discover different fields of degrowth by interviewing people more or less related to it. Today, for the first edition of *EXPLOR2ING : Approaches of sustainable initiatives and degrowth in Hungary*, we are talking about energy with Béla MUNKÁCSY, team member of EnergiaKlub and teacher at the university ELTE in Budapest.

BÉLA MUNKÁCSY

Mr Munkácsy, how would you introduce yourself?

I am a geography and biology teacher, and an environmental manager. My workplace is Eötvös Loránd University (*ELTE*) in Budapest HUNGARY. I have a part-time job at EnergiaKlub a Non Governmental Organisation here in Hungary, one of the most influentials in this field. I live in a nice, but not too big house using basically 100 % renewable energies, powered by solar, biomass and ambient heat.

What were your motivations and your background to teach at the university and being a team member at EnergiaKlub* ?

I realised relatively early, on that, in many areas of our life, we need a paradigm shift : we need to approach the natural environment and its resources in a completely different way than we did in the 20th century. That century was a huge mistake of mankind.

My first area was waste management, but later on I realised there is a much bigger problem : energy management. I decided to switch my focus on it and I tried to deal with renewables energies sources. Then I realised it would be more important to understand the whole system of energy management. It is not a simple technological problem which can be solved by engineers, we need to include as many people as possible (sociologists, communication experts...)

Regarding the current events, and for example the last IPCC report*, what is your perception of the ecological crisis ?

Hard to answer. In Hungary, unfortunately, the focus is only on climate change. But there are several other problems like the loss of diversity. And I think there is one big problem which is not really well documented or well communicated : resource management and the inefficient use of natural resources. The resource efficiency is almost 1%, 99% of all resources will be heat loss and waste. I'm afraid that ordinary people don't have the proper insight into this.

ENERGY IN HUNGARY

Could you present the energetic situation in Hungary (global energetic mix, main geopolitical issues) ?

I think the biggest problem is dependence on imported energy sources. We need to import more than 95% of the oil and natural gas and we have 100% dependence on the field of nuclear energy. We mainly import from Russia and I believe that to develop a system so dependent on foreign resources is a serious strategic mistake.
Recently, all EU countries have had to work out their own new energy strategy. The Hungarian strategy states that the country will take giant steps towards self-sufficiency by building a new nuclear power plant - but it does not mention that all the technology and all the fuel will be imported, mainly from Russia.
Nevertheless, the first sentence of the document states that the main goal of the strategy is to achieve energy independence, and the most important role in this is played by a planned new nuclear power plant. This political statement is misleading information for ordinary people !

"The 20th century was a huge mistake of mankind."

We read that wind energy was prohibited in the National Energy Strategy elaborated in 2017. Do you know why ? Is it again a political decision ?

Nobody really knows. In the first version of the 2020 Energy Strategy, it was stated that we need more wind energy in Hungary. But somehow in the final version, this part was deleted. It must have been a decision of the Prime Minister, Mr Orbán. There is a rumor saying that he doesn't like wind turbines, it seems that it's enough in Hungary to forbid it. If this is the case, it is very sad, indeed.

We will have to engage in an energetic transition at some point. What should we plan for tomorrow's energy (about renewable energies, nuclear...) ?

We did a huge research at the university 10 years ago. We calculated all the renewable energy and efficiency potentials and took the sufficiency measures into consideration.
We used several software, especially the GIS *(the Geographic Information Systems)* as a methodology. That was its first use in energy planning in Hungary. The computer base analysis was made to understand renewable energy potentials and energy system efficiency for 2030 or 2040. The most important result is that we can reach the 100% renewable energy ratio by 2050 in Hungary. There are a lot of areas we need to change in this sense. For me, regulation is maybe the biggest challenge.

Why is regulation the biggest challenge ?

The decision makers don't have the knowledge in the field of natural sciences. Most experts depends on the current energy system. They played a significant role in triggering the environmental crisis. Those people who made the problems cannot give proper advice. They only have a strict technology focus but we should understand that without social sciences we can't create a sustainable energy system. In Hungary, the general idea is that the social scientists do not understand the energy system. Most engineers have such common preconceptions.

You, therefore, mentioned two main aspects to be reconsidered in order to begin a real energy transition : regulation and the lack of connection of scientific fields. What would be the other issues we should focus on ?

Indirectly related to the question of regulation, we should focus on education. In Hungary the educational system is extremely theoretical. Pupils and students in higher levels don't have knowledge about the energy transition. They don't learn about the solar PV system, solar collector, heat pumps or very practical things. For example, more than 40% of the Hungarian families are using firewood for heating. But they don't know how to use it properly or how to create good and efficient heating systems in households . How is it possible ?

To come back to regulation, I think that we have common problems about the taxation system or the externalities in the European Union. These ones could be solved by the European institutions, they should help the development of renewable technologies.
Unfortunately, in Hungary the government spends a lot of money on nuclear energy. It doesn't want European solutions and has strong ideas that the country can solve its own problem thanks to its own expertise, and that it doesn't need advice. For example, the only one nuclear power station we have can produce about 40% of the electricity demand, a relatively significant amount of course. But the government spend a lot of money to spread the misleading informations, that nuclear energy is clean, cheap and safe - without mentioning anything else.

There are several criticisms and limits to renewable energies we can highlight. What about their intermittent nature ? The question of storage ? The risk of a rebound effect* ?

Aha, I have a whole subject on this ! Again a very complicated answer. The weakest solution is storage. We need to use more efficient possibilities and the flexible price system* would be the biggest step ahead. Thanks to this, we could use Smart Energy System solutions*. As I heard some years ago in the Paris UN Climate Conference, it works in the heavy industry in Germany.

But there are other possibilities. We should optimise the energy mix. In Hungary, there is a strong focus on solar PV and nuclear power but nothing else. There is no mention of the resource diversity. It would be important to use flexible sources and technologies, for example biogas. We have a lot of green waste from agriculture. It would be possible to create big biogas capacity but it is missing from the National Energy Strategy. We also have geothermal sources : the second biggest sources, after Iceland, are in Hungary ! And of course we shouldn't forget the wind energy potential : 50% to 60% of the electricity demand could be covered by wind turbines.

But, for renewable energies such as solar or wind turbines, we still need to extract some raw material. It can cause some social and environmental externalities, even if we might hear about green and clean energies. What about that ?

Yes, it is definitively the case, but we need to compare. Of course we can use coil, oil and nuclear as energy sources in the future, but it means that we have just one decade and the whole system will collapse. There is resource demand in the field of renewable energy technologies but this resource demand is much lower than in other cases. Considering their whole life cycle, renewable energies are definitely the only solution. However we need to be careful.
The use of renewable energy does not always mean that we will produce in a sustainable way, but in this case at least there is a chance. With nuclear energy, unfortunately, we do not have the same chance, just think of the problems caused by radioactive waste.

Why ? Some experts in France, such as Jean-Marc Jancovici*, are saying that nuclear energy could be a choc absorber for the energy transition.

If we consider the whole life cycle of nuclear energy, it can't be sustainable at all. The bigger problem is the nuclear waste. Why don't you have a single project in the whole world which can be an example? Of course there are some facilities, but only for the weapons' nuclear waste, not for the civil nuclear industry.

For example, in New-Mexico*, in the USA, problems and malfunctions appeared in one particular weapon nuclear storage facility. So it's not really safe and easy to store the nuclear waste.

How is it possible to rely on a technology, namely the nuclear power station, if we don't have an existent solution for its waste ?! And we don't know the price.

We have some experience in Finland*. They are working on a storage facility, hopefully finished in 2025, so we still don't know the final price. For now, as I know the cost is really similar to the building of a new nuclear power station, which is a huge amount of money. Moreover we don't have experience about the procedure and the time frame of such a storage. A figure was published in a scientific newspaper, maybe 5 years ago, by the Swedish nuclear waste authority, which stated that the necessary and safe storage time of spent nuclear fuels can be 1 million years. Who will pay this cost just to keep the nuclear waste in a safe place ?!
And it was only one argument against nuclear energy*.

DEGROWTH AND ENERGY

What do you think about degrowth ? What is degrowth for you ?

For me it means that we need to reduce our footprints, somehow... for the short version !

We read that in a degrowth perspective we will have to reduce our energy production and consumption at some point. What do you think about this ? Are you calling for a stagnation, a reduction of energy, or can we keep going like this ?

It is important to increase energy efficiency. According to our calculations, it would be possible to reduce the energy consumption in Hungary by 60% or 70%, because the current efficiency is extremely low. There are huge consumer technologies that are really inefficient, for example the heating system of households or buildings in general.

But in a more global vision, do you agree that we won't be able to rely on technologies. At some point we will have to reduce our consumption?

I have an Hungarian example. We have a very remarkable project, called Solanova*, which is an energy renovation of an 8-storey building. The aim of this project was the so-called "Factor 10", which targets to reduce our consumption of natural resources by 90%.

This building renovation was also intended to radically reduce heat consumption, but the result depended not only on the use of the proper technology, but also on the attitude of the owners and occupants.
So 50 families received a user guide which was provided by engineers who planned the whole construction work. Among these families, we have noticed two types of behaviour leading to really different results. Some of them spent time to read the manual and tried to use the building in a proper way : they reached this 90% resource reduction. There was another group of families which didn't care about this description. The results were bad : in the case of these tenants, they experienced a significant increase in the internal temperature of their homes in the summer, so the modern technology did not work.

"It's an example about the importance of the people. If we have the technology it doesn't mean anything if we use it improperly."

I think that is a very important experience and it also means that this so-called human factor is crucial.

Regarding the human factor as you said, what do you think about all these alternatives based on sobriety, low technologies, or handcrafted technologies ?

We should first define what low tech* means. For me, for example, bicycles can be a form of low technology.

I have a nice mass strove in my house : a really simple technology. It works without any kind of electricity and it can produce most of the heat and hot water for the building.

With a degrowth perspective, the idea is that energy can be a common good and we should all have access to a certain amount of free energy. Do you agree with this idea ?

Theoretically of course I agree. But I don't really have ideas about how it would be possible to reach this level. But it must be the goal somehow.

Is it utopian or could it be realistic to reach this type of society and this approach of energy ?

Are people in Hungary really interested in this kind of information ? I'm afraid that 80% of the population isn't really interested. They don't care about anything, they are just living from one day to another.

So should we give information to people and make them participate in collective decisions-making in energy issues ? In other words, bring back real democracy ?

I think we have to go back to public education on this issue. It is vital to include such knowledge in the curriculum. At the same time, however, there is a serious general obstacle that I think needs to be tackled even in France, which is that party politics is so scandalously low-quality that people are fed up with political life and politicians, therefore people do not want to get involved. I fear that this is a general problem. Surely there needs to be some kind of paradigm shift in this respect.

REVIEW OF INTERVIEW AND ANALYSIS

The exchange with Béla Munkácsy made it possible to question the future of energy. Here are some concluding remarks and analysis on this week's topic.

Expectations :

- We wanted to learn about the usual energies such as nuclear, renewable energies, fossil energies and the specific situation in Hungary.
- We were curious about nuclear energy which is a controversial subject in France.
- Regarding degrowth we expected Hungarian solutions or critics of the need to reduce the consumption and production of energy.

Remarks :

- Global learnings regarding energy in Hungary -

- The energy field cannot be separated from a geopolitical context. The question of dependence on energy sources arises, especially in Hungary (the issue of energy autonomy is not yet resolved).
- Nuclear power seems to be as divisive as in France, but less questioned by civil society due to the current government's communication work and lack of information on other energies.
- There is a cruel need for multidisciplinarity in order to consider the global problems linked to energy and to think about a sustainable future. Scientific, sociological fields have been compartmentalised: we need a variety of views on the same problem.

- Summary of Mr Munkácsy opinion and expertise on energy -

- A certain hope in renewable energies and technologies to reduce energy consumption, in other words no immediate call to reduce consumption but a desire for greater energy efficiency.
- Degrowth projects and ideas can appear utopian or difficult to reach in Hungary where access to real information isn't ensured.
- At the level of scales of action, decision-making at the EU level seems to offer more hope for Hungary (despite a complicated positioning) than real individual accountability to Mr Munkáscy.

New questions / challenges :

- The potential of certain energies, such as geothermal energy in Hungary should be raised in the debate. It is completely ignored by the current government (as for wind power or biomass).
- The next social challenges concern education, knowledge sharing and information on energy for citizens - against the misleading policies of the government.

APPENDIX

EnergiaKlub, *Climate policy institute - applied communications* : The institute aims to create a new awareness in Hungary and makes to make "energy producers, users and perhaps even political decision-makers regard energy in a different way". For this purpose they carry out researchers, training courses and communication campaigns.https://energiaklub.hu/en/about-us

IPCC report : The Intergovernmental Panel on Climate Change "provides regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation". The sixth (last) report was published in August 2021 and once again raised the alarm about climate change. https://www.ipcc.ch/about/

EnergiaKlub project "This way ahead" : 100% energy scenario for the development of a renewable-energy based energy system https://energiaklub.hu/files/news/Bela%20Munkacsy%20-%20Hungary_1.pdf

Rebound effect : The rebound effect is the increase in the consumption of goods and services as a result of the reduction of environmental constraints, achieved through technological progress. https://www.pourleco.com/le-dico-de-l-eco/effet-rebond

Flexible price system : Flexible electricity pricing means that different rates will apply at different times throughout the day. If you choose a flexible pricing plan, you will receive lower rates during off-peak and shoulder times, with higher rates during peak times. https://jemena.com.au/help-and-advice/frequently-asked-questions/smart-meters/what-is-flexible-electricty-pricing

Smart Energy System : It is defining by the following key principles : it is a 100% renewable energy system, it consumes a sustainable level of bioenergy, it utilises the synergies in the energy system to maximise efficiency and reduce costs and it is affordable. In other words, it does not significantly increase the cost of energy compared to a fossil fuel based energy system - https://www.energyplan.eu/smartenergysystems/

Jean-Marc Jancovici : co-founder and partner of Carbone 4, associate professor with Mines ParisTech, author, consultant, founder and president of The Shift Project, member of the Expert Panel of the Ellen MacArthur Foundation, member of various scientific boards, co-founder and co-organizer of seminars - https://jancovici.com/en/who-am-i/

New-Mexico, USA, nuclear accident on the 14th February 2014 : https://www.latimes.com/nation/la-na-new-mexico-nuclear-dump-20160819-snap-story.html

Finland : ONKALO : Onkalo is a deep geological repository. It is currently the only one in the world with the will to be permanent. https://www.rfi.fr/fr/science/20111124-finlande-enterre-dechets-nucleaires-mais-pas-centrales

EnergiaKlub research "Operational Anomalies of Nuclear Energy" : https://energiaklub.hu/en/study/operational-anomalies-of-nuclear-energy-4981

SolaNova : 'the first "eco-buildings" project of the European Commission in Eastern Europe dealing with a "major renovation" of a large existing building"' - http://www.solanova.org/

Low Tech :"We can use "low tech" to qualify objects, systems, techniques, services, know-how, practices, lifestyles and even currents of thought, which integrate technology according to three main principles : Useful. Accessible. Sustainable, Low Tech Lab" https://lowtechlab.org/en