



Sustainability tomorrow: Identifying challenges, analysing approaches and assessing future strategies

Video Transcript

The Different Sustainability Dimensions of the Energy Transition

[Journalist Carrie Aikman] Consumers are told to reduce their energy consumption; demand for solar energy is soaring; Europe is facing an energy crisis: we see news headlines like these every day. We live in a time when we urgently need to transition to a sustainable energy future.

The reasons are manifold. For example, there's climate change; there's Russia's attack on Ukraine, forcing many countries to reduce their consumption of Russian gas; and there are changing working conditions, such as working from home.

We would like to show you a snapshot of this energy transition. Why is the transition to a sustainable energy system necessary? What needs to change? How can we change it? In order to find answers to these questions, let us first look more closely at the situation in Switzerland.

In addition to idyllic rivers and lakes, it is dams and canals that define the landscape of Switzerland. Hydropower supplies 60% of Switzerland's electricity, with few CO₂ emissions. In addition, nuclear power still plays a large role in production. In 2016, the Swiss electorate decided to phase it out. One third of electricity production therefore needs to be compensated.

To compensate it with fossil fuel-based power plants is not an option. There is also little scope for an expansion of hydropower. 95% of the environmentally friendly potential has already been exhausted. The World Wide Fund Switzerland therefore calls for energy conservation and a massive expansion of solar energy. This highlights that there is often a tradeoff between different ecological impacts in a sustainable energy transition.

The transition to a sustainable energy system also has a social dimension. Residential buildings, for example, need to be insulated and fossil fuel-based heating systems need to be replaced by ones based on renewable energy. This raises the question of who will pay for all of this.

In Switzerland, the majority of people live in rented accommodation rather than their own homes. At the end of 2021, 61% of the inhabitants of Switzerland were tenants or lived in cooperative flats. The Swiss Tenants' Association sees the necessity of the energy transition, but also closely monitors the social

effects. The association proposes that the necessary energy renovations and the conversion to renewable energies be planned together with the tenants. It fears that the measures could lead to massive rent increases. In addition, landlords might give notice to tenants to empty a house before refurbishing it. The association states that the energy transition is a task for society as a whole and must not be paid for by tenants alone. This illustrates the social dimension of a sustainable energy transition: energy services, including heating, have to remain affordable for everyone. The costs need to be fairly distributed.

The transition to a sustainable energy system costs money. But it also creates benefits and has an impact on the economy. We are now joined by Roger Langenegger. He is responsible for business and project development at Solarify. Solarify is a Swiss company that enables people to invest in solar systems on Swiss roofs, even if they don't own a house.

Mr. Langenegger - thank you very much for being with us. Solarify wants to support the energy transition with an interesting concept. Can you briefly describe it?

[Roger Langenegger] We want to democratise the energy system and enable anyone to become a part of it. Solarify is a PV crowd investment platform on which anyone can become a co-owner of PV projects that we install throughout the country. Thus, anyone, also people without their own roof space, can become a solar energy producer.

[Carrie Aikman] Where do you see the economic challenges of the Swiss energy transition?

[Roger Langenegger] Switching from a very centralised energy system to a decentralised and renewable energy system also requires that we decentralise how we finance this energy infrastructure. This is exactly where the broad public comes into play, because substantial private investment is also needed to make the energy transition successful. And crowdsourcing financial means through our platform is one way to do exactly that.

[Carrie Aikman] Thank you, Mr Langenegger.

Current energy systems are based on fossil fuels. They bring with them environmental, social and economic dangers, such as greenhouse gas emissions, waste, injustices, or substances that are harmful to life on this planet. Therefore, we need to transition to a more sustainable energy system.

As we have seen, the challenges of the energy transition are manifold and complex. Above all, we must remember that all the different dimensions – environmental, social and economic – are intertwined. We have to take them all into account on our path to a more sustainable energy system.

But what exactly do we need to transform to achieve such a sustainable system? We need to change the energy supply or the way we generate energy. This includes electricity, heat, mobility and even embodied energy. Because the transition is complex, it involves more than just changing technologies. In addition, we need to change energy demand. This includes changing individual energy consumption behaviour as well as structural conditions.

On top of that, the transition has societal implications. For example, we need to think about the political and economic frameworks and adequate governance arrangements required to transform our current energy systems into more sustainable ones for the future.

That leaves the final question: how can we transform energy systems towards sustainability? The short answer is: with three strategies.

We need a system that reuses its resources, for example renewable energies. We call that the consistency strategy. We need to use energy more efficiently, for example, with more efficient technologies. That's the efficiency strategy. But on top of that, we also need to pursue the sufficiency strategy, which means that we need to use less energy through behaviour changes.

These three strategies work together. They offer ways to transform our current energy systems into more sustainable systems.

These are interesting times we live in. In this course, you will explore in more detail how the shift towards a more sustainable energy future is a process in which different systems interact.