

Thesis for Energy Landscapes 3.0 - Bauhaus Dessau Foundation

Summer School, July 22nd -31st, 2011

1. We are experiencing the end of the fossil (and nuclear) era. Energy supply on a global scale has to be converted to renewable energies.
2. The type of energy supply makes an impact on organisation and design of space, from the level of individuals and single houses to the level of continental and global space structures. Space structures will change in response to a modification of the energy system.
3. The alteration of the energy system as a significant component of the civilising code will not only change space structures but also stakeholder structures, social models, value concepts, etc.
4. Designing a post-fossil future is not a pure technical but also a political, social and cultural task. The road to this future does not only require technical solutions but also a debate about potential scenarios, prerequisites and impacts. We need visions of the future in order to wage a societal debate about the designing of our future.

The fossil energy system tends towards a uniform, uninterrupted and ubiquitous supply of energy which is provided centralised and distributed to consumers area-wide and homogenously.

The post-fossil energy system of the Energyscape 3.0 will distinguish itself from the above:

- Hierarchic top-down energy supply will be replaced by an energetic interconnection of multiple stakeholders.
- The consumer will be replaced by the prosumer: A market participant who tends to simultaneously generate and consumes or intermediately stores and buffers energy. The separation between producer and consumer will be abolished.
- Energy will be generated where its is required, to the largest possible extent and as far as economically as well as ecologically and socially justifiable. (Subsidiarity principle)
- At the same time, supra-regional and transnational energy grids are necessary to compensate spatial and time differences between supply and demand within integrated large-scale networks. This is the only way to safely supply urban agglomerations which cannot be autarkic in terms of energy.
- The post-fossil energy system is not homogeneous. Local potentials of energy generation and transmission/exchange are differing, hence, the energy systems will spatially differentiate.
- The energy system will also differentiate in terms of time (tariffs, supply safety). The post-fossil energy system is not constant but intelligent and dynamic. It will react to changes in supply and demand. Communication and interaction will replace rigid standards.
- Major infrastructures of the fossil energy system will be converted for use by the post-fossil energy system.
- Energy systems will be less autonomous in the future and more integrated into other spheres/areas of life.
- Ignorance: We do not know the future technologies. The energy system must have the opportunity to develop without being focused on a specific outcome. This includes parallelism or competition of concepts (centralised or decentralised, ...) and learning capacity (no absolute, mono-structure solutions).

Bauhaus Dessau Foundation and future energy landscapes

The relevance of this issue

“Shaping the climate” is one of the Bauhaus Dessau Foundation’s areas of future work. The aim is to identify ways to develop a post-fossil fuel society. The Foundation’s work in this field focuses on three objectives:

- helping to eradicate the difference between environmental knowledge and environmental action;
- taking a closer look at the cultural side of climate change (changes to the everyday world and social practices, spatial structures, etc.) and assuming a responsibility for “shaping culture;”
- visualising knowledge to develop a better connection between specialist and general knowledge (communicating aesthetic knowledge).

This topic is an integral part of the direction to be taken by the Foundation’s programme of work from 2011 to 2014. Guided by the principle that “less is the future,” the Foundation aims to address current questions concerning demography, climate change and the financial crisis and develop its own contributions to link them to the way today’s living environment is designed.

Following on from the first projects – including a study conducted in collaboration with the German Federal Environment Agency and the Potsdam Institute for Climate Impact Research on Saxony-Anhalt’s post-fossil fuel landscape in 2050 – the Foundation is holding an International Summer School in July 2011, entitled “Energy landscapes 3.0.”

Generations of spatial planners, landscape architects, engineers and architects have continued to find new ways to engage with the theme “energy and the landscape.” For example, developing fossil raw materials and creating appropriate infrastructure and settlement landscapes, reclaiming post-mining landscapes and, more recently, planning and designing energy installations, such as wind turbines, solar farms, solar updraft towers and energy forests. The role of a planner or designer is often to provide aftercare or make improvements – doing repair work, integrating designs into the landscape in an appropriate way or offsetting ecological damage.

What ideas, parameters and proposals for a new, “ideal” energy landscape 3.0 can planners and designers use to stimulate and shape this future development, to give it direction?

In up to five different design studios, the International Summer School “Energy landscapes 3.0” will explore this question. The starting point is the Euro-African DESERTEC project, which is currently one of the key future projects involving the use of renewable sources of energy on a large scale. This commercial project is based on the premise that the sun’s energy, channelled through large-scale solar thermal power plants in the Middle East and North Africa, can be used to provide Europe with electricity. DESERTEC’s vision has received much praise, collecting the Utopia Award, for example, and being selected as one of the winners of the German federal innovation competition “365 Orte im Land der Ideen” (365 places in the land of ideas). It is a controversial mega-project

that has stimulated debate from a technical and economic perspective and also in relation to geopolitics and system theory. A pre-Summer School excursion will give participants the opportunity to visit new large-scale solar power plants in Spain and Morocco.

The Summer School "Energy landscapes 3.0" will look at this project as one of a number of different options for the future. Our fascination for these kinds of mega-project - and particularly Modernism's fascination with them through the course of its historical development - provides a way into the project. We will investigate:

- the development of transcontinental networks (oil, gas, electricity, etc.) and their impact on space and the cultural landscape;
- the evaluation of different models and their implications (transcontinental, and continental, networks of large-scale technologies versus local networks);
- the history of energy landscapes and transnational infrastructure projects, from Emil and Walther Rathenau (AEG) to Hermann Sörgel (Atlantropa) to Richard Buckminster Fuller.

The aim is to then feed the results of this analysis into scenarios and proposals to help design new, "ideal" energy landscapes from the perspective of landscape architecture and urban design.

Guided by internationally renowned designers from countries including the USA, Italy, India and Germany, and working in cooperation with the Federal Environment Agency and other experts, the participants will examine and visualize potential spatial changes and development perspectives for settlement structures and infrastructure. The results will be presented during the festival entitled "Über Lebenskunst" in Berlin's Haus der Kulturen der Welt in mid-August.