INNOVATION
THROUGH INTERACTION
HESSEN’S
“HOUSES OF”
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The success of a modern national economy depends crucially on its ability to innovate. However, innovation springs from inspiration, and inspiration from interaction – from get-togethers, exchanges of ideas and cooperation. This, broadly speaking, is the idea which prompted Hessen to set up the House of Finance, the House of IT, the House of Logistics & Mobility, the House of Pharma & Healthcare and, most recently, the House of Energy – as centres for interdisciplinary research and networking for Hessen’s key sectors.

Now, ten years later, we can say that the architecture of this approach has proven effective. Cooperation between universities, private companies and the State of Hessen has given not only valuable impulses for our location but also answers to social issues. Admittedly, this did not always function quite so smoothly at the beginning, but such problems always have to be overcome when venturing into new territory.

The “Houses of” have now successfully been established as an integral part of economic policy in Hessen. The aim of this brochure is to give you a comprehensive idea of their particular focal areas, lines of activity and special features. I wish you an enjoyable and informative read.

Tarek Al-Wazir,
Minister of Economics, Energy, Transport and Regional Development – State of Hessen
IN A NUTSHELL

The “Houses of” provide practical support for companies, universities and research facilities in Hessen and strengthen Hessen as a centre of economic and scientific activity.

HOW IT ALL STARTED

In 1993, Hessen was the first of the German federal states to start promoting regional cooperation networks. In the following years, this approach was expanded successively with financial support from the EU Regional Development Fund. A first major milestone was reached with the organisation of the first Cluster Contest in Hessen in 2008. At present, about 3,200 companies in Hessen are active in over 35 cluster and network initiatives of various sectors, for example medicine and health, automotive and mechanical engineering. Hessen is the home of top-class clusters such as the coordination centre of the South-West German software cluster, or the Ci3 pharma cluster, both of which were winners at the nationwide Top Cluster Contest.

These classical market-driven company networks provide the backbone for cooperation between local and regional companies, business developers and research facilities within a specific field, such as the optical industry or automation technology. Geographical concentration is an important feature of these clusters, since supporting infrastructures can come into existence only if there are a sufficient number of companies in the area. Clusters act as local or regional initiatives and as such strengthen the innovative capacity – and thus also the competitiveness – of their local members.

The “Houses of” in Hessen were set up as transregional platforms covering the key areas of Hessen’s economy and involving stakeholders from industry, science and politics.

However, these company networks focus on regional relevance, on the companies involved and to some extent on the research facilities within the area. As a result, they cannot make an effective contribution to Hessen as a whole. With their specific composition and their particular goals, these networks are not in a position to take part in or promote the societal discourse on a wider level which is of such importance especially for key sectors.

For Hessen as a whole to gain from this business interaction, it was necessary to set up institutions equipped to bring together stakeholders transregionally, achieve a comprehensive dialogue with society as a whole and draw up recommendations for these key sectors.
THE FIRST “HOUSE OF”

The preparatory work for the first Cluster Contest in 2008 was still ongoing when the Hessian Government resolved to adopt measures going well beyond classical cluster promotion. It decided to set up effective institutions acting at state level. The first stage was the opening of the House of Finance in May 2008. The House of Logistics & Mobility followed in 2010, the House of IT one year later, the House of Pharma & Healthcare in 2013, and finally the House of Energy in 2015.

The “Houses of” in Hessen were set up as transregional platforms covering the key sectors of Hessen’s economy and involving stakeholders from industry, science and politics. This triple helix model, as it is called, enables new forms of innovation systems based predominantly on interaction and communication.

Unlike the classical industry-driven clusters, the triple helix approach gives the universities greater importance in the context of innovation. Previously, science had devoted itself mainly to theoretical research, but the gradual shift towards application-oriented research in cooperation with partners from industry and politics meant that science was now better integrated in the innovation system. The essential feature of the triple helix model is a discursive approach on the basis of interaction between industry, science and politics.

CHARACTERISTICS OF THE “HOUSES OF”

As a rule, a “House of” is made up of leading companies in a particular key industry and at least one distinguished scientific institute also engaged in that field, together with representatives of the Hessian government. Right from the beginning, it constitutes an interdisciplinary and transregional platform for cooperative research, education and further training, as well as knowledge and technology transfer. It thus helps raise the profile of Hessen as a location.

Each “House of” has its own particular structure. There is no blue-print, as it depends by and large on the particular sponsors, their interests and the specific challenges of each industry. What they all have in common is the underlying composition, the sponsorship determined by the triple helix (industry, science and politics) and a similar performance spectrum. However, there are considerable differences in their actual organisation and their financing, due either to particular idiosyncrasies of the fields in question or to the requirements of the major stakeholders. A “House of” need not even have a permanent building like the House of Pharma & Healthcare. It may exist to a larger or lesser extent in virtual space.
The performance spectrum of the “Houses of” comprises five core areas.

1. Networking
Targeted networking enhances the degree of interconnection of Hessian stakeholders beyond the borders of Hessen. One major target is to make the “Houses of” visible at and beyond the national level and to secure them a firm place as centres of excellence in their fields. This network offers its members the benefit of establishing contacts among partners for market development and innovation projects. It also represents their interests at the national and European level.

2. Further training programmes and knowledge transfer
The breath-taking speed of technological change forces companies to constantly provide further training to their employees and to keep them abreast of the latest developments. The “Houses of” provide formats for exchange such as workshops or conferences, to ensure the flow of information about new trends. They also devise training programmes and even courses of academic study tailored to the specific requirements of the members, with a view to increasing their know-how and innovative strength.

3. Location Marketing
The “Houses of” actively engage in location marketing in order to strengthen the competitive position of Hessen and thus attract direct investments and investors to Hessen. They also take part in international fairs, conferences and trade missions, representing their members internationally and promoting Hessen as a business location.

4. Acquisition of third party funds
There is room for improvement among Hessian stakeholders when it comes to the acquisition of grants at the national and European level. The experts at the “Houses of” help their members with the important task of acquiring third-party funds for new research and development projects. This way, additional opportunities are created for innovation projects in Hessen.

5. Developing a research agenda
At these centres of excellence, new and promising fields of research emerge out of mutual consultation and support and are jointly agreed upon among partners. They are then linked up with both, theoretical research at the universities and practical application in the industry. At the same time, policy makers are kept informed about the fields for which companies and research institutes in Hessen currently need support.
The House of Finance combines several interdisciplinary research and further training activities in the area of finance and financial law at Goethe University Frankfurt. It is an open meeting place and cooperation forum for science, politics and industry.

Altogether, 170 scholars conduct research and offer courses at the House of Finance, among them 40 professors – one of the largest research groups on financial and monetary issues in Europe. Its scholars belong to the University’s Departments of Finance and Macroeconomics (Faculty of Economics and Business Administration) as well as Corporate and Financial Law (Faculty of Law).

The House of Finance also accommodates the following institutions either belonging to or affiliated with Goethe University and organised on a public-private partnership basis:

**Research**
- LOEWE Centre SAFE
  (Sustainable Architecture for Finance in Europe)
- Centre for Financial Studies
- E-Finance Lab
- Institute for Monetary and Financial Stability
- International Centre for Insurance Regulation

**Graduate programmes**
- Graduate School of Economics, Finance, and Management
- Ph.D./Doctorate Programme Law and Economics of Money and Finance

**Further training**
- Goethe Business School
- Institute for Law and Finance

The House of Finance opened its doors in May 2008 as part of the newly built University Campus Westend. It offers attractive premises and up-to-date technical equipment.
Location
The House of Finance benefits from its area of work, both in terms of content and location: financial research in Frankfurt, the European centre for the financial industry, bank regulation and monetary policy. The building, dating from 2008, helps to put interdisciplinary research into practice by breaking up conventional entities of professorship into smaller units and placing the professors next door to one another.

Networking
The House of Finance accommodates one of Europe’s largest research groups on financial and monetary topics and achieves interdisciplinary cooperation covering the areas of finance, micro- and macroeconomics, as well as law. However, the House of Finance is concerned not only with theoretical and applied research but also with communicating the results of their research to politics, professional practice and the general public. It does so through a wide range of public events and conferences, for example. Scholars from the House of Finance provide advice - either informally or as part of their institutional function - to numerous government agencies and international organisations in Wiesbaden, Frankfurt, Berlin and Brussels.
The House of Finance accommodates one of Europe’s largest research groups on financial and monetary topics and achieves interdisciplinary cooperation covering the areas of finance, micro- and macroeconomics, as well as law.

RESEARCH AGENDA/MAIN FOCUS AREAS

The modern financial world is extremely complex and made up of constantly changing business models and shifting customer requirements, differences in international legal frameworks and the introduction of new technologies. Therefore, sustained progress requires solid scientific findings, based on impartiality and diversity. The latter can be achieved, for example, by adopting a variety of objects of research, methodologies and paradigms.

The main focal areas of the various units at the House of Finance are:

- Financial institutes and financial markets: market stability and regulation
- Central banks and monetary policy: monetary and currency stability
- Household Finance: investment behaviour of private investors
- Corporate Governance and Corporate Finance
- Law and Finance
- Insurance markets and regulation
- E-finance

Publications in the best and internationally renowned scientific journals have helped build a strong reputation for the research, further training and knowledge transfer at the House of Finance. The next step is to translate these and other research results into the jargon of the decision-makers in politics, industry and public administration and to integrate them into academic and non-academic teaching.
The House of IT is a para-scientific centre for the promotion of innovative information and communication technologies in Europe, jointly sponsored by industry, science and politics. Its activities are centred round digitalisation, which the members of the House of IT aim to influence for the benefit of companies, universities and the general public. This can be successfully done only through an interdisciplinary approach and as part of a cooperative partnership between industry, science and politics.

The core activities of the House of IT include research and knowledge transfer, further training and teaching, but focus also on the creation of new enterprises and growth. Under the umbrella of the House of IT, topics of future relevance are explored and further training programmes promoted. In addition, support is provided to start-ups and small and medium-sized enterprises (SMEs). The House of IT was founded in Darmstadt in 2011 and is organised as a non-profit organisation.
UNIQUE FEATURES

Location
The offices of the House of IT are based in the City of Science Darmstadt, which comprises companies, universities and research centres. It forms part of Europe’s major IT region and pools expertise especially in the field of cyber security research. There is hardly any other region, which offers greater competence in the areas of software and ICT throughout Europe than the Frankfurt Rhine-Main metropolitan region and the area around the southwest German software cluster, which is coordinated in Darmstadt. In addition, Frankfurt houses the world’s largest data node and numerous data centres.

Interdisciplinarity
Effective projects can only be carried out for the benefit of industry and society when there is interaction of all stakeholders. To this end, the House of IT brings together managers and IT decision makers from companies, high-ranking representatives of the political sphere and acknowledged scientists with a view to furthering the digitalisation process in industry and society. Supporters of the House of IT include - in addition to the State of Hessen - major IT providers, IT users and consulting companies, SMEs, renowned IT research facilities, universities and public corporations.

Networking
ICT is an interdisciplinary technology. On this basis, the House of IT regularly brings together prominent representatives from regional and communal politics, regional universities and the industries. It does so especially during the course of its various events in order to promote intersectoral cooperation. Such meetings focus both on scientific aspects and on practical implementation of present-day ICT topics, including their socio-political and legal implications. Members of the House of IT also have opportunities to take part in interdisciplinary fora.
As a platform, the House of IT brings together managers and IT decision makers from companies, high-ranking representatives of the political sphere and acknowledged scientists with a view to furthering the digitalisation process in industry and society.

Research and knowledge transfer
In collaborative research projects, the House of IT assumes the role of initiator, coordinator, transfer partner or project partner. Depending on the particular project context, it covers selected topics and makes its specialist staff available for purposes of needs assessment, conception and implementation. In cooperation with Darmstadt Technical University, the House of IT runs, among other things, a digitalisation panel. It reflects on the current state of digitalisation in industry, politics and science and recommends courses of action for the stakeholders concerned. The results from previous empirical studies of this kind form part of the core of the “Digital Hessen” strategy. (Premium) members can initiate joint research projects with the House of IT and other partners. Specially qualified staff members are given an opportunity to obtain a scientific qualification (doctorate).

Further training and teaching
Together with partners from industry and science, the House of IT engages in employee development and further training. At present, this is realised mainly through the development of an Executive Master of Digital Transformation starting October 2017. The syllabus takes into account the issues relevant to specific industries, sectors or clusters in its conceptualization and implementation. In addition to executive postgraduate studies and open enrolment programmes, issues such as digital sovereignty and transfer of digital competencies play a major part. The House of IT is committed to promoting the development of suitable training programmes. In addition, the House of IT is able to introduce to its member companies qualified young persons, by virtue of its close cooperation with universities and training facilities. In this way, students can be introduced to the House of IT (premium) members, for example for their bachelor or master theses. In addition, recruitment workshops are provided for particularly outstanding students and doctoral candidates.

New enterprises and growth
A major objective of the House of IT is the sponsoring of new enterprises in the field of digital economy, thus further consolidating Hessen as an IT region. The House of IT pools existing programmes and activities in the proposed region and brings founders into contact with funding institutions, scientific facilities and established companies. Special focus is also placed on knowledge transfer and on networking with the start-up initiatives of the universities (HIGHEST/Goethe Unibator/Kassel University).
HOUSE OF LOGISTICS & MOBILITY
The need for transporting passengers and goods is ever increasing. This presents major challenges to the logistics and mobility sector: how will it be possible to ensure long-term prosperity and freedom of movement – for which mobility and logistics form the basis – without impairing value creation or putting an ever-greater strain on the environment?

To develop solutions for challenges of this kind, the competence and experience of a great number of different experts is needed. It is the task of the House of Logistics & Mobility (HOLM) to make use of these competences, to pool them and to manage them productively. The networking and innovation centre in Frankfurt am Main operates as a centre for interdisciplinary research and development and at the same time as a centre for education and knowledge transfer. It is thus in a position to open up prospects for economic, ecological and socially beneficial – i.e. sustainable – logistics and mobility. As an international innovation platform, the HOLM offers a space for overall networking and communication to a large variety of users. The HOLM provides established businesses and start-ups with opportunities for continued growth, creates education and further training programmes in the academic field, and helps establish contact with qualified young persons.
UNIQUE FEATURES

Location
It would be difficult to find a more central location than Frankfurt’s Gateway Gardens district just next door to the airport. Nowhere else in Europe are air, rail and road transport more closely interlinked than in the Airport City. The HOLM is situated in the immediate vicinity of Frankfurt airport and the motorway interchange “Frankfurter Kreuz” - one of the most easily accessible locations in Europe. The great accessibility of the location is rounded off by the pronounced internationality of the Frankfurt Rhine-Main region, which makes up yet another unique feature of the HOLM.

Building
The building owes its distinctive character to its modern, sustainable and future-oriented architecture, which is especially conducive to networking and fresh ideas. The ideal site and its excellent accessibility make the HOLM a superb event location. With 30 event rooms of various sizes over a total area of 3,400 square metres, the HOLM can provide suitable rooms and areas for events of all kinds – from meetings for small groups with up to twelve participants to large conferences with up to 500 persons.

Networking
Experts, managers, scientists, politicians and representatives of civil society use the HOLM platform for cooperation on neutral grounds. This creates the conditions needed for interdisciplinary and intersectoral projects. At the same time, the impartial platform ensures a degree of diversity which can be found nowhere else.

With its own characteristic event formats, such as the fireside chats or the HOLM brunches, the HOLM also helps its partners and tenants to network with one another, thus creating added value for the stakeholders in the logistics and mobility sector. The functional concept of the HOLM in terms of space and organisation was developed jointly with the Fraunhofer Institute for Industrial Engineering IAO. It ensures a maximum degree of flexibility, networking and cooperation and is a distinctive feature of the HOLM. With this functional concept, the HOLM facilitates the breaking up of old structures and the development of new ones. To this end the spatial concept is based on non-territorial principles and is characterised by a high percentage of commonly used areas. The spatial structure unites universities and companies in equal proportions with the aim of bringing the most talented and creative experts together.
RESEARCH AGENDA/MAIN FOCUS AREAS

In cooperation with representatives from the industries, the House of Logistics & Mobility has analysed megatrends and drawn up seven fields of action with the cross-sectoral theme of digital transformation. Premium partners and the HOLM have agreed on the following topics, forming the agenda for the work of the HOLM.

- Urban Logistics & Mobility
- Energy & Climate
- Society in Logistics and Mobility
- Intelligent Transportation Systems
- Next Generation Aviation, and
- Innovative Value Creation Design

Each field of action has been allotted certain focal themes which serve to further specify that particular field and to indicate the projects that are being developed and implemented by the HOLM. For example, the focal themes for Urban Logistics & Mobility include Urban Commercial Transport and Less than 4-Wheel Mobility; for Innovative Value Creation Design they include 3D Printing/Networked Production and Supply Chain Finance.

The HOLM brings the worlds of logistics and mobility together with those of industry, science and politics and, in its role as a pioneer and partner, fosters inventions and paves the way for innovation.

In logistics and mobility, the drivers of innovative ideas are the dynamic development of the world economy, the challenges presented by social changes, and the opportunities and risks arising out of global networking and information overload.

Present-day global developments such as the reduction of carbon emissions, digitalisation of the industry and demographic shifts make it increasingly urgent to find efficient and sustainable solutions in these sectors.

The HOLM brings the realm of logistics and mobility together with those of industry, science and politics and, in its role as a pioneer and partner, fosters inventions and paves the way for innovation.
In spite of all the progress made in human medicine, many diseases even today cannot be treated satisfactorily, especially those which are becoming increasingly frequent due to demographic change. The number of innovative drugs is stagnating, while healthcare costs are rising. These healthcare problems can be solved only with a comprehensive interdisciplinary strategy which integrates the many ongoing initiatives in industry, science, politics and society. Hessen offers an excellent environment for a strategy of this kind. For this purpose, the House of Pharma & Healthcare pursues the objective of pooling German competence in the area of health and pharmaceutics. It thus aims to become an important catalyst and incubator across the entire field of drug research. To this end, it promotes cooperation among all stakeholders in the health and pharma sector. It acts as a public-private partnership network, bringing together various different interests along the pharmaceutical value chain as a means of coping adequately with the challenges confronting drug research, patient care and health policy. By integrating and coordinating the application of biomedical knowledge, the House of Pharma & Healthcare intends to help close the existing innovation gap in drug development.
UNIQUE FEATURES

Location
With the high concentration of institutions based in Hessen, it forms a unique regional cluster in the health sector and in drug research. In addition to numerous large and medium-sized companies operating internationally in the pharmaceutical industry and in medical technology, most of the more than 250 companies in Hessen’s biotechnology sector are engaged in medical therapy and diagnostics. On the academic side, nearly a dozen universities train junior researchers and managers for the drug and health sector. Furthermore, the Paul Ehrlich Institute in Langen is a Federal Institute and as such is the national regulatory authority for biopharmaceutics and acts as an advisory body at every stage of the authorisation process.

Networking
The House of Pharma & Healthcare integrates stakeholders at all stages of the pharmaceutical value chain, including universities, non-university research institutes, the health industry, politicians, statutory health insurances, patients’ organisations, physicians, pharmacists, associations, health initiatives and regulatory authorities. Their regular exchanges foster mutual understanding, facilitate consensus building and pave the way for cooperation. These synergies will serve to bring the importance of Germany in health policy and drug development more clearly into focus again. They will also give an additional boost to translational research and help to make knowledge from biomedical basic research more rapidly available for the benefit of the patient; the observations made here can then serve as feedback for further research.

The graduate school for Translational Research Innovation – Pharma (TRIP) was set up in Frankfurt as a new type of practically oriented academic concept for young academics in the field of patient-oriented biomedical research. One of its new features is that several doctoral candidates work together in interdisciplinary project teams. The first year group gained their doctorates in July 2015. About 20 doctoral candidates received their doctor’s degree from the Frankfurt Goethe University. The new doctorate holders were congratulated by Hessen’s Prime Minister Volker Bouffier.

Front row from the left: Professor Dr Dr Gerd Geisslinger (Speaker of the LOEWE Centre TMP and the graduate school TRIP), Professor Dr Birgitta Wolff (President of the Goethe University Frankfurt am Main), Volker Bouffier (Prime Minister of Hessen), and Professor Dr Josef Pfeilschifter (Dean of the Medical Faculty of the Goethe University Frankfurt am Main).
In addition to its overall aim of promoting sector-specific and interdisciplinary networking at the regional, national and international levels, the House of Pharma & Healthcare focuses its activities on three core areas – education, dialogue and research.

The House of Pharma & Healthcare provides support for the training of doctoral candidates in the interdisciplinary and cross-functional graduate school TRIP (Translational Research Innovation – Pharma). Jointly with the Goethe Business School, it has developed a part-time study course for a pharma-specific Master of Business Administration. It is the only one of its kind throughout Germany and started in the winter semester of 2016. The House of Pharma & Healthcare also promotes the education and further training of qualified employees such as medical technical assistants and biology lab technicians.

In its discussions on perspectives, in its symposia, in its scientific conferences and at its Annual Meeting, the House of Pharma & Healthcare provides a neutral platform for discussions of controversial topics. By involving all stakeholders along the value chain who are concerned with pharma and health, it facilitates the formulation of viable proposals for the solution of present-day problems.

The House of Pharma & Healthcare kick-starts pre-competitive collaborations for the research and development of new drugs. It thus helps scientists and companies to use research resources to best effect, to avoid unnecessary duplication of research work and to achieve employable results in a short time. The House of Pharma & Healthcare also cooperates closely with two LOEWE Centres – the one for Translational Medicine and Pharmacology (TMP) in Frankfurt, and the one for Insect Biotechnology and Bioresources (ZIB) in Giessen.

The Annual Meeting of the House of Pharma & Healthcare is more than an impartial discussion platform for all parties involved in the pharmaceutical value chain. It also gives young researchers an opportunity to come together with experts and exchange ideas about future trends in the pharmaceutical sector.

Minister of State Stefan Grüttner, Professor Dr Dr Gerd Geisslinger (Speaker of the LOEWE Centre Translational Medicine and Pharmacology, TMP) and Professor Dr Manfred Schubert-Zsilavecz (President of the House of Pharma & Healthcare) together with doctoral candidates from the LOEWE Centre TMP.
The energy turnaround is a fundamental transformation of the energy system involving the transition from fossil fuels to a renewable, carbon-neutral energy supply with minimum marginal costs. Although basically a technical issue, it must be considered in a much wider context. The energy sector (electricity, gas, heat) is crucial, but so are structural and regulatory policy, finance, industry, information technology, housing, mobility and – not least of all – the citizens. The provision of energy is equally important as its efficient and flexible use.

The House of Energy supports the energy turnaround in Hessen with impulses and with tangible study and project results, and indicates suitable implementation paths. The focus is on both, impulses for Hessen and impulses from Hessen.

It defines itself as a think tank with support from companies with various lines of activity, service providers, energy suppliers, research facilities and the Hessian government. The House of Energy is a provider of ideas, a competence centre and a platform for communication, coordination and transfer. For the purposes of specific projects it assumes the role of initiator, moderator, organiser and mentor.
Location
Kassel, together with the North Hessen region, is a regional hub for research-oriented innovation in the energy turnaround. Kassel University and the Fraunhofer-Gesellschaft are making significant contributions. However, leading companies such as Viessmann, Rittal and SMA with products serving the entire global market also play an important role. The implementation of the energy turnaround in North Hessen is already well advanced, involving different systems and companies across the board. The commitment of citizens and communities, as well as the initiatives of the local and regional energy supply companies are conducive to this development. Additionally, industrial companies such as B. Braun are inspiring examples for the efficient use of energy in their production processes.

Networking
The House of Energy is building up a network of disseminators which includes politicians, journalists and media representatives, as well as associations and public interest groups. The aim is to establish close contact with the start-up scene. The House of Energy platform intends to launch concerted initiatives jointly with the Hessian government to implement the energy turnaround. Cluster formation and cluster management are essential means to this end. The energy turnaround is an integration project. This needs to be reflected in the approach. It is probably unique in its form throughout Germany, particularly once cooperation with the Houses of IT, Finance and Logistics & Mobility and (with certain limitations) Pharma & Healthcare is further expanded, and once full use is made of the options offered by the Hessen Agentur.

On behalf of Hessen as a whole
Although North Hessen is Hessen’s energy turnaround laboratory, the House of Energy is under obligation to Hessen as a whole. Central and South Hessen also play an important role with highly active municipal utilities, as well as with innovative universities focussing more closely on materials and component research. The challenges presented by the Rhine-Main urban region for the energy supplies of tomorrow are considerable. In the future this region will be one of the five largest conurbations in Germany. This densely populated area is a banking centre, an industrial area, an international transport hub and, not least of all, houses the world’s largest data node. Despite the volatility of the future system, energy must be made available with a high standard of performance and in a confined space. It must possess a maximum degree of security and reliability, but at the same time be affordable and environmentally compatible.
The following points can be seen as strategic guiding principles of the House of Energy:

- **Proper understanding of the system** leads to the formulation of options and necessities.
- **Technology** turns ideas into reality.
- **The legal and regulatory framework** influences cost effectiveness and implementation.
- **Acceptance** determines implementation.

The holistic approach of the House of Energy also takes account of non-energy related topics within the context of integrated energy. Interdisciplinary work is of particular importance. It is especially important to mention the correlation between the regulatory framework and the use of technology, and between acceptance and technical options.

Central issues for research and development, pilot plants and field tests are:

- **Materials and components** (creating options),
- **Energy systems** (making use of options), and
- **Organisation and transformation principles** (enabling options, impact on regulatory framework).

In summary, all this has to do with improved efficiency and increased diversification. In detail, systems need to be created, which stabilise irregular and intermittent flows of (electrical) energy from renewable sources. To achieve this, the flexibility of both grid structures and of energy demand needs to be improved. In addition, better storage technologies and suitable control algorithms for volatile decentralised energy systems need to be developed. It is crucial that energy is used efficiently, especially in the context of the mobility and heat sectors.