Colleagues, ladies and gentlemen,

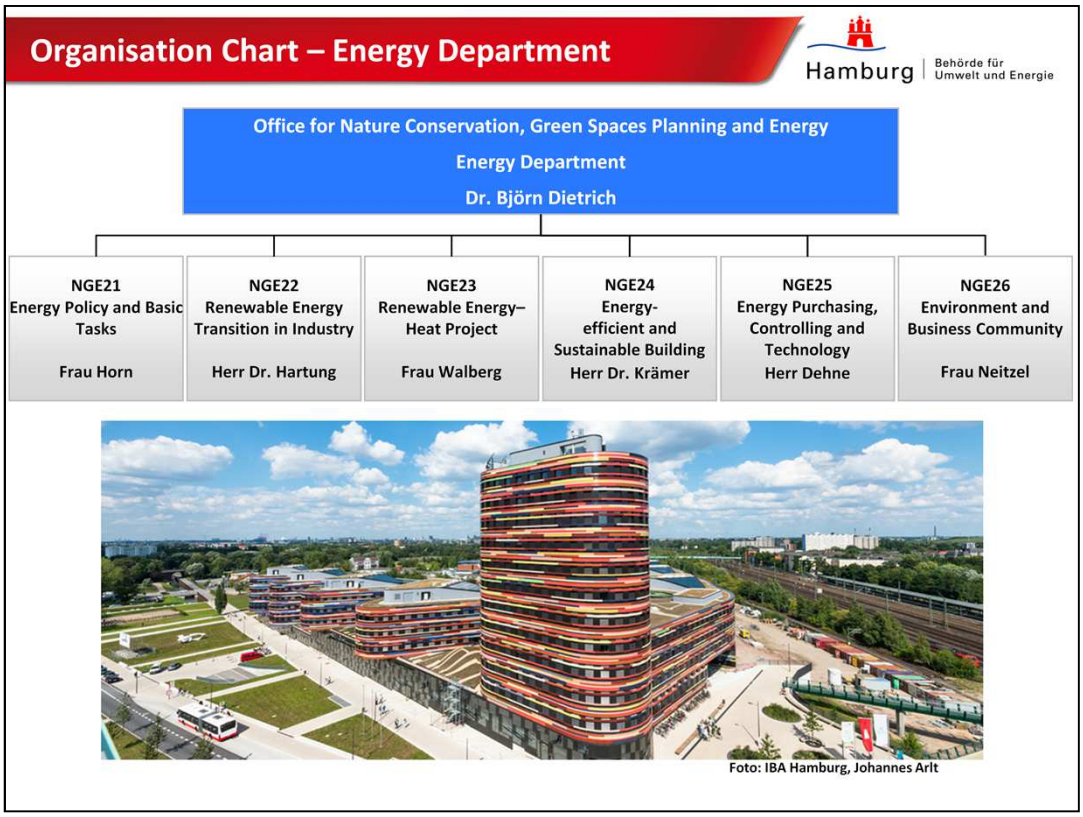
Thank you for inviting me to today's event. I am delighted to take this opportunity to present to you the cornerstones of Hamburg's regional participatory governance approach concerning the local energy transition.

I am particularly grateful to the organizers of this international conference and to our wonderful hosts – Spain, the Province of Barcelona in Cataluña and the beautiful city of Barcelona. I hope to have time to see more of the city.

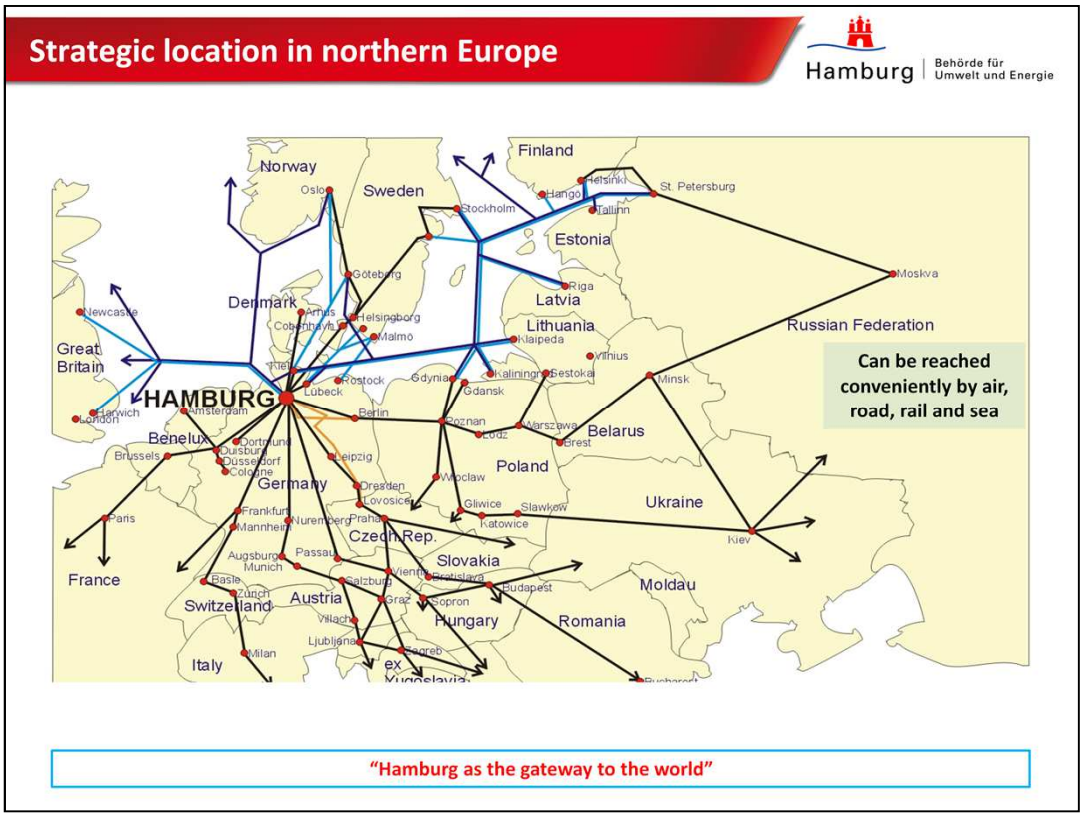
The economist Mancur Olson once said: *"The rise or decline of a nation depends on the extent to which its society is capable of institutional change."*

A significant condition of this capability for change is political participation by citizens as a foundation of democracy. But there is disagreement about the forms, methods and scope of participation.

By public participation we mean the participation of the public in political decision-making and shaping the political context. We do not see the term as being clearly defined, but it usually denotes participation that goes beyond electing political representatives to parliament. The term is applied to decisions in local politics and planning.



To begin with, a few words on my Energy Department. It consists of 6 sections with a staff of about 45. We provide intensive support to business enterprises and households in Hamburg in their effort for energy conservation, increasing energy efficiency, and use of renewable energies; we are doing this mainly by providing promotion programmes, consultation services and networking.



Before I go into public participation in Hamburg in more detail, though, I would like to tell you a little about our city.

- Hamburg is a city state and is one of the 16 federal states that go to make up the Federal Republic of Germany.

- As a port city, Hamburg has traditionally seen itself as the "gateway to the world". The Port of Hamburg is Germany's biggest sea port and is one of the 20 largest container ports in the world. Since 1996, Hamburg has been home to the International Tribunal for the Law of the Sea (ITLOS).

- With its airport, and its role as a transport hub, Hamburg as a whole is one of the most important logistics centres in Europe. Practically all European states are accessible from Hamburg in logistical terms.

Hamburg: Booming trade and service metropolis

Hamburg | Behörde für Umwelt und Energie

	Hamburg	Region as a whole
Area	**755 km²**	**26,000 km²**
Population (2014)	**1.8 m**	**5 m**
Employees paying social insurance	**0.8 m**	**1.4 m**

- Nearly half the area of the city is devoted to green spaces, water, woodlands and agriculture.
- Highly industrialized, economic hub with over 500 industrial enterprises and home to Europe's second largest port.

The Free and Hanseatic City of Hamburg is the centre of the Hamburg Metropolitan Region, the sixth largest of Germany's 11 metropolitan regions. Our region is the economic centre of northern Germany.

The metropolitan region of Hamburg is home to 5 million people, of whom 1.8 million live in the city. Over 300,000 people commute daily into the city for work.

Our metropolitan region is one of the most competitive regions in Germany and Europe.

Hamburg is a highly industrialized, economic hub with over 500 industrial enterprises and home to Europe's second largest port with corresponding hinterland transport.

Hamburg is a creative media centre, growing immigration hub, and a green waterside metropolis with a high standard of living.

With 755 square kilometres, the city area is seven times the size of Paris and two and a half times the size of London. As a result, Hamburg's living and housing standards are particularly high. With 30 square metres of living space per person, Hamburg has the biggest average living space of all major cities in the world.

Hamburg is a remarkably green and blue city – wherever you go, you will find water, parks and green open spaces.

Energy networks in Hamburg

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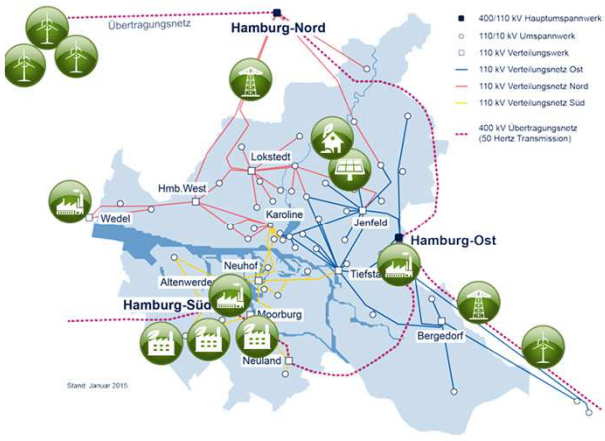


The district heating network in Hamburg is one of the biggest in germany.

District heating network

- 812 km lenght
- 460.000 connected residential units
- 8 Power plants
- 5.000 GWh District heating output

Gasgrid

- 7.000 km length
- 156.000 connections
- Gas output 19.440 GWh p.a.

Electricity grid

- 27.000 km power lines
- 300 electricity suppliers
- 1.128.723 supply points
- Electricity output 12.400 GWh p.a.
- Renewable energies and cogeneration input 3.000 GWh p.a.

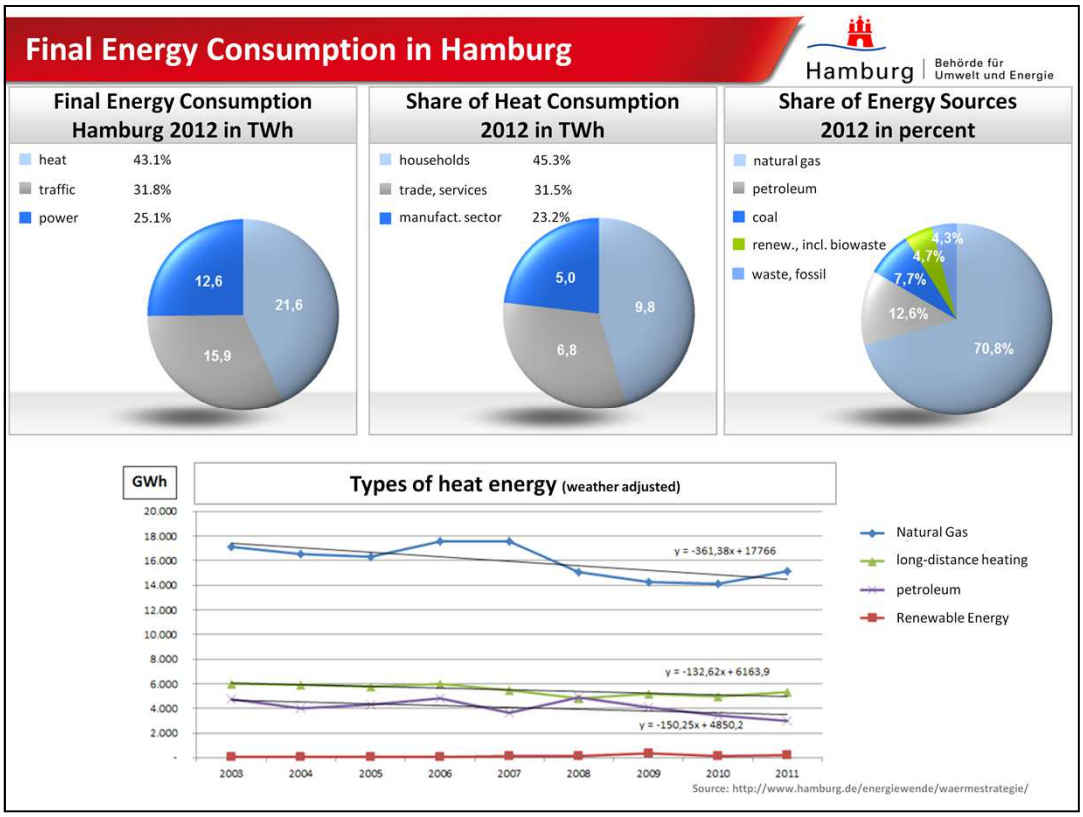
Hamburg's citizens and private sector have a high energy demand that needs to be satisfied in an affordable and, ideally, climate-friendly manner:

- An Annual power consumption of 12,400 GWh (gigawatt hours), annual natural gas consumption of 19,440 GWh and 5,000 GWh of long-distance district heating per year.

At the same time, Hamburg has an excellent energy network infrastructure that has to cope with transporting power to this energy-hungry city.

27,000 km power lines with more than 1.1 million supply points, a gas infrastructure with over 156,000 connections and a distribution network for district heating comprising some 460,000 residential and commercial units.

Cities are responsible for most of the emissions we cause, and are large consumers of energy. But technological developments that could limit climate change are also devised and used in cities.



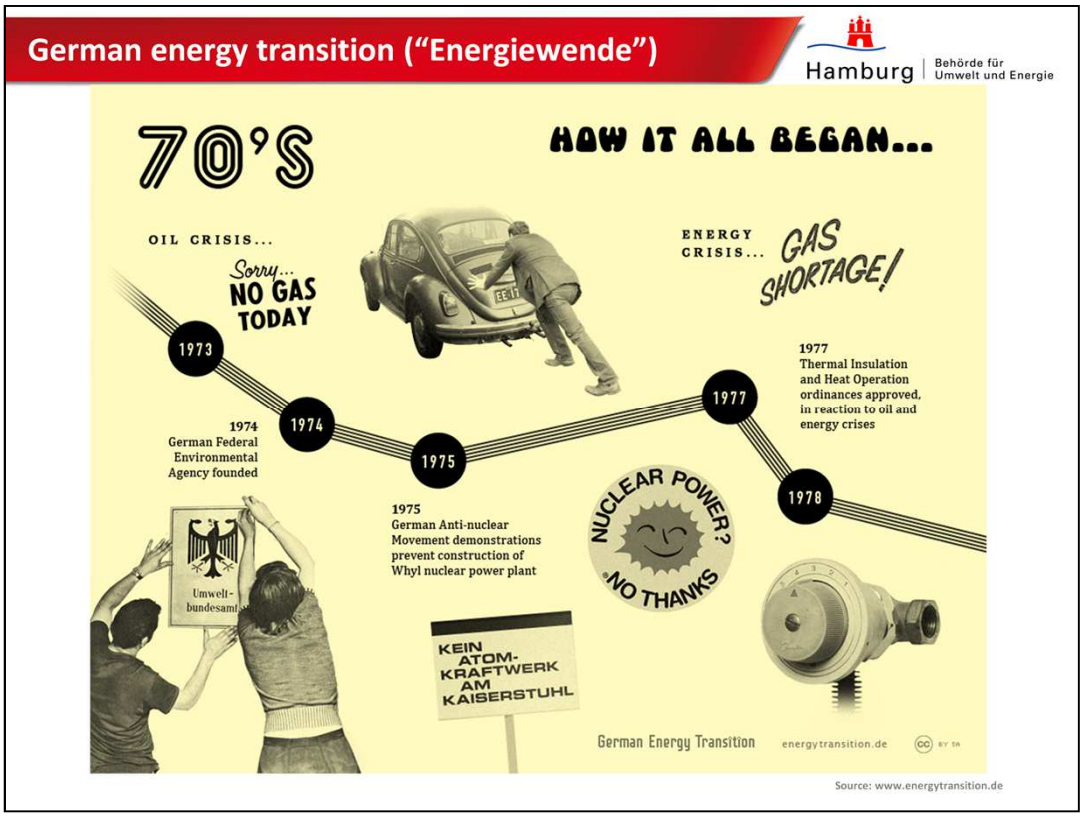
Hamburg is meeting the challenges of climate protection and climate change even now.

Final energy consumption with roughly 50 TWh is important; about 43% is consumed in the heating sector. The main consumers in this field are mainly households with around 45%.

Heat sources are based mainly on natural gas, followed by mineral oil and coal.

The share of renewable energies in the heat market is low, in particular so because of the fact that the biggest share (roughly 80%) is generated through crediting of waste incineration.

The long distance heating covers around 21.5% of Hamburg's heat consumption. The shares of the heat energy types overall have been slowly declining over the past few years.



How did the German Energy Transition – what we call the "Energiewende" – actually begin? What are its origins?

The German *Energiewende* is rooted in the anti-nuclear movement of the 1970s and brings together both conservatives and conservationists — from environmentalists to the church. The shock of the oil crisis and the meltdown in Chernobyl led to the search for alternatives — and the invention of feed-in tariffs.

The term "*Energiewende*" did not just come about in the past few years. In fact, it was coined in a 1980 study by Germany's Institute for Applied Ecology. The oil crisis led to the first energy efficiency policies.

In 1986, the reactor in Chernobyl exploded, and radioactive rain fell on Germany. The Germans lost their faith in the safety of nuclear power, but did not know yet how to replace it. Chernobyl not only shocked people worldwide but also led to a stronger movement against nuclear power and towards renewable energy.

A German national coalition of the social-democratic and green parties (in power until 2005) initiated the Renewable Energy Act in 1998 and the first wave of nuclear power phase-out in 2000.

The Renewable Energy Act (EEG) foresees a steady and cost-effective increase in the share of electricity generated from renewable sources to a minimum of 80 per cent as a proportion of gross electricity use by the year 2050. This share is intended to reach 40 to 45 per cent by 2025 and 55 to 60 per cent by 2035.

Germany's Renewable Energy Act guarantees full cost compensation to cover the actual cost of a specific investment in terms of size and technology. The rates offered are guaranteed for 20 years starting in the year of installation to protect investments, but the rates drop for newly installed systems each year to put price pressure on manufacturers. To reduce costs further, the EEG is about to be thoroughly overhauled. From 2017 on, the level of compensation for costs incurred by larger systems will no longer be set by legislation but established by tender.

German energy transition (“Energiewende”)

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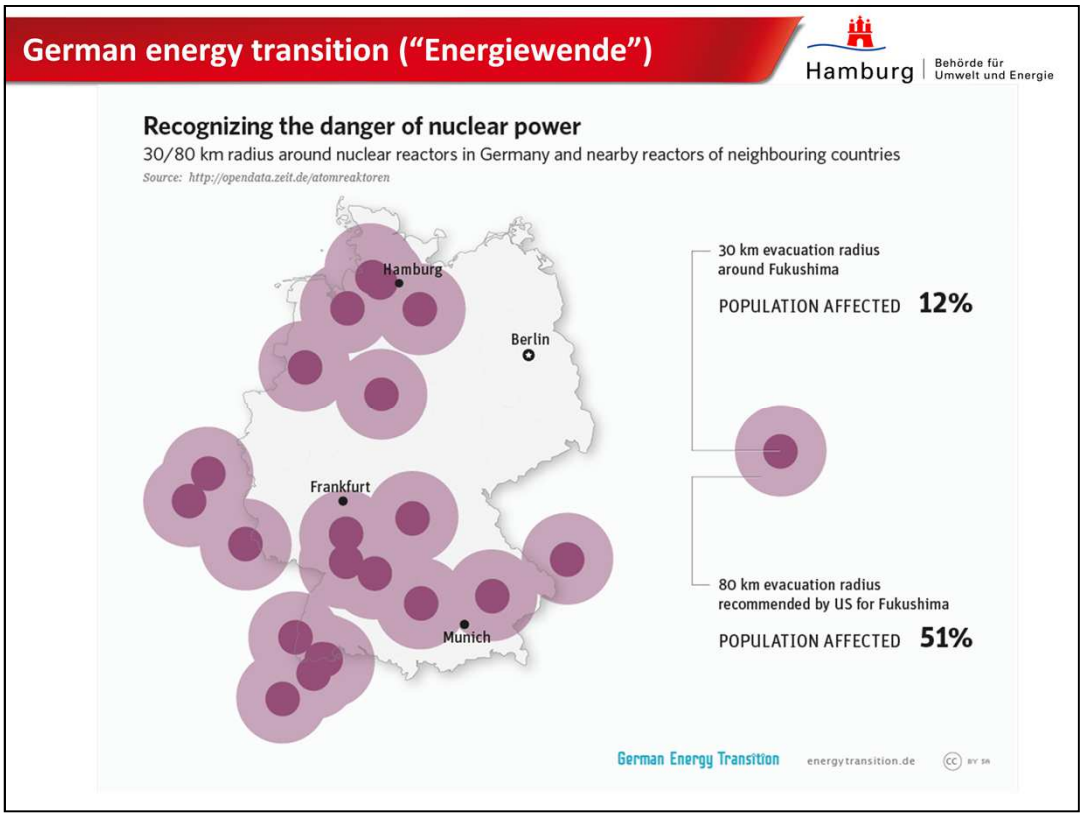
Fukushima Daiichi nuclear disaster between 12 March and 15 March 2011

After a rollback in 2010 (Laufzeitverlaengerung) the nuclear accident in Fukushima in 2011 stimulated an even broader consensus in Germany for phasing out nuclear power and intensifying the energy transition.

Today, ecology and responding to climate change are inextricably linked with energy and economic policy issues.

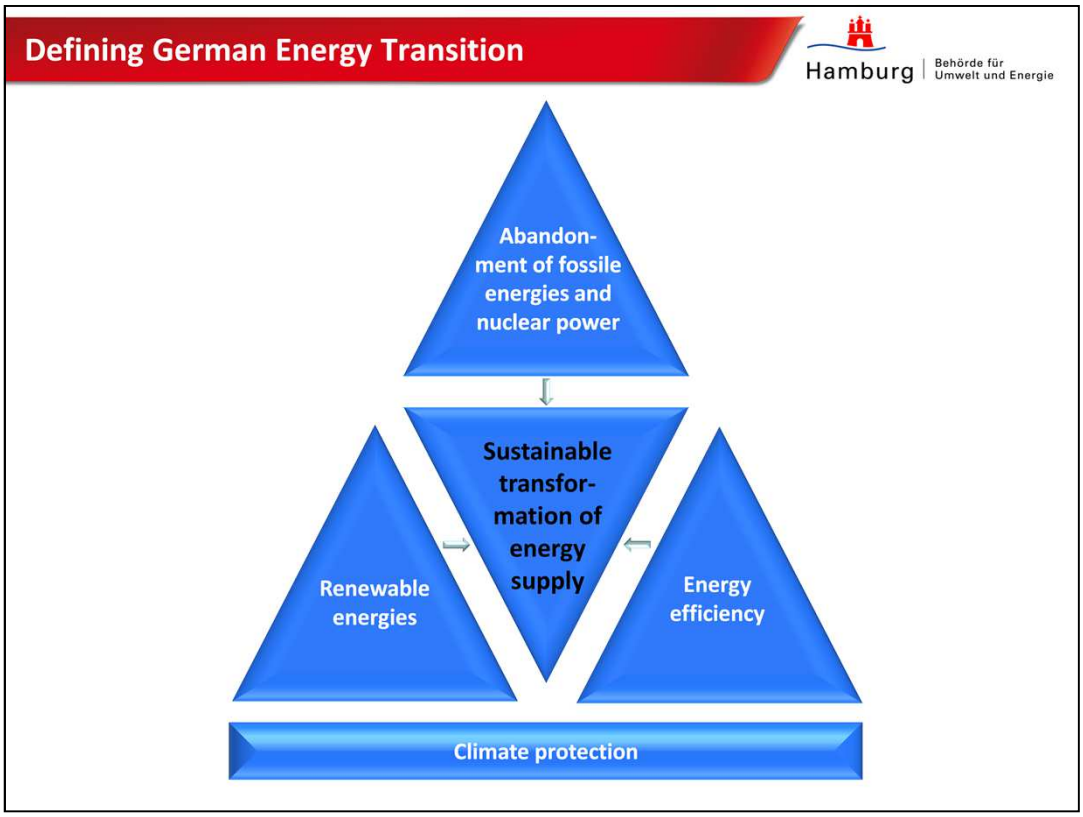
Of course, the environmental policy goals of energy transition also have positive impacts on human health (atmospheric pollution, radiation and long-term climate change). It is a question of safeguarding our living environment.



Permit me a brief digression on the subject of our living environment and human health – in this case the danger to life and limb.

On this slide I have depicted the effects on Hamburg of a reactor catastrophe. In the event of a nuclear catastrophe, Hamburg would fall within the evacuation zone for a number of atomic power plants. In the worst case, up to 5 million people in the Hamburg Metropolitan Region would be affected.

In Germany as a whole, 51 per cent of the population lives within potential evacuation zones.



The onset of climate change – but above all the reactor disaster in Fukushima – has radically changed energy policy in Germany.

Nuclear power, the supposed "bridging technology", has turned out to be a dead end. There is now a consensus in German society that we need the energy transition, which is a political, economical and a technological process.

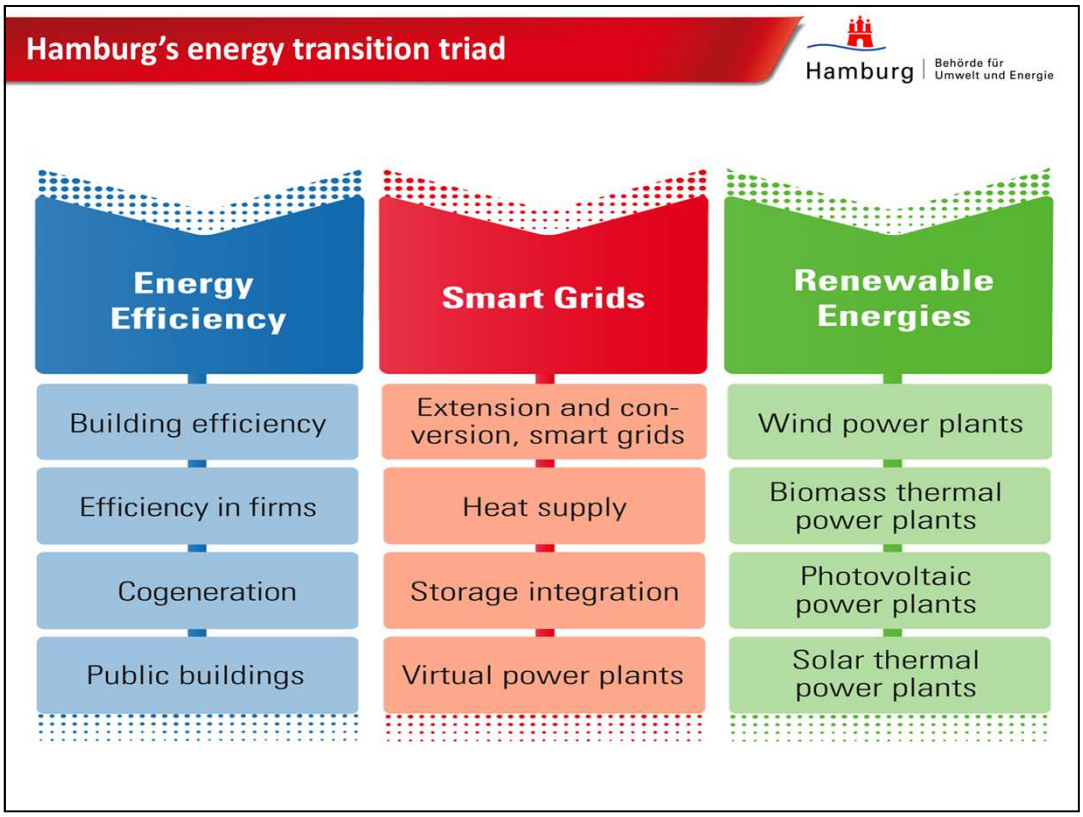
But what actually is this energy transition? The energy transition is a project that, broadly speaking, aims to realise a sustainable energy supply system. The cornerstones of the sustainable transformation of energy supply are as follows: Abandonment of fossile energies and, in particular, of nuclear power, in favour of: renewable energies, energy efficiency and climate protection.

These key cornerstones now enjoy political consensus in Germany, and are reflected in the German federal government's energy concept and in action taken by the federal states and local authorities.

But it's no easy task: not only do many new power plants have to be constructed and energy grids adapted within a short space of time. The basic conditions also have to be developed further to facilitate the emergence of viable energy markets and the use of a reasonably priced technology mix. This is a great challenge, particularly in a liberalised EU internal energy market.

I would like to point that, depending on the political viewpoint, there are some more demands on the energy transition, especially:

- decentralising energy supply in technical aspects and
- Democratisation of the energy supply. This means to break up the political and economical power of the biggest five german Energy Companies (RWE; E.ON, Vattenfall, EnBW, EWE), citizen envolvement and more public participation



"But how is the energy transition getting on in Hamburg?" you may ask. Strategically, the "energy transition, made in Hamburg" rests on three pillars:

First of all: greater energy efficiency:

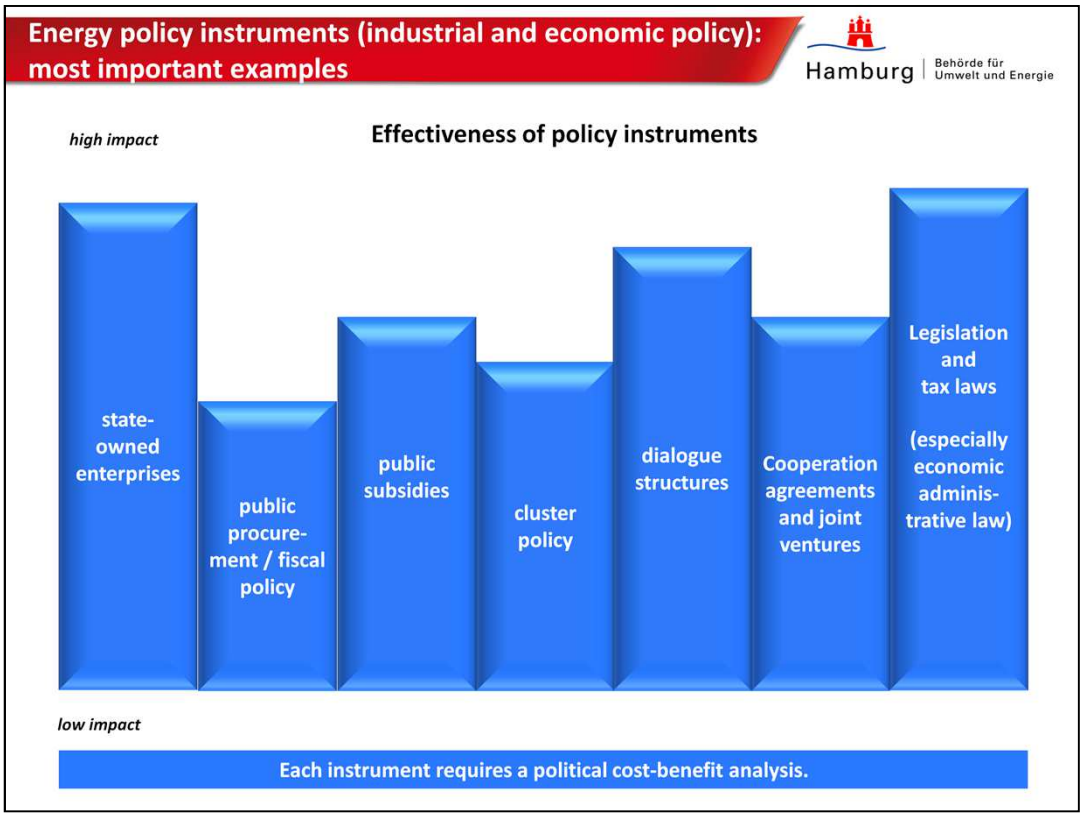
The best energy is energy that is not consumed because it does not have to be produced in the first place. A city like Hamburg requires a great deal of energy. A lot of it can be saved without encroaching upon quality of life and economic strength. More economic heating technology, better building insulation, modern power plants and the optimization of operational processes offer a vast array of opportunities for the more efficient use of electricity and heat. Regarding energy prices, this is also worthwhile from a financial perspective.

The second main pillar of the "energy transition made in Hamburg" comprises "**smart", in the sense of sustainable, grids**:

The electricity and natural gas grids must be extended and converted; heat supply and energy storage require further development in order to bring the fluctuating generation of energy from renewable sources in line with demand situations that vary depending on the time of day. A trivial example: when the wind is not blowing, no wind power is generated. When the sun isn't shining, no power can be generated from photovoltaic power plants.

The third pillar is the expansion of renewable energy:

To achieve this, production capacities need to be expanded.



Let us turn now to how public participation can sensibly be organized, and in what areas. It is up to the administration to flesh out the principles set by politics. What political tools do we actually have, and which ones are also suited to meaningful public participation?

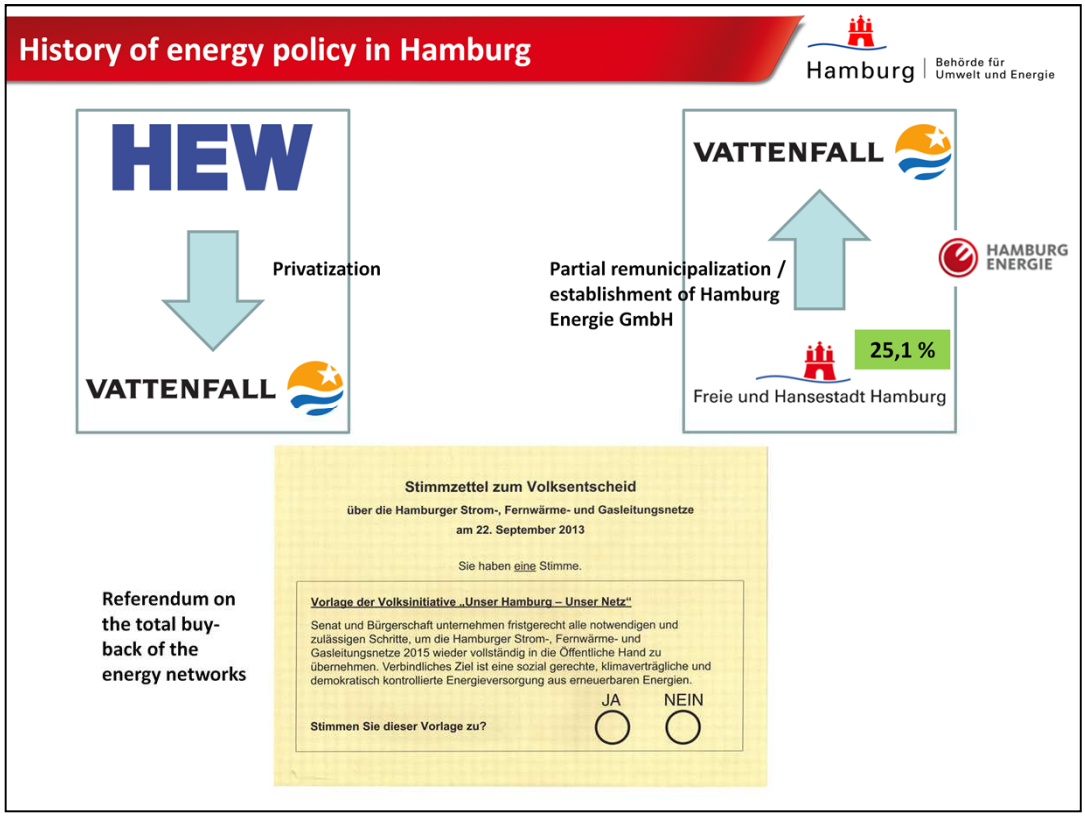
On this slide we show a selection of what we believe are the most important universal policy instruments concerning energy policy which are at the same time largely congruent with the instruments available to industrial and economic policy. The instruments shown are not structured, defined and rated scientifically but from a strategic policy perspective – the perspective of the administration charged with putting flesh on the policies.

What “regulators” and “levers” can political decision-makers use when it comes to making energy or industrial and economic policy? In our view, they are state-owned enterprises, public procurement and fiscal policy, public subsidies, cluster policy, dialogue structures, cooperation agreements and joint ventures, legislation and tax laws.

Each of these instruments has an effect but also a political cost. This cost can be a financial one, or it can be at the expense of the interests of individual stakeholders.

Evaluating the effects and “costs” of these instruments is the responsibility of policy-makers, in other words it comes down to a political cost-benefit analysis.

To give you just one example: in countries where large state-owned corporations have a major influence, political decision-makers will assess public companies’ costs and benefits differently from those in countries where the principle of economic policy is to keep state influence on the economy to a minimum.



Let us now take a brief look at the history of energy policy in Hamburg. In the 1990s and the first years of the new millennium the Hamburgische Electricitäts Werke (HEW) were sold stage by stage to the Vattenfall Group to balance Hamburg's budget. The HEW then comprised electricity and district heating operations as well as gas supply through its subsidiary, HeinGas.

The sale process took place before the unbundling, reorganization and regulation of the German electricity market. The gas operation was later sold on by Vattenfall to the E.ON Group.

The sale was and still is controversial, politically and socially, particularly regarding its impact on municipal services. Vattenfall's poor image and the construction of the coal-fired power station in Hamburg's Moorburg district acted as drivers for the return of energy supply in Hamburg to local control.

In politics and society it was quickly realized that the privatization was a mistake as far as energy and climate policy were concerned and that the city had lost a great deal of influence. In view of these disappointed expectations, the former Mayor of Hamburg, Ole von Beust, who was a significant supporter of the last privatization rounds, commented that "…a public sector monopoly has been replaced by a quasi-monopoly in the private sector."

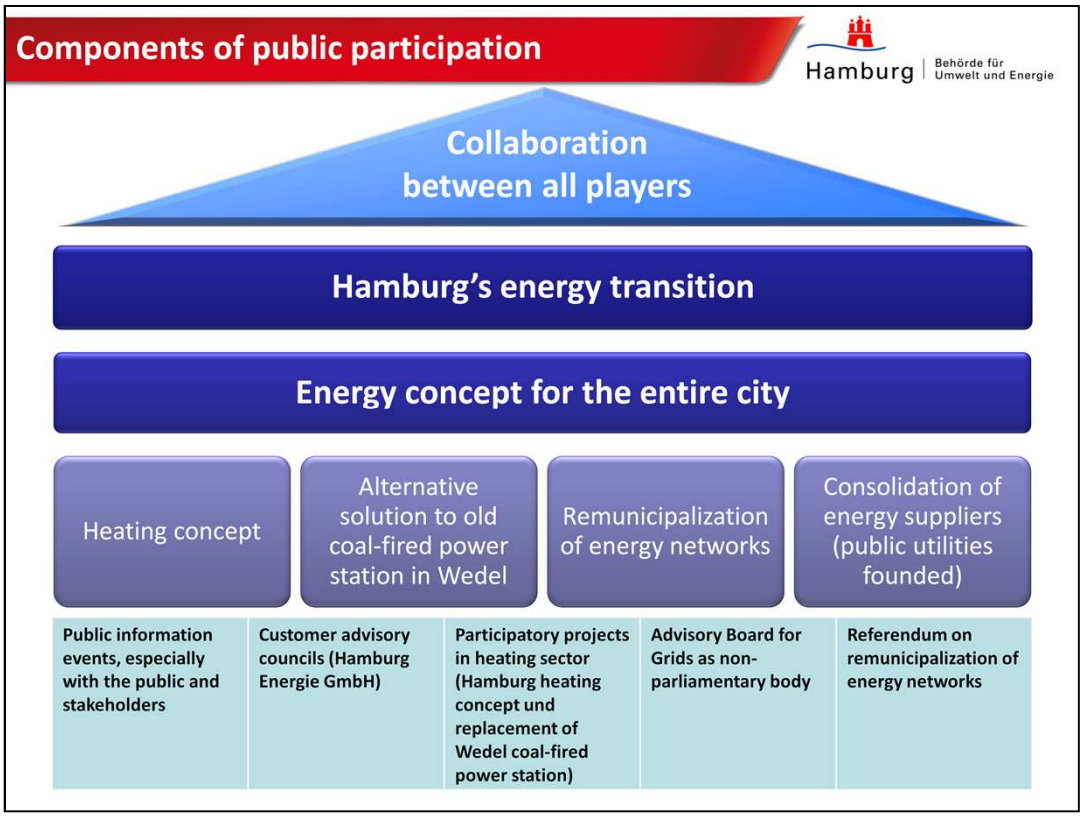
As a consequence, the municipal company "Hamburg Energie" was set up in 2009. It provides Hamburg households with green power and is active in the renewable energy sector.

In 2011, as a reaction to the political debate about a complete return of the energy networks to public control, the City of Hamburg negotiated with the electricity, district heating and gas grid companies to take over a 25.1 per cent share.

This was followed on 22 September 2013 by a successful referendum on the energy networks that was initiated

by stakeholders in society. The referendum called for a complete public buy-back of the electricity, district heating and gas grids with the binding goal of a socially just, climate-compatible renewable energy supply under democratic control.

The Hamburg Senate began implementing the referendum decision by drawing up contractual agreements with Vattenfall and E.ON. This was followed in January 2014 by the remunicipalization of the electricity grid. For tax reasons and on the basis of a careful company evaluation, purchase options were agreed for the district heating and gas grid operations that can be taken up in the 2019 financial year. The takeover will be in the form of a share deal and of course includes taking over the workforce.



Energy transition in Hamburg is an ongoing process. At some point we will have achieved it. On the way, we will be confronted in Hamburg with numerous political, economic and technological issues.

Currently on the agenda in Hamburg are the development of a heating concept and a solution for replacing the old, obsolete coal-fired power station in Wedel on Hamburg's western boundary.

The buy-back of the energy grids and the exploitation of synergies will lead in the medium term to the setting up of public utilities that will group together energy infrastructure and other municipal services such as water supply and sewage disposal.

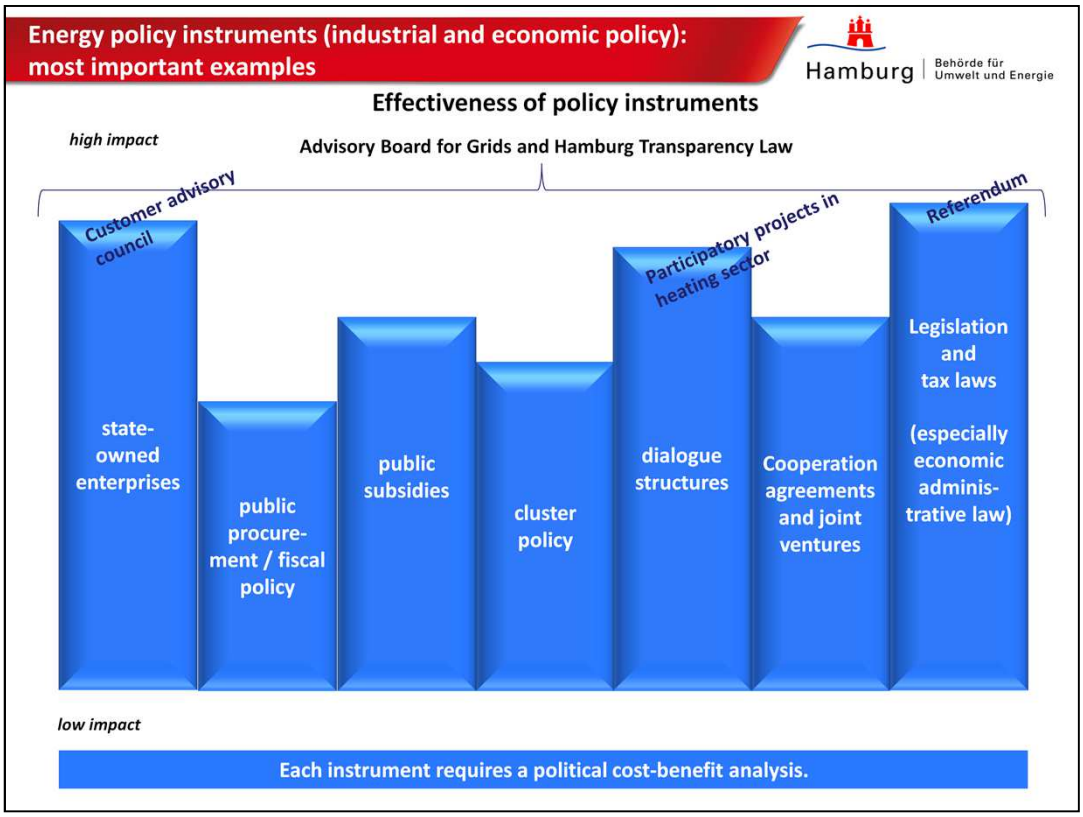
The Hamburg public have participated here at various levels and continue to do so. Let me briefly outline the most important participatory projects:

During its passage through the Hamburg Parliament, the referendum was supported by respondents from the citizens' initiative. These included nature conservation groups, employee representatives and other non-profit organizations.

Last year, when a heating concept was being developed, there was a participatory process on the future of Hamburg's heat supply. Those involved included representatives of the Hamburg Parliament, the local energy suppliers, non-profit organizations such as nature conservation groups, business representatives and consumer organizations. Workshops were run on heat supply in Hamburg.

More or less the same participants, with the addition of experts, took part in a participatory process to develop an alternative to the obsolete coal-fired power station in Wedel.

Together these developments led to a desire by the Hamburg Parliament to set up a non-parliamentary Advisory Board for Grids. Society's main stakeholders are represented on it. I will tell you more later.



How do these components of participation correlate with the policy instruments? The components are arranged in our tool box as follows:

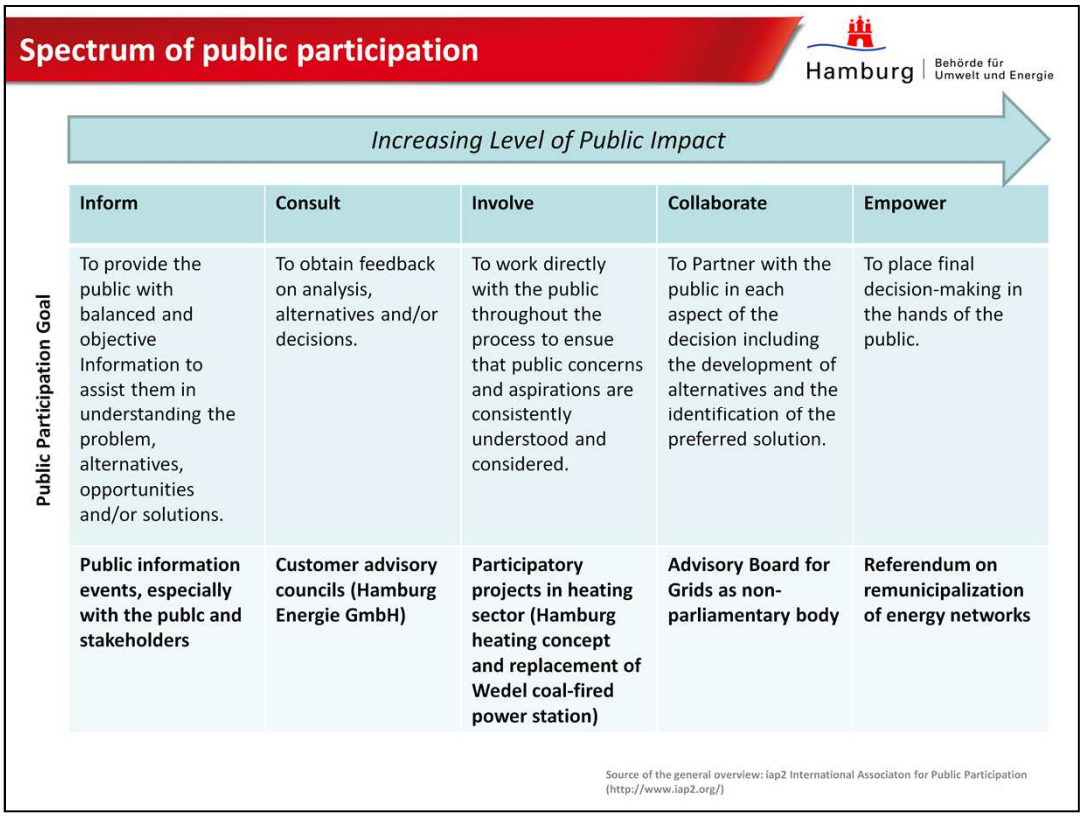
- Customer advisory councils in the state-owned enterprises.
- Advisory Board for Grids in all instruments.
- Participatory projects in the dialogue structures.
- Referendum in the legislative instrument.
- Public information events in all instruments.

In addition, Hamburg has a Transparency Law governing the publication of certain information about administrative procedures, especially

- procedures,
- contracts and
- expert opinions

concerning public services.

This information is posted by the ministries on a “transparency website”. It is an important basis of public transparency and is an important indirect aid to enabling and supporting public participation.

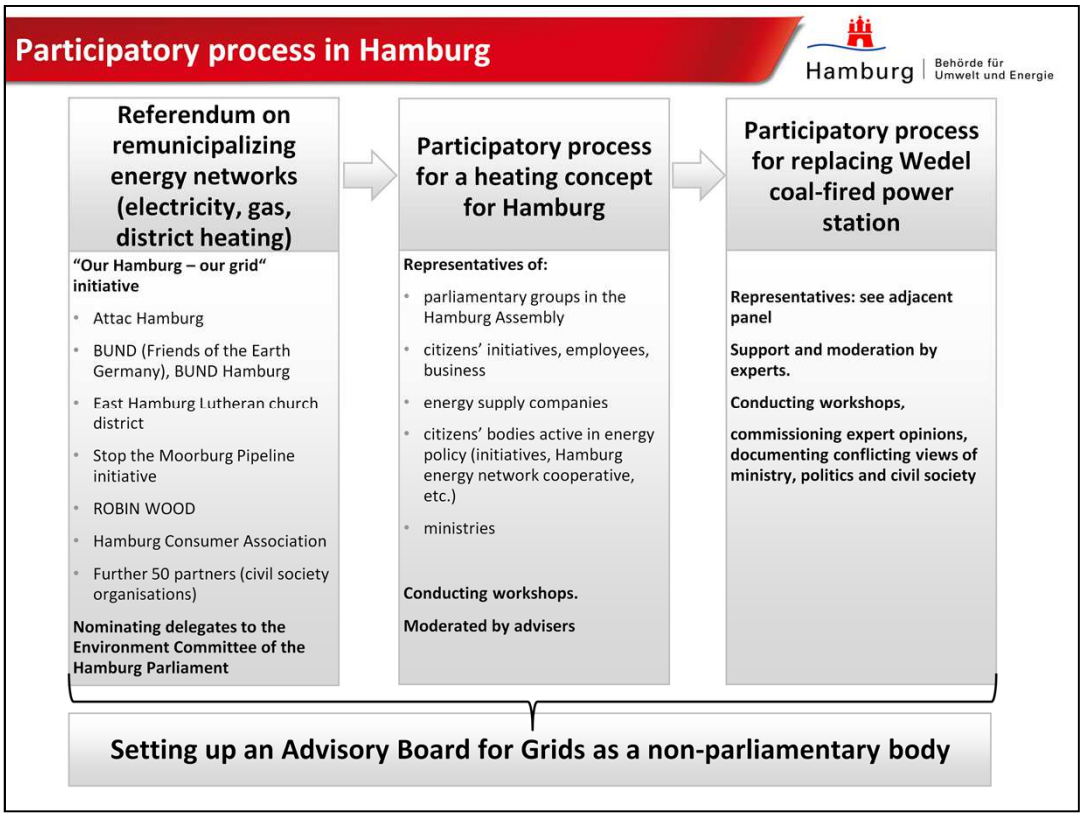


How highly do our components of participation rate in terms of public impact? If we subject the components of participation developed and/or applied in Hamburg to an *ex post* analysis of public impact, we find that the following picture emerges.

The basic scheme of the increasing level of public impact was developed by the Association for Public Participation. If the scale of intensity in the scheme is applied to Hamburg's components of participation, we see their public impact rising as we inform, we consult, we involve, we collaborate, we empower.

From an administrative perspective it is interesting that these participatory measures are the result of the political and social debates about the future of energy transition in Hamburg, especially the remunicipalization of energy supply.

The components of participation were not planned centrally and in a structured way by our political leaders or the administration, instead they have emerged from an ongoing political process and from spontaneously defined demands by society and/or municipal stakeholders.



Let me now tell you a little about the referendum.

The referendum was instigated by the initiative UNSER HAMBURG – UNSER NETZ ("Our Hamburg – our grid") and was set up in 2010 by six organizations. It is interesting to note that the founders included the Hamburg consumer association and an important church district in the city.

A further 50 partners – civil society organizations – are represented and active in the alliance. Following the success of the referendum, the focus of the initiative shifted to critical and constructive support for the implementation of the referendum's demands.

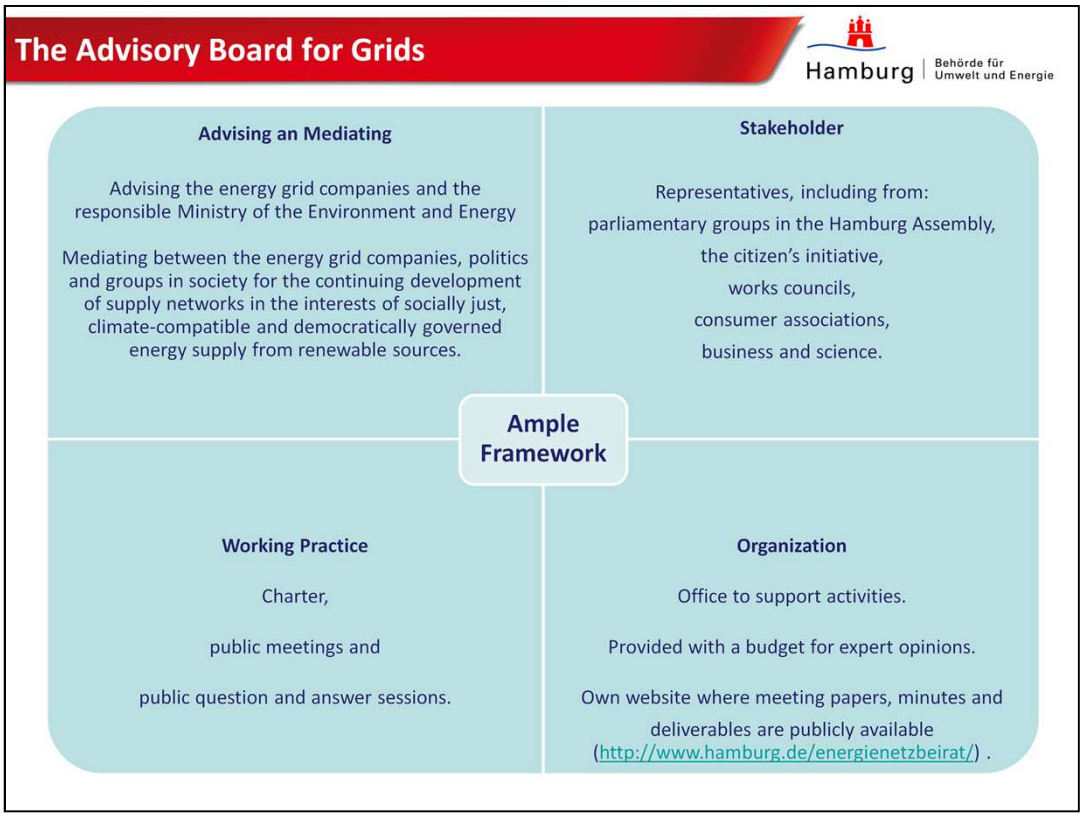
Ahead of the referendum and following it, the Hamburg Parliament asked the initiative to nominate delegates (members of associations, employee representatives from the affected energy suppliers, etc.) to attend and be questioned at hearings of the Environment Committee. Here the citizens' initiative expressed the desire to support the further implementation of the referendum.

Shortly afterwards, the Ministry of the Environment and Energy ran participatory processes to generate initial ideas for developing a heating concept for Hamburg and replacing the outdated and obsolete coal-fired power station in Wedel.

Represented in this participatory process were members of the citizens' initiative once again and representatives of business (the Chamber of Commerce, utility companies, the Taxpayers' Association, local energy cooperatives, employee representatives and many others).

These participatory processes led to the desire in the political sphere for a non-parliamentary body to be set up, with representatives of all the significant stakeholders. Its task was to support ongoing remunicipalization and the implementation of the energy transition in Hamburg.

The Hamburg Parliament finally charged the Senate with presenting a concept for the body, which was put in place in March of this year.



I would like briefly to describe the Advisory Board for Grids.

The Advisory Board for Grids advises the energy grid companies and the responsible ministry, the Ministry of the Environment and Energy. The grid companies are represented on the Board by their managers.

It makes suggestions to the grid companies and the Ministry as it sees fit.

The Board sees its role as a mediator in the dialogue between the grid companies, politics, groups in society, and the public. Its goal is the continuing development of Hamburg's energy grids and energy transition in the interests of a socially just, climate-compatible and democratically governed energy supply from renewable energy sources.

It comprises representatives of groups in society, primarily from the environmental sector, business (including renewables), politics and Hamburg's higher education institutes.

The Advisory Board for Grids has a charter, meets in public and begins each of its sessions with a public question time during which any member of the public can ask questions on energy topics which are then answered by the Board or the grid companies.

Additionally, the Board has a supporting office and a small budget for commissioning expert opinions. To ensure full transparency, meeting papers, minutes and deliverables are published on the Board's own website.

Participatory models also breach the principle of the separation of powers, particularly with regard to the executive and the legislature. One could argue that, in a democracy, policy-forming is a constitutional function of the organs of state and that public participation should thus be limited to legally prescribed class actions in administrative law, such as in urban land-use planning. Phasing out nuclear power and simultaneously expanding renewable energy requires the conversion and expansion of the power grids under extreme time pressure as well as the blanket expansion and coordination of wind and solar parks, pumping stations and geothermal energy.

These The changes in energy infrastructure and the associated far-reaching impacts on nature and the human living environment demand a high degree of understanding and acceptance on the part of society. For that reason we need to involve the public in dialogue on these processes. Today some people in Germany are **describing public participation at local authority level as the "new separation of powers" in local politics.**

It is against this backdrop that initial research projects are taking up the topic, part-funded by the Federal Government. For example, two institutes in Germany the IASS in Potsdam near Berlin and KWI, the Institute for Advanced Study in the Humanities in Essen have begun a joint research project – called "DEMOENERGIE" – into the transformation of the energy system as a driver of democratic innovation. They are investigating how acceptance of the energy transition can be increased and how the public can be involved more in the process. The research project's goal is to collect knowledge about conflicts and challenges from dialogue-based public participation in the planning of infrastructure for the energy transition. The questions posed there are also pertinent to Hamburg, of course.

- What can and must we learn about the conflicts that arise during the energy transition? What consequences do their characteristics have for the role and organization of public participation related to energy transition?
- What communication and participation practices are currently becoming established in the energy transition sector? What characterizes them?
- Can we initiate participatory processes that give the public a greater role in planning infrastructure? What do these processes have to teach us about planning and implementing public participation on infrastructure projects related to energy transition?

In Hamburg we believe that we have already learnt quite a bit. Further developments in our city and in the rest of Germany will continue to be exciting.

Colleagues, ladies and gentlemen, thank you for your attention. Do we have time for questions?

Public participation models in developing Hamburg's energy supply

International EPSA Knowledge-Transfer Conference
Barcelona (ES), 13-14 June 2016

Buenos días!

Bon dia!

Ramazan Korkmaz
Free and Hanseatic City of Hamburg
Ministry of Environment and Energy

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