

## Agora Mobility Transition (Agora Verkehrswende)

### - Addressing the Electrification Challenge and Sustainable Passenger Transport -

#### Project Description

#### The Challenge

Altogether traffic is responsible for one quarter of total CO<sub>2</sub>-emissions in the EU. After many years of increase, road transport emissions started to decline in 2008 after the introduction of the EU's binding efficiency standards for cars and vans. However, while most sectors of the economy have reduced emissions significantly below 1990 levels, road transport emissions remain about 20% higher than in 1990. Motorized personal transport, currently the largest source of emissions on European streets, is of paramount importance. It is therefore crucial to significantly reduce the emissions of motorized individual transport in order to achieve the long-term climate protection goals of both Germany and the EU.

EU-wide vehicle efficiency standards have played a key role in reducing the climate impact of the European road transport sector. Discussions to set stricter standards for 2025 and beyond are ongoing. While a lot can still be achieved by hybridization and light-weighting, eventually the need for further emission reductions will push the car fleet beyond the limits of the internal combustion engine. Policies will need to be designed in such a way as to support alternative energy sources for vehicles, such as electricity or hydrogen. New challenges around range, autonomy, recharging times and availability of infrastructure - to name a few - will have to be addressed. The car industry has argued that while they can build cars that fulfil much stricter emission-standards, they depend on society to introduce the measures that make it likely that consumers will actually buy ultra-low carbon cars.

For a successful introduction of e-mobility, the legal and economic framework conditions have to be established, and the necessary infrastructure, has to be built so that e-vehicles become an attractive option for consumers. Electrification will also have to be embedded in a fundamentally reformed and widespread electrified intermodal transport system powered by renewable energy sources.

This complex mixture shows that the transport transition raises issues for the whole of society – calling for thinking well beyond just the personal car. The discourse about effective approaches must be carried out in a fashion open to different technology alternatives and sector-transcendent. It must be void of thinking taboos.

#### Missing Dynamic

While the introduction of electromobility has made good progress in several scattered locations, such as California, Norway and the Netherlands, in many other countries it has lost its dynamic. This is exemplified by the German situation. The German federal government has set the goal of making electromobility successful as the link between the energy and transport transitions (1 million electric vehicles on the road by 2020). In May 2010, it created the national platform for

#### In a nutshell:

**Further CO<sub>2</sub>-reduction in passenger transport needs electrification, but the political dynamic and consumer acceptance are missing. The policy process is scattered.**

**Electrification must be embedded in a reform of the entire transport system and needs a coordinated multi-level governance.**

**The Agora Mobility Transition will be a protected space for constructive and well informed debate, helping to identify convergences on the transition process to a sustainable transport system.**

electric mobility (*Nationale Plattform Elektromobilität*, or NPE) for this purpose. The NPE is a cross-sectoral advisory committee. The NPE's aim is to support electromobility in becoming a lead market within Germany. It is concentrating its work on creating technical concepts for large-scale market integration of electric vehicles. The NPE has already made significant contributions, including bringing together industry and academic stakeholders, consolidating the current body of knowledge, and recommending a series of fiscal and regulatory policy measures.

Despite these productive steps, German domestic consumer-demand for electromobility is only increasing slowly. The German debate is currently centred on technical aspects regarding the introduction of battery-electric vehicles and is less concerned with systemic requirements of mobility overall. Technological, economic and social aspects of progressive electromobility are only poorly correlated and understood in their interactions. New players and business models with the potential to fundamentally change the transport system are waiting to enter the market. However, these and other relevant stakeholders, especially those from civil society, are not being adequately involved in the conversation about electromobility's implementation. All of the parties seem to be caught in a deadlock, where safeguarding strategic interests takes precedence over any real change. There is a lack of independent actors who could otherwise open up the debate beyond the NPE's narrow focus, to include a conversion of the entire transport system towards electrification. These actors could align interests anew and come up with purposeful implementation strategies. This is where an "Agora Mobility Transition" should focus its efforts and where its independence and agility will be most beneficial.

In several other European countries, such as Netherlands or Norway, electromobility is moving forward faster, however without major effects on the European market. Bringing Germany along would speed up progress in Europe and prepare the continent for potential future competition from China or the US.

## The Starting Hypothesis

While often seen as a potential problem, we believe that a **well-managed transition process** to a low-carbon transport system could offer tremendous opportunities for the European economy that would benefit from developing and producing super-clean, electrified vehicles that are fully integrated into an intelligent and highly efficient transportation network. Such a process would also initiate a race to the top between world regions, with Germany and the EU in the pole position. And it would help mitigate climate change, reduce air pollution and noise, and improve quality of life in general.

Evidently, this involves looking into a number of overlapping questions ranging from new technologies, to a much wider transport system reform and associated infrastructure implications and behavioral questions – and therefore bringing together a number of different debates which today often take place in silos. Our approach starts from the hypothesis that many technological, legislative, structural and consumer related ideas, projects and legislative proposals exist, but that there is no place where these different approaches are merged to a successful transition process.

At the same time, new opportunities to define transport especially in urban areas might open up, because e-mobility might only flourish in the context of improved inter-modality, easy access to public transport and new ownership models such as car-sharing or car-to-go models. At the same time, new entrants from various sectors, such as Google, Tesla, Autolib and Uber are starting to change the way the next generation views mobility.

## Why a Philanthropic Approach can help

While the aim of establishing electrified drives and transport systems in an effort to reduce greenhouse gases has found widespread societal support, its implementation under current conditions has apparently stalled in Germany. Given the heavy political strength of the German auto manufacturers, which are capable of blocking political progress at the European level, it is important to make this transition a success in Germany. This is where the initiative of an "independent third party" can contribute to starting an open and structured dialogue process about the future of electrical transport

systems. Furthermore, this party can build a wide knowledge base and broker an expedited transition into a climate friendly transport future.

Therefore, Stiftung Mercator and the European Climate Foundation have joint to build a multi-stakeholder platform that addresses this need for action called the “Agora Mobility Transition” (working title). This proposal is the result of intense research with the help of external consultants, including a venue- and stakeholder-analysis and more than 30 interviews with relevant stakeholders from industry, politics, science and civil society. The vast majority of interviewees supported the “Agora Mobility Transition” approach as a way to bring constructive and fact based approaches and a new dynamic to the sustainable-transport debate in Germany and Europe.

**The Agora Mobility Transition aims to**

- offer key actors from all of the relevant areas a protected space for informed and (technologically) open exchange on target-oriented approaches to the development of electric vehicles and a decarbonised transport system in Germany;
- consolidate knowledge of new developments and strategies and analyse the complex interplay between technological innovations, user behaviour, infrastructure and spatial planning as well as their economic and ecological implications;
- evaluate and link approaches for solutions on the local, national and European level;
- present viable development paths for the widespread electrification of the transport system;
- act as an honest broker helping stakeholders to identify and promote convergences on the transition process beyond individual (business) interests.

At the core of this new approach is a proactive stance towards electromobility’s development, which requires organising support from the diverse sectors and industries, across European, national and communal politics and within civil society. To reduce the complexity of this task, the Agora Mobility will first focus on Germany (and its European connections). If a breakthrough for electromobility can be managed in the German marketplace, the relevance of the resulting signal effect will be truly global.

For this to happen, the process needs to occur in a space with a confidential atmosphere, far from the strategic securing of interests – where technical implementation concepts, political framework conditions and a new 'transport culture' can be negotiated with the goal of effectively reducing emissions in the transport sector. This is where Agora Mobility Transition has the potential to make a significant contribution to the accelerated transport transition.

**Key features of the Agora Mobility Transition:**

- Protected space for constructive and informed debate.
- Honest broker helping to identify convergences on the transition process.
- Fast, independent analysis on technological, economic and social aspects of electromobility and a sustainable transport system.
- Evaluate, link and propose solutions on EU, national and local level.

fast	independent	participative	communicative	fact based
honest broker	learning	linking	solution oriented	agile

**Objectives, Working Methods and Structure**

The objectives of project Agora Mobility Transition are

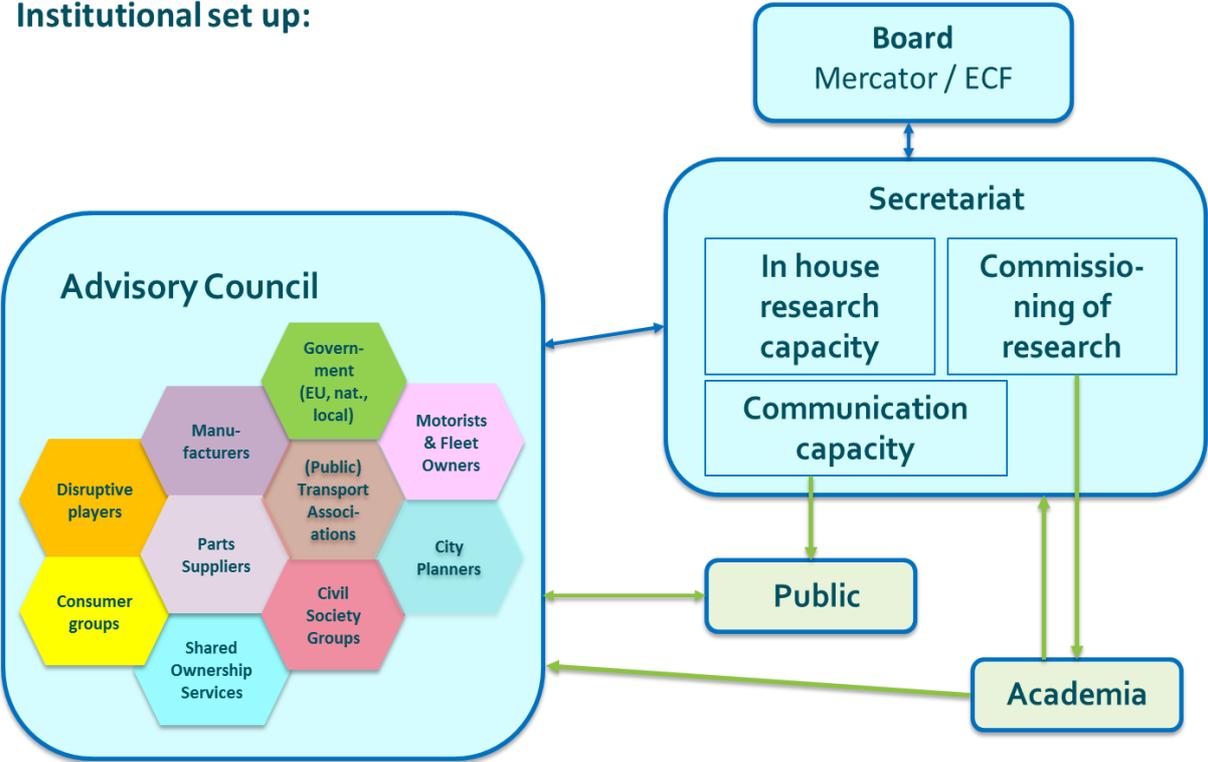
- that key actors have access to independent fact based and original analysis on the comprehensive electrification of the transport system and that open issues are tackled in a timely and competent manner;
- that interdependent technological, economic and social aspects of electric mobility are considered together and that these are understood and discussed in their broadest sense;
- that decision makers from all of the relevant sectors come to a common understanding of the promising pathways for electrical system conversion;
- that policies are designed and implemented for the optimisation of the transport system in order to mitigate climate change.

The Agora Mobility Transition will revolve around its **Advisory Council**, which is a secure discussion forum for selected experts and decision makers from European, national and communal policy bodies, the automobile and logistics industries, energy businesses, the IT sector and innovative start ups as well as scientists and civil society. The basic idea is that both traditional entities as well as potentially disruptive players come together on the Advisory Council; actors who are looking to engage in an open exchange – i.e., beyond merely representing their institutions – on the development and broad implementation of electromobility. The character of this body should therefore be informal and its work confidential. Thus, discussions in the Agora Mobility Transition will take place behind closed doors according to “Chatham House Rules”.

The purpose and task of the Advisory Council is to create a preliminary consensus on the challenges and promising paths to realising electrification of the transport system. The Advisory Council should thus be chaired by someone who can give balanced moderation and steer the intense, complex discussion process. This person must be known as a trustworthy and credible negotiation partner, rising above sectoral and party lines, and have an extensive knowledge of the transport system and its actors. The Advisory Council meets at regular intervals to discuss electromobility as an integrated process; also identifying open questions that require further research.

This is where the second structural pillar of the Agora Mobility Transition offers support. The **Agora Secretariat** is there to accompany the stakeholder dialogue with scientific input and appropriate research regarding all electromobility topics, either internally or by tapping external research institutes. As a result, the stakeholder dialogues in the transport and environmental policy community stay informed of effective approaches to the electrification of the transport system. Lively exchanges with other relevant platforms are an essential element of its portfolio, such as the NPE. The Agora Secretariat consists of an independent handpicked team of talented experts that undertake and commission analyses, issue policy papers and convene expert roundtables and discussions. They also make sure that the topic stays alive in the public debate and link the debate in Germany with the one in Europe, the US, China and other hotspots of mobility transition.

**Institutional set up:**



The Agora Mobility Transition (Agora Verkehrswende) will be managed by its Executive Director, Christian Hochfeld. The project will start in February 2016. Its office will be based in Berlin. The foundations support the project with up to 5 Million Euro over the project period. It will initially run for three years and focus on Germany in the context of a wider reform of the European transport system. If successful, the two foundations will consider a prolongation of the project as well as extending it to the European and international level. The Agora Secretariat will be based in Berlin.

## Potential Working Packages

The working program of the “Agora Mobility Transition” will be decided by the Agora Advisory Council in close cooperation with the Agora Secretariat. During our initial conversations with stakeholders, some key topics have however evolved, which we are describing below. These give an idea of the debates, which the Agora Mobility Transition might hold in the future.

### Understanding the Technological Options:

High costs of fuel cells and batteries; long recharging times, low specific energy content and short operational lifetimes of batteries; problems to produce and store H<sub>2</sub> efficiently and high cost of light-weight materials are some of the technological problems which still need to be overcome. Understanding how much progress can be expected in each of the different technologies will be important when supportive measures for the transition are discussed. Special attention will be given to “disruptive” technologies, which might change the entire debate.

### Legislation:

The introduction of electro-mobility and the successful transition to a decarbonized transport system will need well-coordinated interventions and legislation on all levels.

EU level:

- Legislation to encourage light-weighting (ending the current advantages for heavier cars).
- EU-standards for CO<sub>2</sub>-emissions for cars and vans in 2025 and 2030 as an option for driving forward electrification.
- Support programs enabling successful and cost-efficient deployment of infrastructure, helping to overcome first-mover disadvantages.
- Improved R&D budgets for electrification (e.g. battery technology).
- Harmonization/standardization enabling electrification.

Nation Level:

- Support mechanisms for the introduction of new technologies (e.g. CO<sub>2</sub>-based car-taxation or subsidies for PHEVs, BEVs or FCEVs).
- Specific support for bridge-technologies (e.g. plug-in hybrids).
- Legislation and economic mechanisms to support the introduction of infrastructure.
- Removing barriers to the integration of vehicles within the power system.

Local/regional level:

- Incentives for electric cars in cities (e.g. dedicated, cheaper parking spaces with loading possibilities, use of bus-lanes).
- Legislation and other measures enabling fleet approaches.
- Measures improving inter-modality.
- Enabling of car-to-go or car-sharing systems.
- Strengthening public transport.

### (Changing) Consumer Behavior

Car ownership has become less attractive, especially among the younger urban population, while car-to-go systems, public transport or (e-)bicycles are becoming attractive alternatives. We need to understand better, how such trends can (positively) influence the shift towards a decarbonized transport system.

It could also be useful to differentiate between different groups of drivers (consumers) with different behavior patterns. For commuters, Plug-in-Hybrids might be the next technological option - in combination with private loading stations at home and at the work-place. Car-to-go systems might be an option for testing BEVs in bigger cities, aiming at the younger urban population. H2-mobility might be tested within the fleets of bigger companies – to name just a few examples.

### **Cities as Testing Ground for the Transformation**

Cities will be the places where electro-mobility will first be introduced and tested. They therefore play an important role in the strategies for enabling electro-mobility and embedding it in a sustainable transport system.

It will be of great benefit if one or several model-regions or cities could be developed, which test the different approaches and incentive-measures on the local level and thus gather experience of what a managed transition to e-mobility could look like. While several such projects exist, they have not yet resulted in a break-through. The “Agora Mobility Transition” could address the existing obstacles and thus help to further develop successful projects as testing ground for the necessary transition. An exchange with other city projects in the US or China is planned.

### **Interactions between the Electricity and Transport System**

With the electrification of transport, the interactions between (largely renewable) electricity production and the transport system obviously become an important topic. Electricity demand from BEVs (Battery Electric Vehicles) must be made compatible with the fluctuating renewable energy sources, to name just one example. At the same time, BEVs, or the production of H<sub>2</sub> from excess renewable energy, could help to balance the grid.

### **European and National Industrial Policy**

For the European car industry and its suppliers, the shift to electromobility is an enormous challenge, but also an opportunity. Half of the value-added in a battery electric vehicle (BEV) is in the battery, for example. These batteries are in the moment mostly manufactured outside Europe. An intelligent industrial policy, which helps the European car industry to meet the challenge and at the same time accelerates the shift towards a low-carbon transport-system should therefore be discussed.

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