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Governance and institutions for a long-term transition to low-carbon mobility

Oliver Lah

Abstract: Change in political leadership can directly affect climate change mitigation policies. This is particularly true in sectors, such as transport where often long-term investments by individuals (e.g. in cars) and by local and national governments (e.g. transport infrastructure and services) are made. The large potential for efficient solutions to reduce CO₂ emissions and to improve the sustainability of the transport sector is yet unexploited. It is hard to understand why this potential has not yet been exploited, considering the cost-effectiveness and the potential for co-benefits. Particularly interesting is the fact that countries with relatively similar economic performances and similar access to efficient technologies and vehicles, show substantial difference in the development of their transport CO₂ emissions over the past thirty years. This study applies some well-established political science theories on the example of climate change mitigation in the transport sector in order to identify some of the factors that could help explain these differences in success of policies and strategies. The analysis suggests that institutional set-ups that contribute to consensus building in the political process provide the political and policy stability that is necessary for changes in sectors that rely on long-term investments. However, there is no direct correlation between institutional structures, e.g., corporatism and success in reducing greenhouse gas emissions in the transport sector. Before actual policy progress can be observed, environmental objectives need to be built into the consensus-based policy structure. This usually takes more time in consensus democracies than in politically more flexible majoritarian systems, but the policy stability that builds on corporatist institutional structures is likely to experience changes over a longer-term, like a lasting shift towards low-carbon transport.

Keywords: sustainable transport; policy implementation; governance; institutions

Introduction

In the last years a number of countries have seen drastic climate policy shifts in a. Most notably the new US administration under Trump, dismantling climate policies implemented by the Obama administration. Similar drastic policy changes could be observed from the conservative governments in Australia, Canada, New Zealand, and the United Kingdom. These changes show a pattern of political volatility that is built into the political and institutional structure of democratic countries with a two-party minimal majority political system (so-called majoritarian countries). This chapter aims to shed some light on the relationship between political and institutional structures and climate policy outcomes.

The transport sector causes about 14% of global CO₂ emissions and influences a number of other interesting factors. It is a key concern of energy security, one of the main contributors to local air pollution, creates road safety issues, and traffic congestion which has a negative effect on economic development. Sustainable transport policies can thus play a large role in solving these issues. Considering this, it is surprising that countries have made very differing levels of progress in this area. It is said that a number of factors contribute to different policy outcomes. However, while differing pressures from climate change, air quality, congestion, safety, or energy security can influence the time and scale of policy responses, institutional and political structures determine the consistency and continuity of policy action. Combining economic and environmental policy objectives, the transport sector is a particularly interesting

case for an in-depth analysis of climate change policies. The differences in policy making in different institutional settings will be examined, in more detail, using examples of transport climate change mitigation policies (Lah, 2017a).

The political environments vary greatly from country to country. This has an effect on the capacity to implement sustainable transport and other climate change mitigation measures. This study examines the relevance of several political science theories in the climate and energy policy context and aims to identify key factors that influence the policy environment in this area. There are several studies examining the influence of institutional and political structures (corporatism, coordinated market economy, consensus democracy, epistemic communities, European integration, and centre-left and green party strength) on environmental performance (Bernauer and Koubi, 2008; Neumayer, 2003). Most of these studies focus on higher-level environmental performance indicators and their relationship to specific institutional settings. This chapter builds on these studies and seeks to find potential relationships between institutional set-ups and their influence on policy agenda setting and the implementation of policies. Specifically the chapter looks at outcomes in the transport sector, which has often been described as one of the most difficult to decarbonise (Edenhofer et al., 2014; IEA, 2012; ITF, 2010).

Exploring some of the key institutional indicators, this chapter aims to shed some light on the potential influence of institutional frameworks on efforts to lower the CO₂ emissions of the transport sector. This will not establish a linear relationship between the institutional settings and outcomes. However, the analysis will highlight factors that can be considered for a governance framework that can address the complexity of a sector that requires integrated and long-term policy action at all levels of government to meet climate change targets that aim at a stabilization at well below 2 °C above pre-industrial levels (Olson, 1982).

Methodology: Factors for Continuity and Change

To implement policies that increase the efficiency of the transport sector social, environmental, energy, and economic drivers are substantial. However, different policy environments have different effects on the implementation of policy measures. Some countries have implemented strong and innovative sustainable transport policy measures at the local level, while they lack progress on the national level or vice-versa (IPCC, 2014). In fact, a large number of local and national policy measures are ready to be implemented to reduce greenhouse gas emissions and contribute to wider sustainable development benefits. There are a number of reasons why measures are not taken-up at their potential level, such as financial considerations, but some influencing factors are directly related to the policy environment and the institutional structure of a particular country or city. Sustainable mobility policies, such as fuel and vehicle taxation, urban planning and public transport infrastructure, are highly visible and politically sensitive issues. As they rely on investments that are only cost-effective over the medium to long-term, they require strong political support, sufficient capacity at the administrative level, consensus among key actors and stakeholders and a stable policy environment to appear on the policy agenda and to remain in place (IEA, 2010; IPCC, 2014).

A better understanding of the relevant aspects of the policy environment and institutional structures in which sustainable mobility measures are being dealt with, can help with the design and implementation of transport policies. An initial analysis of several potential factors of a transport climate change policy framework will be explored in this chapter. The framework allows to build on aspects of policy integration, coalitions, and institutional structures that influence the policy environment.

Several potential factors will be presented in this chapter to provide some indications on the policy environment as it is influenced by uncertainty, a shared set of methods and values that is vital for policy agenda setting, usually delivered through epistemic communities. These

factors are vital contributors to enable epistemic communities to influence policy agenda setting and policy continuity. The factors are taken from established political science theories focusing on political consensus, corporatism, coordinated market economy, consensus democracy, or veto players. This study applies these concepts to the climate change and energy policy context. Other influencing factors considered are the level of integration into the policy framework of the European Union and the strength of centre-left and green parties. This also includes an analysis of the extent of dependence of climate change mitigation policies on support from these parties and if and how policies evolve following changes of government. This analysis will provide input to the wider climate policy debate by highlighting several governance and institutional issues and their potential effect on the climate and transport policy environment. To get transport onto the pathway for 1.5/2 °C stabilisation the strategies with an integrated policy approach and a multilevel governance approach are needed (Dessens et al., 2016; Figueroa Meza et al., 2014; Fulton et al., 2013; GEA, 2012; Sims et al., 2014).

The Relevance of Institutional Political Science Approaches

Consensual political institutions may lead to higher levels of policy continuity, as outlined by Lijphart (Lijphart, 1999), which in turn could positively affect the success of climate change mitigation strategies in the transport sector. This approach also takes on the theoretical concept of “encompassing organisations” (Olson, 1982), which examines the relationships between political and societal actors and their ability or inability to agree upon policies that enjoy broad majorities in both politics and society. According to Crepaz (Crepaz, 1998) multiparty coalition governments with proportional representation and negotiation have a higher chance of lowering unemployment and inflation and thus creating a more favourable socio-economic environment. Lijphart and Crepaz (Crepaz, 1995; Lijphart, 1999) develop conceptual frameworks and provide supporting evidence that in comparison to more majoritarian, exclusionary, and adversarial countries, governments with consensual, inclusive, and accommodative constitutional structures and wider popular cabinet support act more politically responsibly.

In countries characterised by corporatist institutional structures, major policy issues are negotiated in a joint effort between different interest groups. Studies in this area usually focus on the relationship between unions and employer organisations negotiating socio-economic policies, but can be similarly applied to peak environmental organisations and industry. Policy coordination among these organised interests facilitates favourable policy outcomes, which in the case of this study means lowered levels of greenhouse gas emissions in the transport sector. A high level of corporatism may hence influence the implementation and improvement of policies with a long-term focus. A number of elements can be observed which may further enhance this effect, for example: comparatively encompassing interest groups, a consensual social partnership, and a broad acceptance of government regulation due to a history of strong penetration of the state in areas such as the labour market and social policy (Scruggs, 1999). In corporatist countries, interest groups are a fixed part of the policy process and broaden the basis of policies, which creates the high level of continuity required for long-term investments. Groups are locked into certain policy directions through this coalition building, which further enhance policy progress, which is almost self-reinforcing (Katzenstein, 1978, 1977). Several countries with an open economy used corporatist structures to cope with increasing policy pressures to respond to economic downturn, high unemployment, and inflation rates triggered by the 1970s oil price shocks. (Goldthorpe, 1984; Katzenstein, 1978; Woldendorp, 1997).

The concept of coordinated market economies is very similar to the general concept of corporatism. It equally relies on formal institutions to regulate the market and coordinate the interaction of firms and their relations with suppliers, customers, and employees (Hall and Soskice, 2001). Coordinated market economies can be characterised as having long-term

relations between key actors in the economy, trade unions and employer associations whose relationship was given particular focus in research. These long-term, cooperative relations provide coordinated market economies with a comparative advantage. They positively affect the policy continuity and policy capability of a country in a similar way as corporatist structures do.

Hall and Soskice (Hall and Soskice, 2001) argue that liberal market economies are characterised by a hands-off policy approach and uncoordinated interaction between policy makers, and economic and societal actors, which put these countries at a relative disadvantage compared to coordinated market economies. The strong interlinkages between industry, banks, government, and non-governmental organisations in coordinated market economies can cause inertia, but can also result in continuity and policy stability (Amable, 2003; Hall and Soskice, 2001; Schmidt, 1982; Streeck and Yamamura, 2001; Whitley and Hedesstrom, 2000). The analysis of the potential relationship of carbon intensity and continuity and coherence indicators allows for the development of indicative clusters of countries that represent certain institutional arrangements and governance structures and their transport CO₂ emissions per capita. Countries with a strong focus on consensus building after deliberation, such as Austria, Sweden, Germany, and Switzerland have lower levels of per capita transport CO₂ emissions than pluralist and less consensus oriented countries, such as the US, Canada, Australia, and New Zealand.. Countries such as the UK and France have both, leading to low levels of CO₂ emissions. The argument is made for France and the UK, that the membership in the European Union acts as a factor of policy stability (Börzel and Risse, 2009; Jordan, 2001). Also, cohabitation in France and the strength of the then governing Labour Party in the UK, are considered to have contributed to emission reductions in the early 2000s (Vogel, 2003). A follow-up analysis assessing changes after the United Kingdom will have left the EU, likely will provide additional indications of the role of the EU in policy stability. The divide between countries becomes even more obvious when comparing the level of consensus in various EU and non-EU countries regarding increasing or decreasing emissions reductions in their transport sectors, which reflects the actual progress in low-carbon transport policy (or the lack thereof). This divide is becoming particularly obvious when comparing climate policy approaches in the EU and the US. This comparison will be discussed in Section 5 after some of the factors outlined in this section have been analysed in a set of multivariate-variate correlations.

Institutional Factors and how they relate to Policy Outputs and Outcomes

Epistemic Communities, Societal Consensus, and the Uncertainties of Climate Change Impacts

As there remains uncertainty over the scale and timing of climate change impacts, even though the basic determinants of man-made climate change are scientifically robust, , policy making is much more complicated than in other areas (Figuroa Meza et al., 2014). But rather than using the “lack of full scientific certainty [...] as a reason for postponing cost-effective measures to prevent environmental degradation” (United Nations Conference on Environment and Development, 1992), a cautious approach should be adopted and is also vital. The debate has moved in many countries from climate science to climate action. Some countries have steadily progressed climate change mitigation policies, while others have experienced substantial political volatility in this area, since the First Assessment Report was published by the Intergovernmental Panel on Climate Change in 1990,. Not knowing the potential impacts of climate change makes decision-making very difficult and complex. From the policy makers’ perspective the impact chain is a critical factor. It is characterised by increasing scientific uncertainty, which is related to the complex nature of the global climate system (ITF, 2010).

Even though the scientific understanding of the future impacts has improved, climate change policies are often hindered by uncertainty about the risks (World Energy Council (WEC), 2008). The issue of climate change requires a particular sort of information, which is not based on ideology, guesswork, or raw scientific data, but on the interpretation of social and physical phenomena (Haas, 1992, 1989).

Epistemic communities are crucial in providing this information to enable policy action and consensus building. Epistemic communities are defined as a “network of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue-area” (Haas, 1992). They have a shared set of normative and principled beliefs, regardless of the professional background. These beliefs provide a value-based rationale for the social action of community members and are often causal beliefs, which serve as the basis for identifying linkages between possible policy actions and desired outcomes (Haas, 1992). The foundation for policy decisions in consensus or compromise is based upon the shared values and understanding of causal relationships by the members of an epistemic community. (Baldwin, 1979; Haas, 1999; Katzenstein, 1978). This means that epistemic communities can produce consensual knowledge, even if the scientific evidence is uncertain or inconclusive (Craig and Porter, 1997; Haas, 1992).

Epistemic communities provide a key input into the policy process, which is more effective in some institutional structures than in others. In corporatist structures, participation in the policy process is limited to a small number of societal actors. The members collectively form an epistemic community that has a shared set of values. They are able to influence the policy agenda and they provide policy stability. This makes shared methods and values an important factor for a common agenda on which climate policies are being developed.

Consensus Focused Democratic Institutions

A corporatist institutional structure is a central element of many consensus democracies. It allows for a more coordination in policy making with a small number of large peak organisations (Goldthorpe, 1984). With a closed shop approach like this, the number of players that need to be convinced is limited substantially and epistemic communities are formed. This potential comparative advantage of consensus democracies also manifests in a number of other characteristic elements of these countries, such as the “shadow of state regulation” (Scruggs, 2001) and a broad acceptance of government regulation due to a history of strong penetration of the state in areas such as the labour market and social policy (Woldendorp, 1997). Political stability and continuity are driven by the institutional structures of a consensus democracy, and create better environmental policies over the long term (Lundqvist, 1980; McGuire and Olson, 1996). Corporatist institutional arrangements are characterised by a strong relationship between large encompassing groups. These arrangements enable decision makers to negotiate policy in a way that is distinctively different from policy making in pluralist, majoritarian democracies. These groups are an integral part of the policy process and broaden the basis of policies, which creates a high level of continuity that is required for long-term investments (Lehmbruch and Schmitter, 1982). The resulting coalition building locks groups into certain policy directions, which further enhance policy progress, which creates an almost self-reinforcing mechanism (Katzenstein, 1978, 1977).

A large number of scholars have previously described the institutions that enable a broader consensus amongst politicians and society, all using different approaches and definitions. This study uses a combined approach to apply these theories which will allow to assess institutional relationships in a broader perspective than the isolated approaches used in many previous studies. The goal is to relate one particular institutional feature to socio-economic or more specific policy outcomes.

The two major categories of democratic systems are majoritarian and consensus democracies (Crepaz, 1995; Lijphard, 1999, 1984). In majoritarian systems the power is concentrated in one party and minimal winning majority cabinets, they are also characterised by a two-party system, non-proportional election systems, interest organisation pluralism, centralised forms of government, unicameral parliaments, constitutional flexibility, absence of judicial review, and executive control of the central bank. On the other hand, consensus democracies are characterised by coalition government, balance between executive and legislative power, proportional representation, interest group corporatism, federalism, bicameralism, constitutional rigidity, judicial review, and independence of the central bank (Lijphard, 1984). Neither of these combinations is a definitive list of characteristics, indicates the typical elements of countries that can be described as majoritarian or consensus democracies.

It could be argued that a majoritarian democracy is more decisive and able to implement climate change mitigation measures at a faster pace than a consensus democracy, due to its characteristics. This argument gains support when looking at the amendments to the vehicle fuel efficiency standards introduced by the typical majoritarian democracies Australia, Canada, and the US in recent years. In all three countries the changes in the standards have been introduced by Democratic (US and Australia) and Labour-led (Canada) governments, respectively. Canada's regulation is aligned with the US standards. This shows that while change is possible and can be implemented fairly swiftly in majoritarian systems, this relies on support of the minimal majority. This majority may change relatively quickly and with that, possibly support for the policy. We argue, that the decisive factor of success for climate change mitigation policies is the reliability of the policy environment over the long term. This chapter argues that consensus orientated democracies are more likely to be successful in moving towards sustainable development over the long term and thus challenges the theory that majoritarian democracies are more effective . When looking at the high level of political volatility of the position of the United States in the United Nations Framework Convention on Climate Change (UNFCCC), this has become particularly obvious: adopted in 1992 by George H.W. Bush although with watered down targets, followed in 1997 with the Kyoto Protocol as major milestone, first signed and actively supported by Al Gore on behalf of the US administration and then abandoned by the George W. Bush administration. The Obama administration struggled to pass major climate change legislation, because of a lack of parliamentary support, , but helped championing the Paris Agreement in 2015, from which the Trump administration withdrew in 2017, making it one of the three countries in the world not being part of this global climate change agreement, alongside Syria and Nicaragua. In contrast, while the adoption of climate policy measures can sometimes be slow (Antimiani et al., 2016; Compston and Bailey, 2016) in the EU, it has maintained a steady and gradually improving approach to climate change mitigation policy that has endured many elections at the member states and EU level. These two examples show a link between institutional and climate change indicators, and indicate that by creating a more stable policy environment through more efficient institutional relationships, consensus democracies can outperform majoritarian democracies (Lijphard, 1999). It is argued that over the longer term consensus democracies are even more responsive and decisive than majoritarian systems, because of the more coordinated interaction with societal actors (Crepaz, 1998). This positive impact on the stability of the policy environment depends on a number of characteristics found in countries with a corporatist structure, such as: comparatively encompassing interest groups, the 'shadow of state regulation', and a broad acceptance of government regulation due to a history of strong role of the state in areas such as the labour market and social policy (Scruggs, 2001).

Corporatist institutional arrangements are characterised by a strong relationship between large encompassing interest organisations. These enable decision makers to negotiate policy in a distinctively different way from policy making in pluralist, majoritarian democracies. The difference between corporatist and pluralist institutional arrangements has been studied for many years. However, the debate is still open on the question if corporatism creates more positive impacts, in particular on socio-economic performance (Cameron, 1984; Schmidt, 1982) or has more negative effects (Flanagan, 1999; Therborn, 1987). Corporatist institutional interaction is considered to have less collective protests and strikes (Schmitter, 1981), which gives an indication of political stability. It can be claimed that corporatism is beneficial for climate change policy development under the condition that the encompassing groups have vital interests that support environmentally sustainable policies. In corporatist countries these groups are integrated into the policy process and broaden the basis of policies. This creates the high level of continuity that is required for long-term investments. The described coalition building locks groups into certain policy directions that further enhance policy progress, in an almost self-reinforcing mechanism (Katzenstein, 1978, 1977). This analysis shows, that consensus oriented democratic institutions and encompassing corporatist structures are highly relevant factors for the framework presented in this chapter.

European Integration

A new dimension for societal and political actors is created by the interrelations between European and domestic politics and policies (Hall and Taylor, 1996; March and Olsen, 1998, 1989). The European level opens new opportunities, however it potentially also limits the pursuit of specific political interests. Even if a particular issue has no or only limited priority on the domestic political agenda, the added level provides societal actors with an opportunity to advocate for policy measures, for example climate change mitigation policy measures. (Börzel and Risse, 2009). The formal institutions of the European Union are even more important, as they provide the opportunity for new policy initiatives. They also create a more stable policy environment, less dependent on national elections and hence less likely to change radically after an election (Weidenfeld, 2010). The “logic of appropriateness” (March and Olsen, 1998) and processes of persuasion in the European Union are mediated by the influence of change agents. These agents convince others to align national interests with the overarching European framework and the European political culture, striving for political consensus and cost-sharing (Börzel and Risse, 2009). Climate and energy policies of EU member states are influenced by the Union both directly and indirectly. Due to its supra-national character, the European Union is a significant policy driver. How much influence this driver has in comparison with, for example, the United Kingdom and Germany. While, both countries are members of the European Union, they differ significantly in their level of corporatism, but still have similar developments concerning the energy intensity in the transport sector. Following, it could be assumed that the membership in the European Union contributes to more political continuity. Taking a wider look at the role of the European Union for example in the area of EU-wide fuel efficiency regulations, it is fair to say that European institutions are not only a contributing, but a driving factor to more political continuity in this policy area.

Regarding integration into the European Union as a factor of political continuity touches on various established concepts, in particular rational choice institutionalism and constructivist institutionalism (see for example: (Börzel and Risse, 2009; Hall and Taylor, 1996; March and Olsen, 1989). In contrast to a EU membership, participation in international forums and international governance structures, most notably the United Nations Framework Convention on Climate Change (UNFCCC) also affects national climate policy strategies, but to a much

smaller extent. This was clearly shown by the withdrawal of the US from the Paris Agreement and the Kyoto Protocol before. International agreements are relatively weak compared to the supranational structure of the EU. The pressure on countries to fulfil international climate change commitments may vary depending on the country's position in the international community and its track record on climate change policies. This may influence a country's motivation to implement policies that curb emissions. Following, it can be assumed that the integration into international agreements only has little influence on the capacity of countries to deliver on long-term climate change policy goals. The integration into supranational structures (as of now only the EU is a supranational body) on the other hand does play a significant role for the governance frameworks presented in this chapter.

Influence of Centre-Left Parties and Green Parties

Several authors have previously suggested that the strength of centre-left and green parties significantly impacts the effectiveness of environmental policies. A green party's central political objective, by definition, is environmental protection (Benton, 1997; Neumayer, 2003). Its political representation and influence in parliament and government is therefore likely to impact positively on climate change policies. Centre-left parties often tend to be more interventionist in their policy making and are the most likely coalition partners for Green parties. However, recent studies indicate that centre-left and Green party-strength has less influence on policy outcomes than the increased level of continuity in corporatist countries and consensus democracies (Lah, 2009, 2017b). This could be connected to the integration of climate change mitigation and energy security as important policy objectives by the societal actors. Looking at the framework that is developed in this chapter, a system relying on Centre-Left Parties and Green Parties to advance climate change policies would likely show faster policy implementation, but would still bear the risk of political volatility unless these policies are based on broader societal and political agreements.

Example: Vehicle Fuel Efficiency Regulation in the EU and US

The role of institutional factors, can be ideally illustrated with an example from one of the central policy interventions to improve the efficiency of fleets of small and medium freight vehicles—fuel efficiency standards. This type of regulation has two key aims; one, to ensure a supply of efficient vehicles and, two, even more importantly, to limit the amount of fuel consumption throughout the vehicle fleet.

In 1975, just two years after the first oil crisis, the USA was the first country to introduce vehicle fuel economy standards. The so called US Corporate Average Fuel Economy (CAFE) standard requires car manufacturers to meet sales-weighted average fuel economy standards for light sold domestically vehicles. The mandatory standard was effective in improving vehicle fuel efficiency for about 10 years. The fleet-average fuel economy of passenger cars rose from approximately 15 miles per gallon (15.68 L/100 km) in 1975 to approximately 28 mpg by 1989 (8.4 L/100 km). However, when oil prices bounced back in the 1980s and policy-makers' attention to the CAFE standard decreased, so did their effectiveness. A number of other factors contributed to this, most notably that CAFE standards was not updated for more than two decades and hence, failed to include newer vehicles, like light trucks (SUVs). Only in 2009, when the political environment was again more supportive to policy action in this area, the Obama administration adopted a new uniform federal standard. The standard required an average fuel economy of 35.5 miles per US gallon (6.63 L/100 km; 42.6 mpg_{imp}) by 2016. Just a few days before the Trump administration took office, the US Environmental Protection

Agency (EPA) adopted an extended target of an average of 36 miles per gallon by 2025 for cars and light trucks. However, amongst its first steps the new administration had planned a review of EPA standards and regulations and the Clean Power Plan. This review may well lead to “review, and if necessary, revise or rescind” regulations that may place “unnecessary, costly burdens on coal-fired electric utilities, coal miners, and oil and gas producers” (EPA, 2017).

The EU first settled on voluntary arrangements with the automobile industry and moved to regulation later than the US. Regulation EC 443/2009 pursued a target of 120 g CO₂/km for the European car industry by 2015 with an extended target of 95 g/km of CO₂ by 2021 (ICCT, 2014). The EU regulations fall short in some areas, and are in some respects (e.g., vehicle testing) weaker than their US counterparts. However, there is a constant process to improve and upgrade these regulations and supporting measures (ICCT, 2014). In the development of these regulations, partisan considerations play only a limited role, as the responsibility lies at the European Union level, and members of the European Commission and the European Council are from diverse political parties. Involving European peak organisations early in the policy process generally leads to several concessions, but also to a broader coalition-base for decision-making. A durable and stable policy and political environment is needed as a basis for energy efficiency regulations as they require large, long-term investments into research and innovation. With structured non-partisan approach, that considering and including the perspectives of peak organisations, which represent relevant societal and economic actors this stable policy environment can be more easily created (Lah, 2017a). The lower levels of the historic emissions and standards in the EU, in the specific case of vehicle fuel efficiency described above, may be an indicator of continued and sustained policy progress. The targets describe above are an intrinsic part of EU legislation. Legislation, that is based upon extensive consultation processes and was adopted by the EU member states in European Council and with a broad majority in the European Parliament. In comparison, the relatively strong targets adopted in the US adopted through executive action have no legislative backing. They could easily be revised or repealed as part of the Trump administration's broader move to roll back environmental and climate change policy.

Example: Urban Mobility Solutions in India and Brazil

National and local level policy environments can be affected by political volatility. The relationship between institutional structures and socio-economic outcomes has been explored in depth in many industrialized countries. Similar analyses for emerging economies on the other hand are still rare. Looking to fill this gap, the urban mobility SOLUTIONS network has worked with several key emerging economies, including India and Brazil. Both countries are dynamic democracies facing significant challenges from rapid urbanization and economic development.

Brazil, largest economy in Latin America, has put forward the relatively ambitious Nationally Determined Contribution (NDC) as part of the UNFCCC process, of aiming to reduce CO₂ emissions by 37% below 2005 levels by 2025 (Brazil, 2016). At the same time however, there are a number of inconsistencies in the federal policy approach, such as the halving of the budget of the Ministry for the Environment (Climate Action Tracker, 2017). On the local level on the other hand, there are a row of cities that have been working very proactively on sustainable mobility solutions for many years. for example the city of Curitiba that established the world's first Bus Rapid Transit system. In the frame of the SOLUTIONS project, the city of Belo Horizonte in the region of Minas Gerais worked with partners on the implementation of several sustainable urban mobility measures, amongst others in the areas of traffic calming, low/speed zones, and promoting cycling in the city. Belo Horizonte

(population: 2.4 million, with 5.7 million in the official metropolitan area) has seen a significant political shift in 2016. Nevertheless, there is still some stability in the city's policy environment, which is building on a coalition between staff within the local government administration, which largely kept their positions, and an active civil society that coordinates well among the various interest groups working on different policy objectives (air quality, safety, access, etc.).

India, the largest democracy in the world, is also challenged by fast economic development and urbanization, with air pollution and road congestion creating particularly prominent and urgent challenges. At the federal level, the government has set out a number of programs in the areas of renewable energies, transport, and urban development. At the local level however, city authorities often lack the intuitional capacity or even the mandate to shape the mobility system of the city. Same as Belo Horizonte, the city of Kochi (Kerala, India, population: 2.1 million in the metropolitan area) has been part of the SOLUTIONS network. In the programme it has worked on measures to increase the walkability in the city and identify last-mile connectivity solutions linked to the Metro and waterway systems that are being built or upgraded (Lah et al., 2015). In India all three levels of government (union, state, and city) have seen political change over the duration of the project. However, there has again been a relative level of stability, built on staff within the administration that remained in their positions, and an active civil society. In addition the Kochi Metro Rail Ltd. Kochi, India, a legal entity (special-purpose vehicle) tasked to deliver on the Metro Rail project, which effectively acts as a Unified Metropolitan Transport Authority for the city played a stabilising role.

Analysis

There is evidence, that consensual political institutions may lead to increased levels of policy continuity, which in turn could positively influence the success of climate change mitigation strategies in the transport sector. This approach also includes the theoretical concept of “encompassing organisations” (Olson, 1982) and takes a look at the interaction between political and societal actors and their ability or inability to develop policies that are based on broad majorities in both politics and society. Multiparty coalition governments with proportional representation and negotiation can create a more favourable socio-economic environment and be more effective in lowering unemployment and inflation (Olson, 1982). Lijphard and Crepaz provide conceptual frameworks and supporting evidence that governments with consensual, inclusive, and accommodative constitutional structures and wider popular cabinet support act more politically responsibly than more majoritarian, exclusionary, and adversarial countries (Olson, 1982). Based on the analysis presented in this chapter a transport climate change policy framework has been presented in chapter 1, building on aspects of policy integration, coalitions, and institutional structures that influence the policy environment. The goal of this framework is to illustrate the connections between policy approaches and governance aspects, stressing the point that an integrated policy approach taking into account the objectives of key actors and stakeholders can help reach a broader consensus on sustainable, low-carbon transport policy. It also stresses that such a consensus and integrated approach is essential to reach global climate change goals.

The indicative pathways of the various governance approaches are in line with the assessment that only by implementing all available measures at the local and national level in an integrated way climate change mitigation in the transport sector will be able to move towards a 1.5 °C or 2 °C scenario. If short-term technology shifts would be sufficient to reach the required greenhouse gas emission reductions, minimal majority coalitions could deliver bold and swift political action given that political parties in favour of climate change policies can reach a majority. However, what is actually needed, is a combined, long-term structural, technological and behavioural transition for the transport sector to actively contribute to global

climate change targets and deliver on wider sustainable development benefits. Hence, an integrated policy and governance approach is necessary building on coalitions and able to endure political change to address the multifaceted nature of the transport sector.

Conclusions

For sustainable transport policies an agreement on the necessity for policy intervention and a strategic, coherent, and stable policy environment are needed. It can be very politically sensitive to intervene in transport policies, like fuel and vehicle taxation, even more so when they are associated with only policy issue that may only be relevant for some political actors, such as climate change. These policies need a powerful political commitment to appear and stay on the transport policy agenda, ensuring that investments in cost-efficient sustainable mobility measures can endure over the medium to long-term. It is very challenging to maintain such a stable policy environment and highly dependent on political and institutional structures. Only the EU and (most of) its member states, Switzerland, and Norway have shown relatively high levels of stability in the area of sustainable and efficient transport policies among industrialised countries. On the other end, remarkable shifts in policy priorities and approaches can be observed in countries such as the US, UK, Canada, New Zealand, and Australia, in particular when related to climate change mitigation. These political and institutional patterns do not re-appear in the same form in many developing and emerging economies. While emerging countries such as India, Mexico, and Brazil experience similar political tensions and ideologies within the political spectrum, there is a close connection between low-carbon transport policies and other key policy objectives such as air quality, congestion, road safety, and access creates political pressure. This connection allows for a certain level of continuous progress towards sustainable mobility solutions in particular at the local level. This could be a vital contribution to a broader mix of local, national, and (where applicable) supra-national measures mitigating political volatility to some extent and foster policy coherence at the different levels of government. Similarly, the cases of India and Brazil show how coalitions at the local level can increase the level of stability in the policy environment.

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