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Deliverable 5

How to manage barriers to formation and implementation of policy packages in transport

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Abstract

The aim of this study has been to explore success factors and barriers to the formation and implementation of single policy measures and policy packages in transport, and to identify strategies to manage such barriers. As a first step, we developed a typology of barriers and success factors for policy formation and implementation. Secondly, we carried out an empirical analysis of barriers and success factors in four cases of policy packaging: Urban Congestion Charging; National Heavy Vehicle Fees; Aviation in the European Emissions Trading System and The EU's First Railway Package. The third and final task was to identify more general strategies to manage barriers in policy formation and implementation. A main conclusion in this report is that a conscious application of these strategies may contribute significantly to successful formation and implementation of even controversial policies or policy packages.

Table of Contents:

Quality assurance checklist	2
Abstract.....	2
Executive summary.....	4
1 Introduction	6
1.1 Background and aim	6
1.2 Research design	7
1.3 Methodology	7
1.4 Deliverable structure	10
2 Typology for success factors, barriers and strategies	11
2.1 Introduction.....	11
2.2 Policy formation and policy implementation.....	11
2.3 Barriers and success factors.....	12
2.4 What can raise barriers?	15
2.5 Towards strategies	17
3 Empirical cases	19
3.1 Introduction.....	19
3.2 Urban Congestion Charging.....	19
3.3 National Heavy Vehicle Fees	26
3.4 Aviation in the European Emissions Trading System	34
3.5 The EU's First Railway package	39
4 Strategies to manage barriers in policy formation and implementation	45
4.1 Introduction.....	45
4.2 Combining sticks and carrots	46
4.3 Expanding the policy scope and developing flexibility in negotiations.....	47
4.4 Trials – a way to create legitimacy and acceptance	48
4.5 Communicating benefits clearly	48
4.6 Using good examples.....	49
4.7 Preparing for windows of opportunity.....	50
4.8 Organisational responsibility and set-up	50
4.9 Applying state funding to instigate municipal investments.....	51
4.10 Selection of established or innovative technical solutions	52
4.11 Concluding reflections on transferability and generality	52
5 Barrier management in the policy packaging process	53
5.1 Introduction.....	53
5.2 The role of strategies to manage barriers in the policy packaging process.....	53
5.3 Barriers to what target? – The trade-off between effectiveness and acceptance.....	54
5.4 Other conflicts between barrier management and other criteria	55
5.5 Barrier management and the long term perspective.....	55
5.6 Revisiting the policy packaging framework	56
6 Concluding discussion	58
Acknowledgements.....	61
References.....	62
Annex 1: Inventory of success factors and barriers.....	69
Annex 2: Check list for interviews	73

Executive summary

Achieving a sustainable transport system is a major challenge in today's society. Transport is continuously increasing its share of greenhouse gas emissions, and aspects relating to accessibility, congestion, air pollution, energy demand, accidents and health must be taken into account when policies are being evaluated. A key issue for current transport policy making is thus to identify policies that are effective in reaching targets, efficient with regard to the economy, politically acceptable and practically feasible. Complexity is high and conflicting objectives often emerge. It is gradually becoming apparent that in order to achieve this demanding task, single policy measures often need to be combined into packages where measures mutually reinforce each other. This is what the OPTIC project is about.

This report deals with one of the most difficult elements in the policy packaging process, namely, how to manage barriers regarding policy formation and implementation. A key dilemma is that effective policies tend not to be accepted and implemented, while accepted and implemented policies often fall short of target achievement. The aim of the report is to explore success factors and barriers to the formation and implementation of single policy measures and policy packages in transport, and use these as a basis to identify strategies to overcome and manage barriers in this respect.

Three main tasks are taken on in this deliverable. In Chapter 2 we develop a typology of policies/barriers. One conclusion from this typology is that policies that are redistributive (i.e. imply redistribution of income by taxation or charges) and in particular such that entail spread advantages and focused disadvantages (entrepreneur policy) often encounter barriers due to lack of acceptance from the public and key stakeholders. The typology could be useful in the policy making process, in helping to identify – at an early stage – types of policies that are prone to encounter substantial barriers in the formation and/or implementation stages. However, the conclusion is not that such policies should always be avoided. Some of the most effective and efficient policies that exist are in essence challenging and will always meet significant barriers, simply because they require profound changes to current behaviour patterns and development trends, i.e. they often include redistributive and entrepreneur policy content. The question then is how to develop strategies to manage such barriers in practice.

The second task is clearly related to this question, and consists of an empirical exploration of barriers and success factors in four cases of policy packaging:

- Urban Congestion Charging (with examples from London, Stockholm and Manchester)
- National Heavy Vehicle Fees (with examples from Switzerland and Germany)
- Aviation in the European Emissions Trading System (EU level)
- The EU's First Railway package (with examples from the implementation process in Denmark and Sweden)

The cases, which represent four key transport policy areas, have been chosen in order to include policy packages that the typology suggests would be rather difficult to decide and implement, but nevertheless have proven successful in terms of policy formation and/or implementation (except for congestion charging in Manchester). If barriers can be managed even in these challenging cases, the success factors at work may be generalised to less demanding cases as well. However, when talking about success factors, it is important to consider how demanding the target used actually is. It may be that a barrier to acceptance is overcome by using an intermediate target level that is difficult to reconcile with long-term targets, e.g. regarding limiting global warming to 2 degrees.

The empirical analysis of (mostly) successful policy packages then provides the main input to the third task, which is to outline more general strategies to manage barriers in policy formation and implementation. The main strategies identified are:

How to manage barriers to formation and implementation of policy packages in transport

- Combining sticks and carrots
- Expanding the policy scope and developing flexibility in negotiations
- Trials – a way to legitimacy and acceptance
- Communicating benefits clearly
- Using good examples
- Preparing for windows of opportunities
- Organisational responsibility and set-up
- Applying state funding to instigate municipal investments
- Selection of established or innovative technical solutions

Although the outcome of practical policy making efforts is always dependent on external developments outside the influence of key actors and on the existence of political leadership, conscious use of the strategies proposed in this report can increase the likelihood of successful barrier management. The strategies identified here may therefore constitute an important element of the overall policy packaging framework developed in the OPTIC project, and is the main scientific and practical contribution of this report.

1 Introduction

1.1 Background and aim

Achieving a sustainable transport system is a major challenge in today's society. Transport is continuously increasing its share of greenhouse gas emissions, and aspects relating to congestion, air pollution, energy demand, accidents, accessibility and health must be taken into account when policies are being evaluated. It is increasingly being recognised that a clustering of policy measures into well-integrated policy packages is key in accomplishing effective, efficient, acceptable and feasible policies. The OPTIC project is concerned with improving knowledge on how to develop and implement such policy packages. This Deliverable summarises the findings of work package 5.

The aim of work package 5 (WP5) is to explore success factors and barriers to the formation and implementation of single policy measures and policy packages in transport and, based on this, to identify strategies to manage barriers in this respect. The identification and development of such strategies is of key importance in relation to the fulfilment of EU transport policy goals and ambitions.

Figure 1.1 shows the relationships between the different work packages in OPTIC. WP 5 builds on work packages 1-4, and generates input to work package 6.

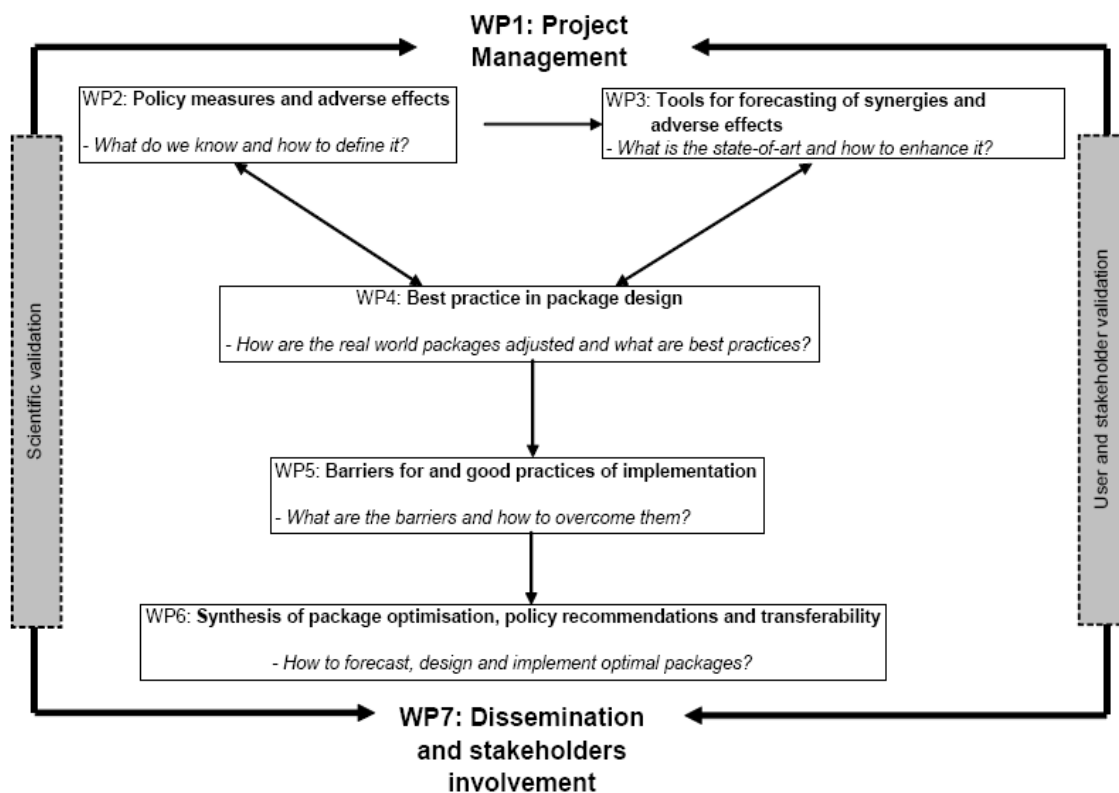


Figure 1.1: Structure of the OPTIC project.

In this report, special attention is given to barriers, success factors and possible strategies in relation to policy formation and implementation. Using policy packages might aid acceptability and implementation of measures by combining various elements in an intelligent manner (e.g. Ieromonachou and Waarren, 2008; May and Roberts, 1995). However, although a policy package can contribute to making the formation and implementation of policy measures easier, for other reasons it may encounter stronger barriers than a single measure, for instance because it involves more partners and issues and thus creates more

complex processes. If the policy goals in a package are vague and conflicting, this may contribute to confusion about what is actually to be implemented (Winter, 1990). Packaging competence thus requires intelligence regarding policy content, policy process and interactions between the two.

1.2 Research design

To accomplish the aim, we divided the work into three main tasks. The first one was to elaborate an inventory based on a literature review of transport policy formation and implementation, and further a typology that could serve as a framework for our analysis of empirical cases, based on a review of existing research on barriers, success factors and policy processes. This typology might in itself constitute a tool for policy makers to categorise and understand barriers and success factors related to the formation and implementation of policy packages in transport. The second task was to apply this typology to empirical cases from transport policy in order to get an in-depth insight into experiences from policy making and thus into success factors, barriers and strategies that evolve in practice. This also constituted the main basis for our third task, which was to identify more generally valid conclusions on strategies to manage barriers to the formation and implementation of single policy measures and policy packages.

1.3 Methodology

Our research is based upon a combination of literature, empirical case studies and dialogue with policy makers. Studies of theoretical and empirical literature contribute to developing the typologies presented in Chapter 2 and to the formation of preliminary building blocks for the subsequent 'barrier management strategies'. The typologies are used for structuring and analysing the case studies, which serve the purpose of extracting success factors, barriers and strategies.

The research is based on a qualitative approach, in which the empirical basis is constituted by a selection of cases chosen mainly because they are rich and interesting illustrations of policy formation and implementation issues. The following policy packages were selected:

- Urban Congestion Charging (with examples from London, Stockholm and Manchester)
- National Heavy Vehicle Fees (with examples from Switzerland and Germany)
- Aviation in the European Emissions Trading System (EU level)
- The EU's First Railway package (with examples from the implementation process in Denmark and Sweden).

These cases have been chosen in order to include policy packages that the typology suggests would be rather difficult to decide and implement, but nevertheless have proven successful in terms of policy formation and/or implementation. We expect the learning potential as regards strategies to manage barriers to be particularly large in such examples (Sørensen, 2008). The Manchester congestion charging scheme is an exception, since it was a scheme that failed. Nevertheless it served as important input to our research, not least in relation to the more successful stories from London and Stockholm.

The cases (and the various examples involved in them) enable us to go beyond a superficial understanding of policy formation and implementation in transport and learn in detail about success factors, barriers and strategies to remove, circumvent or counteract barriers. The selection of cases from various modes and policy contexts allows more general conclusions to be drawn. For all cases, we pay particular attention to the fact that the cases represent policy packages, looking into how combination of single policy measures into a package affect the process.

The cases represent some degree of diversity. They cover three different modes of transport (road, rail and air) on different jurisdictional levels (local, national and transnational (EU)). Passenger transport and freight transport are both covered. The cases represent different

types of measures, different aims and different phases in the policy process, policy formation and policy implementation. The examples of congestion charging in London and Stockholm, heavy vehicle fees in Switzerland and Germany, and the inclusion of aviation in the European Emissions Trading System (ETS) represent both policy formation and implementation. The case of congestion charging in Manchester only represents a policy formation process, whereas the case of the EU's first railway package focuses only on policy implementation.

The main purpose is not to compare the cases, but the examples within each type of policy package will be compared with one another in order to draw conclusions on how the processes are influenced by different conditions. The cases constitute our key basis for identifying and discussing strategies for managing barriers, although relevant policy literature as well as results from a previous OPTIC deliverable (OPTIC, 2011) have also been applied.

The case studies are all based on existing academic literature, policy documents and interviews. The interviews were qualitative and semi-structured conversations with key actors. The interviewees were politicians, civil servants, industry representatives, NGO representatives and independent experts. The number of interviews and types of interviewees are shown in Table 1.1.

Table 1.1: Number of interviews and types of interviewees in case studies

Case	Urban Congestion Charging	National Heavy Vehicle Fees	Aviation in ETS	The EU's First Railway package
Number interviewees	3+10 ¹	4	1 ²	4
Background of interviewees	Politicians Civil servants Industry representatives NGO representatives Independent experts	Civil servants Industry representative	Civil servant	Civil servants

The interviews were qualitative and semi-structured. They were carried out based upon a common interview guide (see annex 2), but the exact conversation and issues explored varied from interview to interview and was partly generated also by the interviewee³. All the interviews were recorded. Taking the point of departure in the recorded interview, a condensed summary of each interview was made and used for the analysis. All interviewees received a draft of the deliverable and have been asked to approve direct and indirect quotations. In addition to literature research, policy documents and interviews, dialogues with policy making practitioners were part of the methodology used for this deliverable. Hence, a workshop was held in Oslo on February 1, 2011 with participants from public administration, NGOs, industry and researchers. The background for the workshop was a brief draft deliverable, a presentation by the authors behind the deliverable and comments by two academic discussants. Furthermore, when the interviewees were asked to approve quotations, they were simultaneously requested to comment on the analyses and conclusions of the draft report, and a few interviewees kindly forwarded comments. Finally, we received detailed comments on the deliverable from two persons with long experience of policy making processes, a transport expert and former member of the Swedish parliament and the vice-president of the European Federation for Transport and Environment.

¹ The examples from London and Manchester are based on 3 interviews altogether. The Stockholm-example draws on an already existing extensive interview material that was collected by one of the OPTIC-researchers together with professor Anders Gullberg, Stockholm Research Institute and KTH (Gullberg and Isaksson, 2009). Their earlier research builds on interviews with around 50 persons involved in the policy process. The OPTIC-project has benefited from a direct access to this large empirical material but is based mainly on 10 of these interviews.

² The reason that only one interview was performed in the case Aviation in ETS was that during the literature review we discovered the work of Buhr (2008), which builds on 26 interviews about the policy formation process, some with interviewees that we originally had planned to interview.

³ For the Stockholm congestion tax and Aviation in ETS, there was an existing interview material. This means that material did not follow exactly the interview-guide developed for the OPTIC-project. Still however, we made sure to cover the same themes/issues in all cases.

1.4 Deliverable structure

In Chapter 2, an inventory of success factors and barriers as well as a typology of success factors, barriers and strategies to manage barriers for policy formation and implementation is elaborated. This typology is applied in Chapter 3, which includes descriptions and analyses of policy formation and implementation processes within four cases (and a total of eight examples as explained above). Each case is structured in three sections: *About the case*, *The policy process*, and *Analysis*. The cases constitute the main input to the Chapter 4, which aims to extract and develop key strategies to manage barriers in transport policy formation and implementation. In Chapter 5 we discuss how the findings of this report might be integrated in the overall policy packaging framework that is developed in the OPTIC project. We also briefly touch upon the potential conflicts between barrier management and other criteria for successful policy packages, e.g. effectiveness (target achievement) and economic efficiency. Finally, Chapter 6 contains a summary and conclusions of the deliverable.

2 Typology for success factors, barriers and strategies

2.1 Introduction

The term 'policy' has many meanings and definitions. We adopt a rather straightforward view on policy as 'public policy' defined as a decision or a set of interrelated decisions taken by political actors concerning goals and means of achieving them in a specified situation (OPTIC, 2010).

Policy can be understood in terms of ideas and/or processes. Policy ideas relate to the aims and goals of a certain decision, while the term policy process implies that the process of forming and implementing the ideas in practice should also be seen as part of the policy making process. This makes it clear that policy is, in essence, never static but under continuous change over time. It is a dynamic process, where the conditions for formation and implementation (in terms of actors involved, problem definitions, power relations, etc) are changing continuously.

The policy making process and different aspects of it have been dealt with within different fields of the political and organisational sciences, e.g. within literature on public policy (John 1998), public administration (Rhodes, 1997), decision making (March, 1994) and implementation (Hill and Hupe, 2002). The general literature on policy making has encouraged numerous studies within the field of transport, focusing on issues such as sustainable transport or sustainable mobility (e.g. Banister, 1998, 2002), traffic safety (e.g. Andersson and Vedung, 2007), road pricing - sometimes especially congestion charging (e.g. Gullberg and Isaksson, 2009) and mega-projects (e.g. Priemus et al, 1998). Transport policy research is often motivated by an interest in the particularities or barriers to effective policy formation. Compared with the general literature on policy making, the transport-related literature is usually more directed towards practically applicable results and problem solving.

2.2 Policy formation and policy implementation

Within the literature on public policy or policy analysis it is common to talk about phases or stages in policy making (John, 1998). For example Winter (1991) proposes four stages in political decision making: 1) agenda setting, 2) policy formulation, 3) implementation, and 4) evaluation and policy revision. Other scholars have suggested other and in some cases more stages, which indicates that the policy formulation stage could probably be extended and split into a number of stages (e.g. Hogwood and Gunn, 1984; Hupe and Hill, 2006; Mazmanian and Sabatier, 1989).

Such models are often based in the assumptions that a (relatively) clear separation can be made between politics (policy formation) and administration (implementation), and that the policy making process is rational in the sense that a careful and thorough examination of the relationship between ends and means is carried out by those responsible for policy making (Hupe and Hill, 2006; John, 1998). These assumptions have been criticised for not reflecting practice, and so have the stage models. Several writers argue that in real life there is no such clear beginning and end as the stage models presume, and that "the policy process does not operate at all in the manner hypothesized" (John, 1998: 23). Public policy making and implementation often does not follow a sequential and linear process, and is not determined by procedural rationality (Hupe and Hill, 2006; John, 1998; March, 1994).

In spite of the criticism, stage models in policy making seem to be very persistent⁴ (for instance also reflected in the initial policy packaging framework formulated within the OPTIC project). Though adhering to the criticism, Hupe and Hill explain the persistence of the stage models by arguing that the models, firstly, is normatively attractive because they are founded in views on democracy and rule of law (the Western *Rechtstaat*). Second, because they appeals to a general quest for control, and finally, because the orderly neatness of the stage models seems psychologically attractive (Hupe and Hill, 2006).

In this report, we agree with this criticism, and suggest that it is usually not easy to divide a policy process in such distinct stages. However, we still find it useful to make a distinction between the aspects of 1) policy formation and 2) policy implementation. We define policy formation in a straightforward way as the process until an authoritative policy decision is taken, while we define implementation as the process of carrying out that policy decision (Hill and Hupe, 2002). As for stage models it should however be emphasised that the policy formation and policy implementation processes are intertwined and in fact the specific content of a policy is often adjusted even during the implementation process. Our analysis of success factors, barriers and strategies refers to both policy formation and policy implementation. As is clear from the case studies presented in Chapter 3, the distinction is more clear and relevant in some cases and examples than others.

2.3 Barriers and success factors

An inventory of policy measures was established as an earlier output of the OPTIC project including 79 examples, and barriers were reported to be present in approximately 70 % of the examples (OPTIC 2010). Hence, it is not surprising that quite a few authors within the transport literature has dealt with barriers and success factors for specific fields of transport policy making and at different levels. An inventory of success factors and barriers based on some of this literature and specifying briefly the content of the individual success factors and barriers is attached in annex 1 to this report. In the inventory, the success factors and barriers are classified within different categories. It appears in the inventory that success factors as well as barriers represent very different types of factors, that they are usually context dependent, and that the definitions of 'success factor' and 'barrier' applied by the authors are broad. In this section we present our understanding of the concepts of 'success factor' and 'barrier'.

Most authors within this field seem to expect the concepts of 'barrier' and 'success factor' to be self-evident and do not explicitly define the concepts clearly, instead applying very broad concepts. However, some attempts have been made to define 'barrier' and 'success factor' more clearly. Hence, as regards barriers, a Swedish study on traffic safety politics define 'counter forces' as "public and private actors, that by the way of opinion formation, influence decision making and in other ways contribute to impede, delay or weaken traffic safety policy because other goals are given higher priority" (Andersson and Vedung 2007:6; our translation from Swedish). The specific counter forces mentioned in their work are municipalities, NGO's and government agencies.

Sørensen (2003), on the other hand, talks about 'institutional barriers' to integrating environmental concerns into transport policy. When a barrier is 'institutional', that means that it is a "super-individual, routinized practice including connected understandings" located within a certain organisation, for instance a Ministry or a planning department, or in the patterns of interaction between organisations or administrative units (Sørensen 2003:3).

⁴ Hupe and Hill find that "[h]ardly any other insight from public administration or political science has been so generally adopted by practitioners as the so-called stages model of the policy process" (Hupe and Hill, 2006: 26).

Within the road pricing literature, barriers are often related to public attitudes and the term 'barrier' can be derived as the public's lack of acceptance, i.e. problems with negative attitudes and resistance to a certain policy measure among the public or other key actors (Jones, 1998, 2003; Langmyhr, 1998; Whittles, 2003). The reason behind this can be traced back to various factors, such as deeply embedded social norms (Jaensirisak et al, 2005; Schade and Schlag, 2003) or low trust in whether the policy measure will really have the intended effect (Whittles 2003). Within transport policy literature, it has been stated that financial aspects/lack of funding (Banister, 1998, Sørensen, 2008) and unfavorable physical conditions (Banister, 2002) may also constitute barriers in practice.

Fewer authors deal with success factors or 'key implementation factors' (Ieromonachou and Warren 2008). Sørensen (2003) applies the term 'institutional potentials', using the term 'institutional' as explained above. Altogether, success factors represent a diverse collection of phenomena. In another article dealing with municipal road noise abatement Sørensen (2008:8) derives some "conditions which seems to be important for making municipalities actively provide for and implement road noise abatement measures". A broad definition like this is characteristic of the perception of success factors that we can derive from the literature (e.g. Banister, 2002; Ieromonachou and Warren, 2008).

In our work, we apply broad definitions of barriers and success factors – as is done in most of the literature. We define a success factor as any factor contributing to policy making processes of single policy measures or policy packages, and a barrier as any factor impeding or hindering policy making of measures or packages. In principle, any policy making process involves barriers as well as success factors, although barriers and success factors can be latent and not manifest, or manifest over time due to contextual changes.

In the remainder of this section we focus on barriers, since barriers and strategies to manage barriers are at the core of the report. We define a 'barrier' as a factor impeding or hindering policy making of single measures or policy packages. Since the word 'barrier' has physical connotations, we can imagine that in many cases barriers can be removed, overcome bypassed or avoided by simply taking another path or road with fewer or smaller barriers, but which leads to the same destination. If we omit the physical image, the barrier can be managed in other ways. It can perhaps somehow be transformed, deflected, circumvented, or even persuaded, or possibly none of this, but it can somehow be possible to counteract or compensate for the effects of the barrier. However, in some cases it will not be possible to manage the barrier in one or another way and no other path or road exists. In such cases, policy making as regards this specific measure or package has to yield, because the barrier and the hindrances it establishes are unalterable and do not allow the policy to go forward. Unalterable barriers in policy making are factors that due to some circumstances are not possible to influence and adjust for actors involved in a certain process. However, since hardly anything in policy making is stable, these hindrances might be altered later on due to other processes or circumstances. Exactly which factors are alterable or not may vary from one situation to another. The first OPTIC report (OPTIC, 2010) provides a useful tool for separating success factors as well as barriers. Here, we have developed a slightly modified categorisation. Based upon existing implementation research, we found it useful to distinguish between: 1) *Cultural conditions* which is about deeply rooted values and norms in society, in the cases we study often manifested through *public/stakeholder resistance or acceptance*; 2) *Political conditions*, which has to do with the parliamentary game as well as pressure group attitudes and behaviour; 3) *Legal and regulatory conditions* including legislation and legal power; 4) *Organisational/Institutional conditions* dealing for instance with roles and responsibilities among key actors and coordination issues; 5) *Knowledge and information* of relevance for policy making; 6) *Fiscal and financial* conditions covering e.g. budget circumstances; and 7) *Technological and technical conditions* which include available technology.

In the framework presented in Table 2.1 we apply these seven types of barriers which are further split into policy formation and policy implementation. There are some overlaps between these categories, and they are not mutually exclusive. In this study, they serve as a fundamental framework for how to understand specific types of challenges often appearing in a policy process. We believe that the seven categories presented in table 2.1 are always relevant to reflect upon in the early stage of policy formation and when developing a strategy for policy implementation.

Table 2.1: Framework of types of barriers with fictitious examples

Types of barrier	Policy formation	Policy implementation
Cultural conditions/public and stakeholder acceptance	<i>Lack of public and/or stakeholder acceptance of policy</i>	<i>Lack of acceptance by implementation agents and/or target group not behaving in accordance with policy</i>
Political	<i>Dominance of unfavourable leadership or coalition, or adversarial environment disallowing stable coalition of interests about measure or package</i>	<i>Disruptive political intervention in the implementation phase</i>
Legal/regulatory	<i>Necessary legal basis to adopt measure or package not in place or cannot be established legitimately</i>	<i>Necessary legal basis to implement measure or package not in place</i>
Organisational/Institutional	<i>Inefficient, unclear and counterproductive roles and procedures for policy formation</i>	<i>Institutional framework not conducive to measure or package implementation, e.g. unclear organisational responsibilities, lack of capacity or interorganisational conflicts</i>
Knowledge/information	<i>Inconclusive evidence available at the decision phase</i>	<i>Insufficient information available or being obtained about how to implement the measure or package</i>
Fiscal/financial	<i>Resources to cover costs to establish measure or package not being authorised</i>	<i>Resources to cover costs to establish and operate measure or package not actually delivered or obtained despite formal authorisation</i>
Technological	<i>Mature technology that can deliver desired policy outcomes is not confirmed or not believed to exist</i>	<i>Technology to deliver desired policy outcomes does not exist or is not allowed to work effectively</i>

2.4 What can raise barriers?

The content of a policy or a policy package and the context contribute to erecting barriers. It is not possible here to go into every possible reason for all of the above-mentioned types of barriers, but in the following we highlight some theoretical aspects that can shed some light on the question of why some barriers arise. Lowi (1964, 1985) has made a useful categorisation of public policy relevant for explaining barriers related stakeholder, public and political acceptance. He distinguishes between four types of policies:

- *Regulatory policies* dealing with legislation and sanctions to influence the activities of citizens and companies (in this context, e.g. road traffic acts),
- *Distributive policies* including most resource policies, research and development and business policies (in this context e.g. infrastructure policy). In the long run all public policies can be considered redistributive, because some people pay more in taxes than they receive in services, but here the assumption is that politics works in the short run, and we can define some policies as distributive.
- *Redistributive policies* which imply redistribution of income by taxation. Welfare state programmes represent traditional examples (but in our context, examples could be congestion charges and heavy vehicle fees).
- *Constituent policies* imply establishment of governance institutions. Changes in the constitution but also other institutional changes in public administration are considered constituent policy (in our context, e.g. establishing a new transport agency).

Lowi does not address the issue of barriers directly, but public and political acceptance could be expected to be more likely in the case of formation and implementation of distributive and constituent policies rather than regulatory and redistributive policies, because the former confer powers and privileges, while the latter impose obligations or positions (see also Ripley and Frankling 1982). On the other hand constituent policies might be more likely than the other types of policies to experience resistance from public organisations (institutional and organisational barrier), because this type of policy often changes the institutional frameworks of these organisations (Lowi 1985).

Another categorisation of public policy emphasises that the extent of likely success or failure for formation or implementation of a policy or package depends on whether advantages and disadvantages of the policy are concentrated to a small group or divided among a larger population. Hence inspired by Wilson, but widely applied within the field of public choice theory, the focus for a number of studies has been whether advantages and disadvantages of a policy are spread among large groups or focuses on a specific group (Wilson 1980; Winter 1991). This results in four policy types (see also Table 2.2):

- *Majority policy*, where both advantages and disadvantages are spread, is not likely to be decided and implemented because no specific group cares sufficiently. Examples of such policies could be consumer protection or gender equality. However, such policies can be decided and implemented if organisations or entrepreneurs are able to attract attention.
- *Entrepreneur policy* where advantages are spread and disadvantages focused. Groups affected negatively by the policy have incentives to organise and struggle against the policy, and hence entrepreneur policies are least likely to be adopted, and if adopted, they will often fail during implementation. Environmental policy could constitute an example of entrepreneur policy, as could policies implying public cutbacks in welfare state programmes.
- *Client policy*, with focused advantages and spread disadvantages is in contrast most likely to be adopted and implemented, because those groups benefiting from the policy will be likely to mobilise, while those paying the costs will not. Many distributive policies (see terminology by Lowi (1964, 1985) above) can be considered client policies. Transport infrastructure projects are also often characterised as client policy, where a smaller group benefits from e.g. new road infrastructure or traffic calming, while costs are paid by all tax payers.
- *Interest group policy* where both advantages and disadvantages are focused. In cases of these policies, strong mobilisation from both partners should be expected, and the outcome depends on the relative strength of each partner. Traditionally, labour market policies have been classified within this category.

So, following this terminology, client policy is most likely to be decided and implemented, while entrepreneur policy is least likely to be decided and implemented (Wilson 1980, see also Winter 1994). Another factor that needs to be considered is whether the net sum of all advantages and disadvantages is negative or positive, e.g. if a cost-benefit analysis would result in a net benefit or loss. This means that a package that generates a substantial net benefit may be accepted despite being a redistributive policy (e.g. congestion charging).

Table 2.2: Majority, entrepreneur, client and interest group policies.

		Advantages	
		<i>Spread</i>	<i>Focused</i>
Disadvantages	<i>Spread</i>	Majority policy	Client policy
	<i>Focused</i>	Entrepreneur policy	Interest group policy

When dealing with institutional and organisational barriers, institutional theory can provide explanations for barriers to raise. Following sociologically inspired neo-institutional theory, all organisations consist of collections of routines, procedures, and understandings. Organisations embody specific practices and understandings. For that reason, organisations are not just tools or instruments for a certain purpose. On the contrary, they are to some extent autonomous and have their own life, and actions are determined by a logic of appropriateness and some degree of path dependency (March and Olsen, 1989).

This might constitute a barrier when aiming to introduce new measures or policy packages in policy formation, as well as in implementation processes. Hence, barriers to the formation and implementation of policy packages depend on an action logic and the path and habits formed by and within a certain institutional framework (March and Olsen, 1989). Barriers to policy packages might also be connected to the inability or difficulties of policy makers in dealing with packages if they represent a new and perhaps challenging (in relation to established norms and values) way of thinking and acting. It might also be that the necessary coordination and collaboration across institutional and sector boundaries constitutes a barrier.

2.5 Towards strategies

As mentioned in section 2.3, there are different ways to manage barriers. We see strategies to manage barriers as conscious and deliberate actions that go beyond doing things “like we have always done” or “following established procedures” (Healey, 2007:30). A strategy thus needs to build on some kind of innovative approach regarding the way complexities, difficulties or barriers regarding policy formation and implementation are managed. A barrier management strategy is thus a conscious and deliberate action (or set of actions) in order to handle a barrier, e.g. by removing or circumventing it, or by counteracting its negative effects. Andersson and Vedung (2007) argue along these lines within traffic safety policy. Other authors have also dealt with such strategies (May, 2005; Sørensen, 2008; Tholstrup, et al., 2005).

The development of adequate barrier management strategies requires, in essence, insights into the specific barriers at hand – their constitution and the main reasons behind them. Hence, the formation of barrier management strategies can be informed by section 2.4, which describes causes for barriers to arise. In the following, we apply the terminologies provided in section 2.4 to establish some building blocks for formation of barrier management strategies. These building blocks in turn inform and inspire Chapter 4.

As regards cultural/public/stakeholder and political barriers it follows from the terminologies of Lowi and Wilson that policy makers should aim to establish policy packages with a flavour of distributive and client policies and avoid purely redistributive, regulatory and entrepreneur policy packages. Hence, for instance if a policy can be considered redistributive, regulatory or entrepreneur policy the chances of formation and implementation would increase if it were included in policy packages with aspects of majority or interest group policy, or even distributive and client policy.

Lack of timing might also constitute a political – or possibly cultural – barrier, and likewise we can imagine strategies to manage such barriers. According to the so-called garbage can model (Cohen, et al., 1972), many decision making processes are chaotic and the stakeholders' interests and goals are marked by confusion and ambiguity. Furthermore, the participants are not the same all through the decision making process, as some decision makers leave and new ones enter the process. Hence, a decision-making process is highly dependent on temporal relations of different events, and events that occur at the same time are associated with each other. A consequence is that the attention devoted to a problem is determined just as much by the moment at which that problem arises as by its actual significance. Temporal sorting makes it difficult to establish policy packages with an intelligent content, so it is likely that policy packages will be the accidental result of temporal relations. Attention is a scarce resource in decisions characterised by the garbage can model, and hence policy makers that succeed in keeping keep specific problems or solutions on the decision agenda have better chances of having them included in a decision (ibid.). Hence a success factor might be “persistent repetition of similar ideas and similar arguments over a relatively long period of time”, and hence long-term commitment, patience, and perseverance are core qualifications for planners and policy makers aiming to have specific problems or solutions included in a policy package (March and Olsen, 1989: 86).

3 Empirical cases

3.1 Introduction

In this chapter, we present and explore cases from transport policy. Our ambition with this outlook to policy practice is to get a more in-depth view and concrete examples of barriers, success factors and strategies for policy formation and implementation. As stated in Chapter 1, we want to cover different types of transport policy contexts; various transport modes; individual short-distance transport (in an urban or regional setting), long-distance freight transport and individual long-distance transport. The cases were also chosen in order to find policy packages that the typology suggests would be rather difficult to decide and implement, but nevertheless have proven successful in terms of policy formation and/or implementation (except for congestion charging in Manchester). If barriers may be managed even in these challenging cases, the success factors at work may be generalised to less demanding cases as well. This led us to the decision to focus on the following policy packages:

- Urban Congestion Charging (with examples from London, Stockholm and Manchester)
- National Heavy Vehicle Fees (with examples from Switzerland and Germany)
- Aviation in the European Emissions Trading System (EU level)
- The EU's First Railway Package (with examples from the implementation process in Denmark and Sweden)

It is worth noting that even though the cases illustrate various policy contexts and jurisdictional levels, it is only in the case of Aviation in ETS that we focus on the EU policy arena. As stated in the Chapter 1, the main purpose is not to make a comparative study, but in the cases that involve several examples, it is natural to make some comparison. The cases are intended to generate a rich source of empirical information on key success factors and barriers for policy formation and implementation, which in turn also constitute the basis for a more general discussion of strategies to manage barriers.

3.2 Urban Congestion Charging

3.2.1 About the case

Congestion charging in urban areas is one of the most widely debated urban transport policy measures, and has been the object of wide research, literature and political discussions during the last few decades (Button and Verhoef, 1998; Schade and Schlag, 2003; Whittles, 2003; Gullberg and Isaksson, 2009). Since it was first implemented in Singapore in 1975, where it was used to discourage motorists from driving in the urban core during peak periods, it has been heralded as a potentially effective measure for managing traffic congestion and environmental problems in many cities all over the world (Santos, 2004). Strictly interpreted, congestion charging is just one of several forms of road pricing and is concerned with managing the demand for road space. It is therefore important to make a qualitative distinction between such schemes and other road pricing schemes, such as toll roads, which may exist simply in order to recover the cost of infrastructure provision (e.g. the UK M6 motorway toll and the Severn bridge) (Santos and Fraser, 2006; Pryce, 2008).

The fundamental challenges surrounding the formation and implementation of congestion charging have changed little in recent decades. What has changed, however, is the number of actual attempts – both successful and unsuccessful – at scheme implementation. For example, in 2003 congestion charging was successfully implemented in London (Transport for London, 2003; Banister, 2004; Livingstone, 2004) and a few years later also in Stockholm, firstly as a seven month long trial in 2006 and then on a permanent basis from August 2007 (Gullberg and Isaksson, 2009). In both examples, the congestion charge was part of a larger policy package involving a range of other policy measures.

This section aims to identify and discuss barriers and success factors for the formation and implementation of policy packages involving urban congestion charging. Specifically, we direct our attention to the 'successful' examples of London and Stockholm and to the attempted formation phase in Greater Manchester. Although the latter scheme did not get past the referendum stage, it contains valuable insights for the analysis.

After first outlining the principal features of the London, Stockholm and Manchester stories and providing an overview of the broad policy processes involved, the bulk of the chapter aims to identify and discuss the key conditions that affected the formation and implementation of the congestion charging policy package in each example.

3.2.2 Policy making and implementation process

London

Traffic has been a hotly debated issue of general concern in London and the UK at large for several decades. In the 1998 White Paper 'A New Deal for Transport: Better for Everyone', the incoming Labour government pledged to reorientate UK transport policy away from a so-called 'predict and provide' ethos and emphasised the need to break increasing rates of car dependency (Department of Transport, 1998). Soon afterwards, the 1999 Greater London Authority Act set out a new structure of devolved governance for London, comprising a directly elected assembly, which eventually, after the first Mayoral election in 2000, was headed by executive Mayor Ken Livingstone. Livingstone had focused on the transport issue in his electoral campaign, and among other things incorporated a specific proposal for congestion charging alongside investments in public transport, as a means to create a more sustainable and less congested city (Livingstone, 2004). Livingstone's Transport Strategy for London contained plans to make road pricing a key feature of transport policy for London (Greater London Authority, 2001). In other words, when he was elected Mayor of the city in March 2000, Livingstone had thus managed to create a clear mandate for a policy package including congestion charging. However, there were still barriers to overcome – for instance acceptance problems among citizens. Even though there was overall public support for the ambition to reduce traffic congestion in the city, people responded negatively to parts of the proposal. This motivated an intensive round of public consultation and continuous dialogue with other stakeholders, which in turn was an important part of the overall design process, eventually ending up in the scheme that came into effect in February 2003.

In the London congestion charging scheme, motorised vehicles were charged a flat fee of £5 to enter the city's central zone. In July 2005 this basic charge level was raised to £8 per day. The core measure in the congestion charging scheme was a flat charge for private motor vehicles driving in the congestion charging zone. The charging period was active from 07:00 to 18:30 Monday-Friday and excluded public holidays. Those living inside the cordon received a 90% discount. Taxis, motorcycles, buses, emergency vehicles, disabled people, and certain low-emissions vehicles were completely exempt from the charge. In addition to the charge, TfL also implemented a formal package of complementary measures. Most notably, this included a £100 million investment in the bus system, which paid for an expanded bus network, bus priority lanes on main routes within and around the charging zone and improved facilities for longer trips. Frequency and reliability improvements were also made to the London Underground rail system and, in addition, traffic management measures related to road maintenance, displaced traffic and parking were included.

From February 2007, the congestion charging zone was enlarged by a westward extension which proved highly controversial. In October 2010, the new Conservative Mayor Boris Johnston announced a decision to abandon the westward extension and in early 2011, the zone returned to its original cordon.

The London congestion charge was intended to contribute directly to four of the 10 priorities set out in the Mayor's 2001 Transport Strategy for London. Specifically, it was intended to: (1) reduce congestion; (2) make radical improvements in bus services; (3) improve journey

time reliability for car users; and (4) make the distribution of goods and services more reliable, sustainable and efficient. In addition, the scheme was also intended to generate net revenues to improve transport in London more generally (TfL 2003). Later on, a few more explicit, measureable targets were presented. The congestion charging scheme was expected to lead to: (1) a reduction in total traffic (measured in vehicle miles) within the charging zone by 10-15%; (2) an increase in traffic speeds of 10-15%; and (3) a reduction in congestion (measured in vehicle delays) of 20-30%.

Stockholm

Traffic-related problems with noise, air pollution and congestion have been top of the agenda for policy-makers and residents in Stockholm over recent decades. Several policy interventions have been proposed as a means of addressing these problems, including road pricing measures (Isaksson, 2001; Richardson et al., 2010). Over the years, however, a lack of outright political power, fragile political majorities and controversies within the main political parties have made it difficult to agree on and implement these policy measures in practice (Isaksson, 2001, Richardson et al., 2010). However, the election in September 2002 gave the small Green Party the balance of power both locally in Stockholm and nationally in Sweden. They managed to bring in the issue of congestion charging as a central ingredient in government negotiations nationally as well as locally in Stockholm, eventually leading the national government to decide that a full-scale congestion charging trial would be implemented in the city of Stockholm (Gullberg and Isaksson, 2009). The conditions to implement the congestion charge (or congestion tax as it was called later on in the process) were thus very different to those in London. Instead of having a project champion who was personally devoted and had created a clear political mandate to form and implement a package involving congestion charging, the congestion charging trial was pushed through by a small political party and rested on a fragile agreement between three very different parties. The formal decision was taken by the national government, but in practice it was very dependent on the engagement from the local coalition in Stockholm, where the main party – the Social Democrats – had severe problems in relation to the congestion charge. Their local leader Annika Billström, who was also the Mayor of Stockholm, had promised not to implement congestion charging if she won the election, and the majority of voters were clearly against congestion charging policies. The situation was very difficult in terms of acceptance and legitimacy.

According to the government decision on the congestion charging trial (dated 1 October 2002), the trial had to be implemented during the existing term of office (which is always a maximum of four years) and 'last over several years'. In the end, the trial was slightly shorter than seven months long, from 3 January to 31 July 2006. A referendum held on election day 2006 resulted in a slender majority (51.3%) in favour of the tax. This paved the way for implementation of a permanent scheme in August 2007.

The Stockholm congestion tax is designed as a cordon around the inner city of Stockholm. Motor-vehicles passing through the cordon must pay a fee for each passage made on weekdays between 06.30 and 18.29. The tax for each passage is 10, 15 or 20 SEK (approximately 1, 1.5 or 2 EURO), depending on the time of day. The maximum amount per day and vehicle is 60 SEK (6 EURO). There is no congestion tax during the month of July, nor on weekends, public holidays and the day before a public holiday. Emergency vehicles, buses with a total weight of 14 tonnes or more, diplomatic vehicles, motorbikes, military vehicles and foreign-registered vehicles are all exempt from the tax.

During the trial period, the aims of the Stockholm congestion tax trial were: (1) to decrease traffic and congestion; (2) to enhance accessibility; and (3) to improve the environment. During the trial, the tax was deployed together with a range of other measures, most notably significant investment in public transport. This included the provision of new bus lines from

the outskirts to the inner city of Stockholm, new park-and-ride facilities and improved capacity in the subway system. The revenues raised from the scheme were earmarked for public transport investment within the Stockholm region. However, this was changed when the tax was introduced on a permanent basis. Since August 2007, the tax is instead part of a large infrastructure package and contributes to new transport infrastructure in the Stockholm region – specifically, the construction of a new motorway in the western parts.

Manchester

In the 2004 White Paper 'The Future of Transport', the UK national government announced the creation of a new funding mechanism for the transport sector, termed the 'Transport Innovation Fund' (TIF) (Department of Transport, 2004). The TIF was comprised of two distinct elements: a 'Productivity TIF' and a 'Congestion TIF'. The Congestion TIF was designed to incentivise regional and local transport bodies to "develop and deploy coherent, innovative, local and regional transport strategies" (Department of Transport, 2004:18), including road pricing, modal shift and improved public transport services (see Butcher 2010).

In 2005, the Association of Greater Manchester Authorities (AGMA) was one of eight local authority bodies to receive 'pump-priming' funds from the UK Department of Transport in order to support the development of a comprehensive and coherent anti-congestion strategy which, in turn, would form the basis of a bid for £3bn from the Congestion TIF (Butcher 2010). Together with its partner bodies, AGMA proceeded to develop a technically sound, mutually supportive package of infrastructure and regulatory measures designed to tackle congestion in Manchester. The main elements of the package included: major investment in, and extension of, the existing tram network; a comprehensive congestion charging scheme; significant investment in bus services and investment in so-called 'smarter choices' measures, which included the provision of travel information and measures to support the uptake of walking and cycling.

In 2007, AGMA voted to bid for the TIF and the UK national government let it be known that should the package be viable, the funds would be made available. However, opposition to the proposed congestion charging scheme mounted throughout 2007/08, involving among other things a strong No campaign. In December 2008, a public referendum was held, leading to a strongly anti-TIF result, with 21.2% in favour of the package and 78.8% against (Sherriff, 2009). As a result, the entire package was abandoned.

3.2.3 Analysis

Congestion charging is a typical example of redistributive, entrepreneur policy, where the advantages benefit the general public, whereas the costs are paid by a more limited group of travellers. According to the typology set out in Chapter 2, those kinds of policies will often cause political and cultural barriers in the form of resistance from target groups as well as politicians advocating these interests. This also proves to be the case in all three examples illustrated here, although most clearly in Stockholm and Manchester. The London story is an interesting contrast, illustrating the potential to gain public support for a political manifesto that includes such an 'unpopular' element as congestion charging.

In this section, we examine the key conditions that affected the outcome of the congestion charging policies in London, Stockholm and Manchester. Needless to say, many more details could be added to the stories from all the three cities. Here we focus only on the main barriers and success factors for policy formation and implementation.

First of all, the general conditions for how congestion charging could be launched in London and Manchester (UK) versus Stockholm (Sweden) differ greatly. If we look at the overall policy context, we note that in the UK in the late 1990s there was already a national political consensus over the need to break away from the established transport paradigm. This appeared to be a fundamental success factor for congestion charging in both London and

Manchester (although not leading to success in the latter example), since it created a basic platform and motivation for such a policy measure. In Sweden, the transport policy discourse is in general more optimistic towards the possibility to solve transport-related problems within the existing transport paradigm, through new technical innovations, alternative fuels, etc. (Hultman, 2010).

Despite the general differences in terms of general understandings about demands for changes to the existing transport paradigm, there are other facts to be gleaned from the stories of congestion charging in London, Stockholm and Manchester. First of all, lack of acceptance/public resistance stands out as a key barrier in all three examples, but the strategies to overcome this barrier differ greatly. In London, Mayor Livingstone was a clear project champion who had managed to create a strong mandate for the congestion charge by including it in his manifesto before the election. The negative reactions that arose later on in response to the preliminary scheme proposals could thus be managed fairly easily through consultation with key stakeholders and adjustments of details in the scheme.

In Stockholm, the situation was difficult. The Stockholm congestion tax was to a large extent the result of the Green Party's strategic action after the election 2002. The congestion tax decision was taken relatively quickly, with no time to build consensus or internal support in the Social Democratic Party or among key voter groups. Moreover, the Social Democratic leader in Stockholm, Annika Billström, had actually promised not to implement congestion charging during her term of office. Altogether, this meant severe problems in terms of legitimacy, support and acceptance, not only from the political opposition but also for Mayor Billström, within her own party. The internal criticism and some of the public resistance was managed by a number of adjustments to details in the congestion tax scheme. However, the general problems in terms of legitimacy remained severe and there was no way to escape the demands for a public referendum. Instead of having it in advance, however, the leading coalition in Stockholm decided to hold it after the trial. Mayor Billström explained in an interview how she thought that: "It wouldn't be possible to vote in advance, because then you wouldn't know what you are voting about. / . . . / This is an issue where people need to get a chance to see for themselves, to get an experience 'is it good?', 'is it bad?', 'how can it be improved?', and so on". In the end, the decision to hold the referendum after the trial stands out as crucial. The trial+referendum approach was key for managing the legitimacy deficit, and also served as a successful strategy for managing criticism in the preparatory phase. Since the referendum eventually led to a slender majority (51.3%) for the congestion tax, it paved the way for the implementation of a permanent scheme in 2007, but it was certainly a risky approach. A different outcome of the referendum would most likely have led the new political majority that took seats nationally as well as regionally and locally in Stockholm in the election 2006 to abandon the idea.

In the city of Manchester, the demands for a referendum were treated differently. The referendum, which was held in advance, ended up in a strong majority (78.8 %) against the congestion charging scheme and it unlikely that another similar scheme will be proposed in the medium-term.

There was originally no project champion in Stockholm. By taking the initiative for a congestion charging scheme, the Green Party to some extent took this role in the policy formation stage. However, being such a small party, it did not have a full mandate to act like a full project champion. Over time, however, the local coalition between the Social Democratic Party, the Green Party and the Left Party managed to build an atmosphere of trust and mutual respect. This led to an intensified collaboration and a more creative atmosphere in which it was easier for them to solve internal controversies, for instance around details in the scheme. In addition, there was a network of policy makers and experts who all made dedicated efforts for successful policy implementation, and who worked more or less closely to the Mayor and the Congestion Charging Secretariat. Eventually, and probably as an outcome of these internal processes, Mayor Billström shouldered a clearer

role as project champion, but she was not alone – it was very much a question of team work among a handful of key persons from politics and planning.

The experiences from London and Stockholm thus illustrate two very different (but in both examples successful) strategies to create legitimacy for contested and ‘unpopular’ policies. The London story shows that it is actually possible to create legitimacy in advance by presenting a policy as part of a political manifesto ahead of a general election. The Stockholm example illustrates another strategy, namely that of creating legitimacy afterwards by the combination of a trial and subsequent referendum. Altogether, however, the three cases clearly illustrate the pivotal role of having clear political leadership in challenging policies such as congestion charging. It seems that a project champion (which may be a single individual or a network of key persons) can make a major difference by initiating and promoting the policy, and lead the process and work deliberately from policy formation to implementation.

Another barrier that appeared in the Stockholm example was the lack of a legal and institutional framework. In London, Livingstone was endowed with all the powers needed to implement a congestion charge, and Transport for London (TfL) possessed a relatively extensive jurisdictional scope beyond that of most local authorities or regional transport bodies – it possessed a strong packaging competence and could control and initiate other measures that were important for the effectiveness, efficiency and technical feasibility of the congestion charge. This was not at all the situation in Stockholm, where no legal framework existed and where the roles and relationships between key actors and organisations involved were extremely unclear. However, since the issue of congestion charging had been part of the debate for several decades, there still existed preparatory work and expertise that could quite easily be brought into the process. Hence, the generally time-consuming process of developing a new legal framework evolved relatively smoothly, even though it took much time for the national government to get momentum in the process.

London and Stockholm chose two different paths as regards technology. Whereas London went for quite a basic technical system based on camera registration, the approach chosen in Stockholm built on more advanced technology where camera registration was combined with a transponder system that enabled direct debit of the tax from a person’s private account. The procurement process of the technical system is in itself a complex story. Of main relevance here is the fact that the National Road Administration’s decision in June 2004 to choose the solution provided by IBM was appealed in court. The jurisdictional process caused further delays to the already difficult process and almost ruined the implementation. So instead of starting the trial in August 2005, as planned, it was only able to start in the beginning of January 2006. However, the improved bus services and extra capacity in the subway started to run as planned in August 2005 (Gullberg and Isaksson, 2009).

It is obvious, in all three cities, that the role of the media is central in the policy process. Hence, it is crucial to develop a clear information and communication strategy. In Manchester, there were a number of weaknesses in this respect. Most evident is the fact that there was no politician or public authority that shouldered a strong leadership in favour of the scheme. The campaign for the congestion charging scheme was initiated by Clean Air Now, a network led by a variety of environmental organisations and campaigners and coordinated by Manchester Friends of the Earth (Sherriff, 2009). Later on, there was an official ‘yes’ campaign for the referendum and, although the leader of Manchester City Council spoke out in favour of the plans at times, the extent of clear public/official support for the scheme was substantially less than could be observed in the London and Stockholm examples. It also appears that the arguments put forward for the ‘yes’ campaign may have been too complex, detailed and nuanced for the public to fully appreciate. The expected benefits of the scheme for citizens were in general not lifted up clearly, but when discussed, main attention was paid on exemptions for certain groups (e.g. the elderly, disabled, the retired), rather than the implications of the scheme for the average working person. In contrast, the ‘no’ campaign

was able to appeal to basic and emotional instincts, and mobilised quickly with support from some of the business community. The media reporting was full of criticism also in London and Stockholm, but in both cities there was (in Stockholm a bit later on in the process, but still) a clear political leadership that managed to communicate the intention and the benefits of the policy packages.

In Stockholm, where problems with public opposition were greater than in London, the main responsibility for public information was eventually shared between the local congestion tax secretariat and the National Road Administration (NRA). This was probably important, since the NRA was perceived as a much more neutral actor that could not be accused of spreading political propaganda (as happened with the local secretariat). In Stockholm, the scientific evaluation of the results of the trial started to communicate results already on the first day of the trial. This was probably an important part of the communication strategy, since it was a way to ensure that the media picture would be built on correct data and not rumours.

Finally a factor contributing to success in Stockholm was that the project seems highly beneficial from a cost-benefit perspective. Net social benefits “recover” investment and start-up costs in around 4 years (Eliasson, 2009). For London there exist studies showing both a net benefit and a net loss (Transport for London, 2003; Prud’homme and Bocarejo, 2005).

A number of key success factors and barriers in relation to policy formation and implementation evolved in the Stockholm example and are shown in Table 3.1.

How to manage barriers to formation and implementation of policy packages in transport

Table 3.1: Key success factors and barriers in Urban Congestion Charging (L= London, S= Stockholm, M= Manchester)

Key conditions	Success factors	Barriers
Cultural conditions/ Public and stakeholder acceptance	Carefully prepared information and communication strategies (L, S). An ambitious round of public consultation (L)	Low public acceptance (L, S, M) Weak communication strategy (M)
Political	A national political consensus on the need to break away from the existing transport paradigm (L, M) A project champion who backed up the congestion charging policy and managed to create legitimacy (L) A political leadership developing over time, with a network of policy makers and experts who worked intensively for successful policy implementation (S).	Internal tensions in key political parties (S, M). Originally no political champion for congestion charging (M, S)
Legal/regulatory	An existing legal framework that supported this kind of initiative (L, M)	Non-existing legal framework (and to develop a new legal framework takes time) (S). A time-consuming round of appeals to court relating to the procurement of the technical system (S).
Organisational/ Institutional	A clear pioneering spirit among key professionals involved in the preparations (L, S). Existing institutional framework with clear mandates, roles, responsibilities (L)	Unclear roles and relations between the actors and institutions involved (S).
Knowledge/Information	Preparatory work and expert knowledge existed and was easy to access and bring into the process (L, S)	Underestimation of the extent to which a new legal framework would be needed (S)
Technological	Technical system worked well (L, S)	The procurement of a technical system took time and suffered by the unclear roles and responsibilities among key institutions (S)

3.3 National Heavy Vehicle Fees

3.3.1 About the case

There exist today several economic policy instruments aimed at reducing heavy vehicle transport on roads and sometimes also promoting a modal shift to rail and sea transport.

Examples are the Eurovignette in Belgium, Denmark, Luxemburg, the Netherlands and Sweden (Broaddus and Gertz, 2008; Wieland 2005); as well as specific fees introduced in Switzerland, Austria, Germany and the Czech Republic (Bundesamt für Raumentwicklung ARE, 2010). In addition, in Europe there are several fees covering both heavy vehicles and passenger cars on selected parts of the road network. All these initiatives are of interest, but in this study we focus on two of them, namely the heavy vehicle fees in Switzerland and Germany. The Swiss fee is particularly interesting and relevant for OPTIC, as the fee is included in a large policy package of other measures. It was the first distance-related heavy vehicle fee introduced in Europe as early as 2001. The main aim of the package was to push for a modal shift for freight transport from road to rail and to reduce the number of heavy vehicles crossing the Alps. The Swiss policy package includes the following core measures (Bundesamt für Raumentwicklung ARE, 2010):

- A distance-based and emission class-related fee for vehicles above 3.5 tons, the so-called LSVA, on the entire road network
- Stepwise increase of weight limits for heavy vehicles from 28 to 40 tons
- Applying the fee mainly to support funding of new rail infrastructure, including two railway tunnels, and to support the cantons
- A rail reform to improve productivity and competitiveness
- Support of combined transport.

The policy making, and to a lesser extent, the implementation process of this Swiss policy package form the main focus of the case study.

In addition, the German heavy vehicle fee package is incorporated in the case study. The German example is a more limited policy package that does not involve as many aspects as the Swiss package. It was introduced in 2005 and consists of a distance-based and emission class-related fee for heavy vehicles above 12 tons driving on the federal highways and some secondary segments. The package further includes application of the revenue for investment and maintenance of road, rail and inland waterways (Broaddus and Gertz, 2008; Wieland, 2005), as well as tax reliefs and a subsidy programme for heavy vehicle replacement for hauliers giving incentives to invest in low-emission vehicles. Sustainability and modal shift is not a core motivation for the German fee, although an important argument for some stakeholders (Wieland, 2005). Our empirical basis differs between the two examples, since interviews were only carried out for the Swiss example.

3.3.2 Policy making and implementation process

The Swiss package

The Swiss debate on a heavy vehicle fee started in the 1970s, when a commission set up by the Government suggested a distance-related heavy vehicle fee, arguing that heavy road transport did not cover the infrastructure costs it caused (Balmer 2005). Although a distance-related fee was not introduced at this point, because the technology was not considered ready yet, a flat fee was introduced for heavy vehicles in the beginning of the 1980s, 'flat' meaning that the fee was not dependent on the distance travelled (Balmer 2005).

However, the idea of a distance-related fee for heavy vehicles was not dead. Several referendums were held during the 1980s, where Swiss citizens could have their say about proposals that directly or indirectly involved the introduction of a distance-related fee. However, in all cases these proposals were turned down, probably because it was relatively shortly after the introduction of the flat fee, and in one instance also because a proposal allowed a general capacity to raise road user taxes, i.e. not only taxes on heavy vehicles (Balmer 2005).

Although the Swiss people obviously did not want the distance-related fees, many politicians were still very much preoccupied with this issue and continued to work for its implementation during the late 1980s and early 1990s. During these years, freight transport increased

rapidly, in particular in the Alpine region, where the opening of a road tunnel in 1980 contributed to increased growth (Werder 2004). The politically preferred solution was to transfer freight transport from road to rail, mainly by building two new rail links through the Alps. This solution was supported by a clear majority of the voters in a referendum in 1992 (Balmer 2005).

Core features of the Swiss constitutional system

- Switzerland is a federal state made up of 26 cantons. Power is distributed between the confederation and the cantons.
- At federal level Switzerland has a two-chamber parliament, the United Federal Assembly. One chamber is the National Council, which represents the population as a whole, and the other chamber is the Council of States, which represents the individual cantons.
- The Swiss Government comprises seven members of the Federal Council, who are elected individually by the United Federal Assembly. The president chairs the meetings of the Council. For 50 years the four largest parties in parliament have had seats in the Council.
- By exercising their right to initiate legislation, the electorate can request a popular vote on an amendment to the Constitution. If a popular initiative committee manages to collect 100,000 signatures within an 18-month period from people who are entitled to vote, a referendum will be held. Popular initiatives do not originate in Parliament or in the Government but come directly from the citizens.
- If some citizens do not agree with a law from the federal parliament, they can demand a referendum, and if 50,000 signatures can be collected within 100 days, the legislation must be submitted to a referendum. This vote is called an optional referendum. A mandatory referendum must be held e.g. in the case that the Federal Assembly decides to carry out a total or partial revision of the Federal Constitution, and changes in the constitution are common in Switzerland.

Sources: www.ch.ch and www.admin.ch.

The referendum in 1992 probably whetted the Government's appetite for providing the legal basis for a heavy vehicle fee too. In parallel to the preparation of a change in the constitution allowing a distance-related heavy vehicle fee, a popular initiative for the protection of the Alpine region against transit traffic was launched. The core of this initiative was a compulsory transfer from road to rail of all freight traffic through the Swiss Alps that had neither its origin nor its destination on Swiss territory (Balmer, 2005; Bundesamt 2010). Although the Swiss Government was clearly in favour of a modal shift from road to rail, they rejected the popular initiative, because they found it discriminatory and not in accordance with international law. Instead, the distance-related heavy vehicle fee was launched as an alternative solution (Balmer, 2005). Both the public proposal and the Government proposal were included in a referendum by February 1994, and it turned out that the Swiss people accepted the compulsory transfer as well as the heavy vehicle fee. Opinion polls showed that environmental considerations and solidarity with people living along the transit routes were the main arguments in favour of the compulsory transfer from road to rail (Balmer, 2005).

Important events during the Swiss process

- 1985: Introduction of a flat fee for heavy goods vehicles.
- 1986: Initiative for a distance-related heavy vehicle fee rejected at the ballot box.
- 1992: Project for two new rail tunnels across the Alps accepted.
Refusal to join the European Economic Area.
- 1994: Constitutional bases for a distance-related heavy vehicle fee accepted in referendum.
Popular initiative for the protection of the Alpine region against transit traffic accepted in referendum.
- 1998: In referenda the Swiss people approves the introduction of the distance-related heavy vehicle fee; funding of Alpine railway tunnels by use of the revenue; and bilateral agreements with the EU.
- 2001: Introduction of the distance-related heavy vehicle fee.
- (Sources: Balmer 2005, Bundesamt für Raumentwicklung 2010).

The 1994 referendum made the Swiss Government start drafting the detailed legislation necessary for the implementation of the fee. When the draft was presented to NGOs and political parties in parliament, the criticism was harsh. The majority of the organisations refused it or found that the time was not ripe. Five of seven political parties, including three of four parties represented in the Government, did not find it adequate. The arguments forwarded against the fee differed. Some criticised the level of the fee, the timing and the scientific basis for calculation of external costs, and the cantons demanded a greater share of the revenue of the fee. Hence, it still seemed impossible to realise the suggested legislation (Balmer 2005).

For the introduction of a distance-related heavy vehicle fee, a specific On Board Unit (OBU), which could register the distance travelled, had to be designed. When allocation of funding for the development of the unit was included in the federal budget for 1996, the first chamber of parliament, the Council of States, accepted it, while it was rejected twice, and then finally after impassioned debate accepted in the other chamber, the National Council (Balmer 2005:16). The difficulties of getting parliamentary acceptance for funding of the development of the OBU indicated the

future difficulties for the decision on the heavy vehicle fee. When a new secretary general to the Ministry of Transport took over in 1995/1996, the former secretary general advised him “to forget the whole project because it would not result in a success” (Werder 2004).

As it turned out, it was the Swiss country’s relationship to the EU that served as the final ‘push’ for the introduction of a heavy vehicle fee in Swiss legislation. The reason was that back in 1992, the Swiss people had turned down a proposal to join the European Economic Area (EEA)⁵. Standing outside the EEA, the Swiss Government instead aimed at establishing bilateral treaties with the EU. For the Swiss Government the ambition of concluding such agreements was to improve the framework conditions for Swiss industry in the same way as participation in the EEA was anticipated to do. The EU was also interested in bilateral treaties, not least to improve the possibilities for transalpine traffic (Balmer, 2005). At the time, Switzerland had different traffic regulations which were not favourable to heavy goods vehicles. For example, the allowed weight of heavy goods vehicles was limited to 28 tons, and as part of the 1994 referendum the Swiss people had further decided to limit the number

⁵ EEA includes a group of nations that are not members of the EU, but participate in the European Single Market and are obliged to adopt all EU legislation related to this market, except for the pieces of legislation relating to agriculture and fisheries.

of trucks passing through the Alps. Since the opening of the previously mentioned Alpine road tunnel in 1980, the importance of restrictions on heavy vehicles had increased (Balmer, 2005). Therefore, the EU as well as Switzerland aimed to negotiate and conclude bilateral treaties.

As things developed, the heavy vehicle fee eventually proved to be a possible solution in the negotiations with the EU. By introducing a heavy vehicle fee at a sufficiently high level, it could compensate for the consequences of an increased weight limit and support a modal shift from road to rail. Balmer (2005) states that “[p]oliticians in favour of the new fee seized the opportunity to put this item on the political agenda again, using it as a bargaining power for the negotiations with the EU”. Swiss acceptance of the higher weight limit simultaneously was an important prerequisite for making the EU accept a package of treaties anticipated to benefit Swiss industry. An EU precondition for negotiations was that the different treaties were seen as a package: Either the whole package of all treaties was accepted or the whole package was refused (Balmer, 2005). By the end of 1998 a so-called ‘Land Transport Agreement’ was concluded between Switzerland and the EU (Bundesamt für Verkehr, 2002), including the following measures (Bundesamt für Raumentwicklung ARE, 2010; Rapp and Balmer, 2003):

- The heavy vehicle fee and the levels of the fee
- A progressive increase in the weight limits
- Expansion of the network for transalpine traffic, and in particular to construct two railway tunnels
- Liberalisation of market access in road and rail transport and free access to the rail network.

The Ministry of Transport took a number of steps to improve public and stakeholder acceptance of the fee. Hence it was agreed that (Balmer 2005):

- 1/3 of the revenue of the fee should be allocated to the cantons
- The remaining 2/3 of the revenue should be earmarked for funding two new rail links across the Alps
- The fee should also be related to emissions
- Combined transport should be subsidised.

When legislation was submitted to Parliament in 1997 it passed both chambers with clear majorities. Soon thereafter, the Swiss Government delegated levying of the fee to the Federal Customs Authority (Balmer, 2005). This shift in authority responsible was made partly because the Federal Customs Authority was experienced in raising taxes, partly because it was convenient that another authority not involved in the policy-making process and considered ‘pro-fee’ took responsibility for implementation and the Federal Customs Administration was considered a ‘neutral’ partner.

The implementation process included extensive cooperation between the Customs Authority and the hauliers’ organisation. All through the implementation process the focus was on simple and proven technological solutions. The collection of the fee started as planned by January 1, 2001. According to existing studies “[t]here were practically no problems in introducing the fee and the [...] system has been running smoothly from the start” (Rapp and Balmer, 2003:8).

The German package

The introduction of a heavy vehicle fee in Germany was very much motivated by the increasing number of foreign trucks using the road systems but paying neither vehicle excise taxes nor gasoline taxes in Germany. As these taxes were the main source for financing road infrastructure in Germany and tax levels were higher than in many neighbouring countries, this situation was seen as a disadvantage to German transport companies (Wieland, 2005). Other factors were the support of modal split in favour of railway and environmental reasons. The legal basis for this vehicle fee was created with the Eurovignette Directive in 1993 and 1999. It allowed EU countries to introduce

national heavy vehicle road charging schemes that are considered to be in accordance with the EU principles on the free movement of goods. The main rules laid down here are that charging must be non-discriminatory, should be easy to use and fees should be based only on infrastructure costs. In subsequent amendments of the directive these rules were further differentiated, e.g. extended the calculation basis to include external costs (congestion, noise and air pollution) as well. (European Commission, 2011b). These new amendments also included the option of making it mandatory for all member states after a certain period for all trucks above 3.5 t. Here an exception was included that member states can raise this limit to 12 t if they can provide justification for that (e.g. unreasonably high additional operating costs). This clause was demanded by Germany and shows that the package must be seen on both national and EU level. On the national level the EU directive defines the possible scope of a national regulation. Thus, during the formulation and amendments of the EU directive national necessities can and must be brought into the discussion process

The German heavy vehicle toll is calculated based on distance travelled, number of axles and the emission class of trucks. The objectives are to finance transportation constructions and expand and promote heavy vehicle efficiency. The revenue is applied for investment and maintenance of road, rail and inland-waterways (Broaddus and Gertz, 2008). In addition, the German government offered domestic hauliers a number of tax reliefs. Among them, vehicle taxes were set at the lowest allowable EU level. A subsidy programme for vehicle replacement was created, giving incentives to invest in low-emission HGVs. However, the plan to provide rebates on fuel tax expenditure, which were to be deductible from toll expenses, was later overruled by the European Commission as unfair discrimination against foreign hauliers.

The German government adopted the scheme in 1998 as part of an anti-congestion programme and it was adopted with surprisingly little resistance from stakeholders. Car owners welcomed the toll as a way to reduce growing heavy vehicle traffic on motorways. Politically, the toll scheme served multiple policy goals and united disparate interests. At the time the German government was ruled by a coalition of the Social Democratic Party and the Green Party. Environmental groups and the Green Party embraced the toll scheme as a remedy for an underpriced public good and as a way to reduce heavy vehicle emissions through freight optimisation and modal shift. Industrial and labour interests and the Social Democrat Party saw the toll system as a way to create high-tech jobs in Germany and increase market share in international freight logistics in the next decade (Wieland, 2005). The main reason for the trucking industry not fighting the new toll system was that they saw user fees as a way to have foreign hauliers pay their fair share for Germany's roads. Foreign trucks often fuel up just across the border to avoid the high German fuel tax, and for this reason (among others), German hauliers felt that they were at a disadvantage when

Important events during the German process

- 1998: The government adopts a fee for heavy goods vehicles as part of an anti-congestion program.
- 2002: Toll Collect is chosen as operator.
- 2003: Expected launching of the scheme, but delays.
- 2005: Fee is launched.
- 2006: EU Commission overrules German rebates on fuel tax expenditures.

competing with eastern European firms that benefit from lower costs for labour, fuel and vehicle taxes. In addition, the German government included in the package a number of tax reliefs and the above mentioned subsidy programme. Another important factor for acceptance of the toll was that the media concentrated their reporting about the toll mainly on the technical and management problems of Toll Collect and the politicians, not on the economic and social issues.

In 1999, the Federal Department of Transportation started a bidding process and after a lengthy selection and negotiation process, a contract was signed with the consortium, Toll Collect, in 2002. As operator, Toll Collect handles all aspects of truck toll accounting and payments to the German federal government. The contract with Toll Collect called for the toll system to be launched in August 2003, but it was delayed for nearly two years. The first setback was a legal challenge in the European Courts brought by a rival consortium. Further delays were due to technical difficulties in the development process. The main difficulties that were encountered related to the On Board Units, which interfered with other on-board electronics of the vehicle and which exhibited compatibility problems with radio antennae (Wieland, 2005). This led to the cancellation and renegotiation of the contract in 2004, resulting in lower fees and higher financial penalties for Toll Collect. Besides extra legal costs, the German government lost revenues from phasing out the Eurovignette in 2003, allowing heavy vehicles to use Germany's motorway at no charge for two years (Broaddus and Gertz, 2006). In autumn 2004, the Federal government sued the consortium for €3.5bn in punitive damages (Knorr et al., 2009). At the time of writing (March 2011) the legal arbitration process between the German government and TollCollect was still ongoing. The German satellite-based heavy goods vehicles toll was finally introduced in 2005 for all trucks using national motorways with a maximum laden weight greater than 12 tons. Ever since the system became fully operational, it has worked very smoothly without any major technical glitches or service disruptions. In general, revenues have exceeded expectations, although the economic downturn has resulted in lower revenues. The number of environmentally friendly heavy vehicles has increased, but no changes in modal split from road to rail or inland waterway can be discerned (Knorr et al., 2009).

3.3.3 Analysis

In the Swiss and German examples, we consider the heavy vehicle fees to be the primary measure in the policy package (OPTIC, 2010). The fees generated can be considered redistributive, entrepreneur policies, where the advantages benefit the general public, while the costs are paid by the domestic and foreign road hauliers. Our typology stipulates that policies with this content will often cause political and cultural/public/stakeholder barriers in the form of resistance from target groups paying the costs, as well as politicians advocating these interests.

However, in both examples the fee revenue is applied for public works, which in itself can be considered distributive policy, as is the German subsidy programme for hauliers. The expected tax reduction in Germany can be considered a redistributive, client policy. The Swiss package also includes regulatory (liberalising weight limits) and constituent (rail reform) elements. Hence, the final policy packages, which include important elements of distributive policies and client policies, differ substantially from the primary measure, which in both examples could be considered a redistributive, entrepreneur policy, likely to be met by severe barriers.

The Swiss package is established in a very special national setting with particular institutional features. The national setting leaves the policy makers with many instruments and possible measures. In particular, popular votes and referendums are essential for establishing success factors in this example when applied intelligently by the policy makers.

Both examples are characterised by conflict and bargaining in the policy making process, and in the German example also in the implementation process. There are many actors and

stakeholders with conflicting interests and goals. This could create barriers, but is handled by the policy makers via flexibility in bargaining and compromising, and by extending the policy scope and hence providing a package considering the interests of strong actors, in the Swiss example e.g. by negotiating with the Alpine Initiative, the EU and the cantons, and in the German example by establishing a 'grand coalition' with all relevant stakeholders (Wieland, 2005). The Swiss example is further characterised by temporal relations establishing a window of opportunity when the negotiations with the EU launched possibilities for introducing the heavy vehicle fee. The window was applied consciously and forcefully by the policy makers. The core actors indeed seized "the right moment for pushing through a delicate project" (Balmer, 2005), and thus were aware of the importance of timing.

In these cases of national heavy vehicle fee packages, a number of key barriers and success factors manifested, as shown in Table 3.2.

Table 3.2: Key success factors and barriers in National Heavy Vehicle Fees (CH = Switzerland, DE = Germany).

Key conditions	Success factors	Barriers
Cultural conditions/Public and stakeholder acceptance	Flexibility in package design during negotiations with various partners (DE and CH). Highlighting it as a technical showcase from which industry will benefit (DE)	Linkage of heavy vehicle fee to general ability to tax road use causes lack of public acceptability early in the process (CH) Hauliers stress negative side effects (CH).
Political	Pioneering spirit by committed people who knew each other helped set up of the package (CH). Enlarging the bargaining room by incorporating the EU bilateral negotiations (CH). Being prepared for window of opportunity (CH).	
Legal/regulatory	Popular votes and referenda applied intelligently by the policy makers (CH)	Legislation not in place in advance (CH and DE). Choice of Toll Collect taken to court by competing bidder (DE)
Fiscal/financial	Making fee revenue pay for investments (CH and DE). Involvement of industry through public-private partnership (DE)	High administrative costs (DE).
Technological/technical	Smooth implementation with known technology (CH).	Development of complex, new technology for immediate full-scale launch proved more problematic than anticipated (DE).

3.4 Aviation in the European Emissions Trading System

3.4.1 About the case

Demand for air transport has been growing rapidly in recent decades, with average growth rates at around 5% per annum. At the same time, reductions in fuel consumption per passenger-km travelled have been around 2% per annum. In recent years, it has been the fastest growing mode of transport in developed economies and is predicted to remain so for the foreseeable future.

Following the IPCC report *Aviation and the Global Atmosphere* (IPCC 1999), the climate impact of aviation started to receive major attention. The report highlighted, among other issues, the effect that emissions of water vapour and nitrogen oxides at high altitude would have on climate change. This, together with the forecast increased growth of the industry, suggested that something had to be done. However, the international nature of air transport meant that international air transport was not included in the Kyoto agreement (Peters and Hertwich, 2008).

Instead, the policy package covered in this section was the response from the EU to the challenge of curbing greenhouse gas emissions from air transport. The package consists of four types of elements, each consisting in general of one measure.

The first element of the package includes the introduction of market-based measures to reduce air transport emissions and to internalise the external cost of air transport. In general, three such measures exist: fuel taxes, en-route emissions charges and emissions trading. Including aviation in the EU Emissions Trading System became the option chosen.

The second element/measure is to develop CO₂ standards for aircraft engines. At present only standards for air pollutants exist and these standards apply to the Landing-Take-Off Cycle. Work to define and implement this measure is taking place at the ICAO, and the EU contributes to this through its membership and involvement in the ICAO.

A third element of the package is investment in R&D to reduce aircraft emissions through improved operation and development of new technologies. For this, the EU Framework Programmes (FP) allocate specific funds for research in 'air transport and the environment'. Here the development of an alternative fuel to kerosene is seen as a major opportunity but equally a challenge.

The fourth element relates to infrastructure. The main measure pursued here is the creation of a 'Single European Sky'. This measure aims to ensure that the most efficient (shortest) route is used to fly between two airports, minimising unnecessary en-route detours and delays due to the present fragmentation of the European air traffic control system.

While work is underway for the implementation of the full package, the nature of the latter three elements described above suggests a very long implementation process, which can take years before it leads to meaningful results. On the other hand, pricing measures are seen as having the potential to deliver results more quickly. They are also considered to be important in 'signalling', through the price mechanism, the need to change (current) travel behaviour.

The EU ETS will be expanded from the current scheme that includes 'heavy industries' to also include air transport from 1 January 2012. All flights inside the EU or to and from the EU will be included (European Parliament and the Council, 2008). At first, the number of emission permits allocated to airlines will be capped at 97% of average greenhouse gas emissions in 2004-2006. Initially only 15% of the allowances will be auctioned. It is noteworthy that emissions other than CO₂ are not included in the scheme. According to Lee et al. (2009), water vapour and nitrogen oxides emitted by aviation together have nearly as great a climate impact as CO₂.

The main emphasis in this case study is put on the policy formation process and the final choice of emissions trading as the primary measure. Research which examined the likely effectiveness of including air transport within an emissions trading scheme largely came to the conclusion that it is unlikely to be very effective (Mendes and Santos 2008; Vespermann and Wald, 2010).

3.4.2 Policy making and implementation process

The foundation for the institutional framework which governs international air transport services was established in 1944 in what is known as the 'Chicago Convention', where the International Civil Aviation Organisation (ICAO), an agency of the United Nations, was established. At the time of the Chicago Convention, the main concern with respect to the newly emerging industry was to develop it and guarantee its survival, given the doubts about its economic viability, and therefore it was agreed that air fuel should not be taxed.

The 1997 Kyoto Protocol, from which international aviation was exempted, can be considered the start date of the process, as it represented the starting point of international action to abate climate change. Another initial, and important, milestone is the special IPCC

(1999) report on air transport contribution to climate change, which highlighted the urgency of specifically dealing with air transport given the new scientific evidence on the effect of emissions at high altitude and the expectation for rapid growth of the industry.

Within the negotiations that took place in Kyoto in 1997, a major dispute between the EU and US was the former's call for binding emission reductions compared with the latter's position that a more flexible/softer approach should be adopted in the form of emissions trading. In 1998, however, the EU changed its position and became open to the idea of emissions trading, although in addition and not instead of emission reduction commitments, as the European Parliament stated (Buhr, 2008). Following this change in opinion on emissions trading, a consultation process was initiated by the EU on the subject. In 2000 a Green Paper on greenhouse gas emissions trading within the European Union (European Commission, 2000) was published to start a greater debate on the matter.

In 2000, with the election of George W. Bush as president, the US withdrew from the Kyoto Protocol. This could have reduced the interest of the EU in this measure, but the opposite happened. The EU began calling for an EU emissions trading scheme that, as the EU Environment Commissioner at the time put it, "would be the foundation of a bigger building we hope to construct over time, i.e. international emissions trading" (Wallström, 2002 cit. Buhr 2008:86). An EU Directive on ETS entered into force in October 2003 and the scheme began operation on January 1, 2005. The directive, and subsequently the scheme, covered CO₂ emissions only from power and heat generation, iron and steel, oil refining, pulp and paper, cement and other building materials industries.

The increased attention on the climate change problem and air transport's contribution to it naturally also attracted the attention of the air transport industry. Through its own channels, and especially its involvement in the ICAO, the industry progressed the idea of emissions trading. Research sponsored by the International Air Transport Association (IATA, an international trade body representing over 200 airlines responsible for more than 90% of scheduled international air traffic), which examined aviation and emissions trading, concluded that it is "likely to be an appropriate tool to meet emission reduction commitments" (Buhr, 2008:101). More generally, IATA came to the conclusion that the industry is likely to face some form of restrictions on its emissions and therefore it should adopt a proactive coherent strategy to influence the debate in its favour (Buhr, 2008). The industry support for emissions trading was very much in the face of the support, mainly by various European NGOs, for the use of taxation as a measure. Taxation, it was expected, would have a much more adverse effect on the industry and especially the airlines.

The debate on the best way for dealing with air transport impact on climate change continued in the first half of the new millennium. Increasingly this debate narrowed to a discussion on emissions trading, although other options were still often considered. This development was much influenced by the UK, and in turn by the UK air transport industry. The UK activity on this front was especially important as it was about to assume the EU presidency. In this period, an important 'actor' was the research consultancy firm CE-Delft, which carried out studies on the subject for the EU Commission. At first CE-Delft was asked to study various options and concluded that emissions trading is an attractive option (but also pointed out the feasibility of two other types of charges). Later, it was asked to study specific ways to include air transport in the EU ETS (Buhr, 2008).

The European Commission initiated a call for input to the stakeholder consultation 'Reducing the Climate Change Impact of Aviation' held in 2005. Among the respondents the preferred policy option was air fuel taxes, followed closely by emissions trading and en-route charges. The aviation industry preferred emissions trading, while most other organisations including NGOs preferred fuel taxation (Buhr, 2008). In September 2005, the European Commission issued a Communication on 'Reducing the Climate Change Impact of Aviation' (CEC, 2005) and this represents the selection of emissions trading as the choice of market-based measure. The European Parliament and the Council of the European Union were invited to

respond to the communication. From this point the focus shifted to the 'how' rather than 'if' with respect to emissions trading scheme for air transport. A crucial institutional issue was the voting rules in the European Council. Any tax would have to be agreed on unanimously (Scheuer, 2005). For the option of emissions trading, on the other hand, a qualified majority would be sufficient.

Another action taken to move forward the implementation of the scheme was the establishment of a stakeholder group to assist the Commission in designing the chosen measure. To prepare for the necessary decisions to be taken, the Commission set up an Aviation Working Group that included a wide range of stakeholders, with many representing the aviation industry.

In December 2006 the European Commission presented draft legislation to include aviation in the EU ETS. In the summer of 2008 the European Parliament and the Slovenian Presidency reached a deal on including aviation in the ETS and finally on 19 November 2008 the legislation process ended with the inclusion of aviation in the EU ETS (European Parliament and the Council, 2008).

3.4.3 Analysis

This case is characterised by the highly international features of air transport and the concomitant difficulties in agreeing on effective policies. The policy formation phase was much characterised by bargaining processes. The EU Commission, with some support from the energy-intensive industry and NGOs, aimed for measures that would be effective in reaching substantial emission reductions compared with a business-as-usual scenario. The aviation industry, on the other side, naturally wanted to minimise the cost to its business, while at the same time realising that the present position of a total exemption from greenhouse gas pricing was untenable.

Including aviation in the ETS is mainly a redistributive policy and an entrepreneur policy. It is generally difficult to get acceptance for such policies. However, in this case, as mentioned, there was an apparent need for a more level playing field with regard to e.g. taxation of road transport. One might say that 'benchmarking' aviation to road transport was used in the debate as a lever to make the aviation industry accept some kind of pricing of its emissions. There was also a flavour of distributive policy added, by channelling revenues from auctioning of emission permits to R&D in aircraft technology and aviation fuels. Conscious communication of the climate impact of aviation and public consultations including the industry also appear to have contributed to overcome the barriers.

A key barrier was the voting rules of the European Council, which require unanimous decisions on fuel taxation. This appeared to be an insurmountable barrier with regard to the option fuel taxation. The consequence was that a less effective policy option, emissions trading, was chosen instead.

Regarding the implementation there might be some difficulties. The inclusion of air transport in the EU Emissions Trading Scheme is a complex policy process mainly from a legal perspective, given the nature of air transport and the legal/institutional frameworks set to control and govern it. These were set and decided as early as 1944 in the Chicago Convention with the idea of supporting a young and fragile new industry. The EU Directive that includes aviation in the ETS states that all flights departing from and arriving at EU airports should be included in the system, regardless of airline origin. This means that there is a risk that other countries as 'third parties' would object, and actually the US is at present suing the EU, claiming that flights to the US cannot be included in the scheme.

In the case of aviation in ETS, a number of key success factors and barriers were manifested, as shown in Table 3.3.

Table 3.3: Key success factors and barriers in Aviation in ETS.

Key conditions	Success factors	Barriers
Cultural conditions/ public and stakeholder acceptance	Benchmarking to taxation of emissions in road transport. Financing R&D on aircraft and fuels by revenues. Communicating scientific knowledge on aviation and climate change. Stakeholder consultations.	Aviation industry opposed to any pricing of emissions.
Legal/ regulatory	A less effective policy (emissions trading) was chosen instead.	The voting rules of the European Council, which require unanimous decisions on fuel taxation. The US is suing the EU, claiming flights to the US cannot be included in the scheme. (The verdict is still to come)

An interesting issue is whether this case can be labelled a success or not. It may be argued that it is a success since the industry is being made to take some responsibility for its emissions and pay for these. Taking this view, the main success factors may be identified as: extensive, well-prepared consultation and the thorough research conducted. The Commission has tried to address the acceptance barriers through extensive 'explanation' efforts as well 'education' measures with respect to climate change and the air transport contribution to it.

On the other hand, there was significant pressure to make aviation pay for its emissions, not least when a comparison is made with pricing of road transport. From this point of view, it may be argued that the outcome was not a success from a climate perspective, but rather among the best possible for the aviation industry. While there is no risk of 'carbon leakage'⁶ for aviation, it will still have the same conditions as industries such as steel and paper and pulp, regarding which there is a risk of carbon leakage. It may also be noted that greenhouse gases other than CO₂ will not be included in the emissions trading system, although for aviation other gases, e.g. water vapour and nitrogen oxides, together cause nearly as great a climate impact as does CO₂ (Lee et al. 2009).

⁶ 'Carbon leakage' means that an industry moves its business/activities out of the EU to a country where CO₂-emissions are not priced at all. The risk for carbon leakage is a reason for having a lower CO₂-tax on stationary industries like steel or paper and pulp that, contrary to aviation, can move their businesses out of the EU if their costs become too high.

3.5 The EU's First Railway package

3.5.1 About the case

As part of the overall efforts within the EU to create a cohesive, liberalised pan-European transport network, initiatives have been taken on the railway side to reduce cross-border inefficiencies and enhance interoperability. One such initiative is the First Railway package, which is an interesting case since in many ways it seems to define the basis for further development of the EU's railway policy. It was developed as a policy package at the EU level, and included, concretely, a range of administrative changes to be implemented for all member states. Since it has been in force for several years, it is possible to study barriers to implementation over time.

The First Railway package was initially designed to open the market and improve competition among rail operators and open the international rail freight market by establishing a general framework for the development of European railways. The package formally consists of Directive 2001/12/EC; creating and improving competition among rail operators (European Parliament and the Council, 2001a), Directive 2001/13/EC; opening freight market, licensing of railways (European Parliament and the Council, 2001b), and Directive 2001/14/EC; providing efficient infrastructure capacity (European Parliament and the Council, 2001c). The content of the Directives can be summarised as five main requirements, applying to all EU member states (Nash and Matthews, 2009):

1. Separation of the management of infrastructure, freight and passenger services into separate divisions, with their own profit and loss accounts and balance sheets. This implies establishing separate transport and infrastructure organisational units.
2. The establishment of a rail regulator, independent of the infrastructure manager and the train operators, which deals with appeals in the event of disputes. This implies establishing an organisational unit responsible for at least legislative appeals.
3. The establishment of a performance-based system to incentivise the infrastructure manager.
4. Allocation of train paths and fees for access to the infrastructure in a non-discriminatory way.
5. Requirements on the financial situation of the infrastructure manager; must be in financial equilibrium.

The Directives were passed by the European Parliament in February 2001, and the deadline for implementation into national legal frameworks was set to March 15, 2003. In relation to the typology presented in Chapter 2, the First Railway package can be expected to be fairly 'easy' to form and implement, since it does not aim to redistribute resources or change the allocation of advantages or disadvantages between groups in society. In practice, however, the First Railway package still involved considerable challenges for the EU member states, since it required a lot of organisational reform affecting the incumbent, employees, etc. The implementation involved several difficulties – technical, legislative, administrative, and political/ideological – relating to the reaction and involvement of stakeholders. Altogether, the result of implementation of the Directives varies a lot across EU member states. Railway interoperability is currently understood to be making 'moderate' progress in the short to medium term (European Railway Agency, 2009). In this section, we use the experiences from Denmark and Sweden to illustrate, more concretely, the kind of success factors and barriers that characterised the implementation process in these two countries.

The selection of Denmark and Sweden is motivated by the fact that they were both relatively well-prepared for the First Railway package, having implemented major elements of it prior to the introduction of the EU regulations. In this sense the ground was paved for successful implementation, but there were still barriers along the way. The overall similarities in the general cultural and institutional framework are in this case an advantage for the analysis, because they make it easier to relate the results from each example to the other.

3.5.2 The implementation processes

Denmark

In Denmark, major changes in the conditions for railway transport had been made before the First Railway package was adopted by the EU Commission in 2001. For instance, Danish State Railways was separated into one train operator (DSB) and one infrastructure holder (The Danish National Railway Agency, later Rail Net Denmark) back in 1997. DSB was turned into an independent public corporation in 1999, and further separation of the DSB was carried out in the late 1990s and in 2001, when the goods department, DSB Goods, was merged with Railion (now DB Schenker Rail). Legal changes in the late 1990s opened the way for tendering and free access to the freight market from 1999, and for passenger transport from 2000.

Denmark implemented the directives of the First Railway package into national law within the required schedule (through the Railways Act 155, which came into force in March 2003). Considering all the changes that had already been made, the organisational change introduced by the First Railway package was fairly small and comprised only the separation of a regulatory unit from the infrastructure holder. Denmark initially decided to meet this requirement by establishing one railway authority, the National Rail Authority (today Danish Transport Authority), responsible for railway regulation, planning and safety, with an organisational unit functioning as a board of complaints, the Danish Railway Complaints Board. The National Rail Authority was established in 2003 as an agency within the Ministry of Transport.

However, even though the formal adjustments had been accomplished early and on time, Denmark later received five reasoned opinions from the EU Commission for insufficient implementation of the requirements in the First Railway package. Three of these reasoned opinions relate to the former Railway Complaints Board for having too weak powers and resources, and for not being independent enough to be capable of monitoring competition in the rail service market. This led to a decision in 2010 to replace the Railway Complaints Board with a new agency, the Danish Rail Regulatory Body, which is independent of the Ministry of Transport. From our interviews it is obvious, however, that these organisational changes are solely to meet formal EU demands, and will not have any practical significance. According to one of our interviewees, the new agency, the Danish Rail Regulatory Body, is an organisational arrangement established solely to please the EU Commission. In practice, however, it does not have much central function in the Danish railway system, neither before nor after the institutional reorganisation of 2010, because Denmark has a system of clear and common rules, i.e. concerning rail charges and capacity allocation, indicating that there will not be any disputes requiring a Regulatory Body.

Another implementation deficit pointed out by the EU Commission relates to the issue of performance schemes – mentioned in a reasoned opinion from the EU Commission in 2009. A performance scheme is in essence a scheme to encourage railway undertakings and the infrastructure manager to minimise disruption and improve the performance of the railway network. This may include penalties for actions which disrupt the operation of the network, compensation for undertakings which suffer from disruption and bonuses that reward better than planned performance (Directive 2001/14/EC, Chapter 11). In Denmark, the infrastructure holder is responsible for collecting infrastructure fees and the development of infrastructure performance schemes. As it seems, however, performance schemes are generally not supported among Danish railway officials. Instead, they express the opinion that all involved parties will normally work towards the goal of a well-functioning infrastructure system anyway, thus questioning what performance schemes will actually add to railway practice apart from more complexity and administration.

Closely related to this is the issue of low infrastructure charges, which appears to be a main impediment to establishing performance schemes for operators in Denmark. According to our interviewees, higher infrastructure charges are hard to justify, not least because railway

freight transport is already facing hard competition with road freight transport. Furthermore, in practice, since the main railway company for passenger transport (DSB) is state-owned and subsidised, it all mainly leads to a procedure of shuffling money around within the system. In addition, the Danish government has introduced environmental grants (Rail Net Denmark, 2010) that will partly compensate for the infrastructure charges approved by the EU Commission. These different sets of rules imply that while introducing the new rules required by the EU Commission, Denmark is also introducing other local arrangements that somewhat maintain the old system and continuously lead to conflicts and contradictions with the new regulations.

Denmark has also received a reasoned opinion on infrastructure charges not being related to costs, or insufficient verification of whether the market can bear the charges. Denmark practices a uniform charging system based on kilometre use, regardless of the size and weight of the rolling stock. However, the EU Commission has specified that charges should be designed according to the size and weight of the rolling stock. One Danish interviewee stated that the main reason why Denmark had not succeeded in establishing a satisfactory system for relating infrastructure charges directly to costs was because the Commission itself was not able to provide constructive guidelines on how Denmark was supposed to organise their charging regime. The Commission merely pointed out shortcomings of the existing system. The same interviewee also stated that adjusting the charging system would add unnecessary complexity to the system, and that the Danish enthusiasm for implementing a new charging regime was minimal.

In summary, the ambitions to enhance railway interoperability by the requirements in the First Railway package have met a range of implementation barriers in Denmark. Barriers mainly seem to be related to culture and attitudes within the organisations responsible. Denmark has still not established the requested model in all its details.

Sweden

Just like Denmark, Sweden had already implemented several major elements of the First Railway package before it was introduced by the EU Commission in 2001. The 1988 Transport Policy Act had comprised a vertical separation of the Swedish State Railways into one train operator (SJ) and one infrastructure holder (Swedish Rail Administration, from 2010 merged with the former Road Administration and named The Swedish Transport Administration). This reform, groundbreaking for its time, is generally considered the starting point for the deregulation of the Swedish railway sector (Alexandersson and Hulten, 1999). In 1996, the government implemented deregulation of the rail freight market, and simultaneously enlarged the possibilities for the County Public Transport Authorities (CPTAs) to run inter-regional passenger services. In 2001, a further separation and corporatisation of SJ units was implemented, and competition in the vertical chain (rolling stock maintenance) was introduced.

Hence, Sweden was in several respects well prepared for implementing the First Railway package. However, Sweden failed to implement the package by the deadline, and was consequently referred to the European Court of Justice together with eight other EU member states. The Swedish Railway Act (SFS 2004:519) and the Swedish Rail Regulation (SFS 2004:526) were eventually approved by Parliament on July 1, 2004.

Since the Swedish train operator SJ had already been separated from the infrastructure holder Swedish Rail Administration, the First Railway package comprised only smaller organisational adjustments, in this case the establishment of the Swedish Rail Agency, which was formed from a unit administratively linked to the Swedish Rail Administration in 2004, but then made into a separate regulatory unit. The issues regarding non-discriminatory access to the network dealt with by the Unit linked to the Swedish Rail Agency were transferred and incorporated into a new agency. The agency, which also formulates regulations, examines

and grants permits and exercises supervision within the field of rail transport, was incorporated into the newly-formed Swedish Transport Agency in 2009.

When it comes to implementation barriers, the interviewees reported that in the beginning, the regulatory body faced some challenges in establishing well-functioning procedures and practices with the Swedish Rail Administration. Over time, however, the relationship between the two seems to have found its form and the troubles with implementing organisational reforms appear to have been relatively modest in the Swedish example – mainly related to establishing new communicative and cooperative routines.

Just as in Denmark, however, there has been an issue with the performance schemes. As in Denmark, the infrastructure holder is responsible for the collection of infrastructure fees and for the development of infrastructure performance schemes. In 2009, Sweden received a reasoned opinion from the EU Commission for not having established a satisfactory performance scheme. Swedish interviewees identified low infrastructure charges as the main impediment to establishing a performance scheme. However, one interviewee did point out that Swedish railway charges have increased significantly since the First Railway package was introduced, and that train operators have not opposed this increase. Generally, however, the Swedish interviewees questioned the need for strict performance schemes in the Swedish context, and expressed a concern that such a scheme could affect the relationship between the infrastructure manager and train operators in a negative way, by creating a more 'formal' and 'suspicious' dialogue between the parties.

On January 1, 2010, however, a legislative change of the Swedish Railway Act, introducing a performance scheme, came into force. An interim performance scheme was introduced in the network statement for 2011 (Trafikverket, 2010), while a permanent performance scheme will be introduced in the network statement for 2012. The infrastructure holder is responsible for train path allocation. Train path capacity is allocated annually, with a half-year revision. In addition, some capacity resource is reserved for ad-hoc allocations, especially relevant for freight transport. This arrangement represents an improvement from 2005, when train path capacity was allocated biannually in Sweden (Steer Davies Gleave, 2005).

3.5.3 Analysis

The First Railway package is a constituent policy, consisting of the establishment of institutional changes and adjustments in legal frameworks, etc. Accordingly, it is not an issue that one would expect to lead to any strong public reactions. Instead, the barriers are mainly related to internal resistance within the organisations affected by the changes. In this section, we discuss these barriers and the success factors and/or strategies for enhancing policy implementation.

First of all, however, a short reflection on the way the two countries acted pro-actively and thus already implemented several of the more challenging and time-consuming legal and organisational reforms required by the First Railway package before the Directives were launched. Thus, the immediate requirements of the First Railway package were not that great in either of the two countries. The fact that Sweden still missed the first deadline should be interpreted in terms of transposition deficit – which is a general and frequently observed problem in EU policy, relating to the quite common delays in implementing EU regulations into national law (Haverland and Romeijn, 2007). This is also confirmed by the Swedish interviewees, who suggest that the delay was probably caused by an underestimation of the efforts needed for full implementation of the directives by 2003, possibly related to the fact that the railway package was 'old news' in Sweden, and more pressing issues were receiving greater political attention.

Apart from the transposition deficit, the barriers to implementation that appear in the case of the First Railway package are mainly about internal resistance in the organisations affected. In both Denmark and Sweden, there was considerable resistance among officials in the railway administration. For instance, one Danish interviewee pointed out the paradox that

while the main goal of the First Railway package was to market-orientate the railway sector and make it more efficient, its means was to establish new institutions, new administrative procedures and a general growth in bureaucracy. A Swedish interviewee noted that EU railway packages consist of internally conflicting elements. For instance, safety regulations are both comprehensive and detailed, and may conflict with the objective of market opening. This potential conflict has become more evident as safety regulations are evolving, in parallel to increased competition and actor participation. A Danish interviewee summed up the content of the EU's First Railway package by characterising it as a closely attached mixture of favourable and unfavourable elements, making the implementation of less favourable arrangements, such as the establishment of the independent board of complaints, possible by providing favourable features such as liberalisation and modernisation of the sector.

Regardless of whether some of this criticism of the content of the First Railway package is valid, it clearly illustrates the key importance of attitudes among officials and/or professional groups in the organisations concerned. The attitudes may of course be related to ideological aspects (whether there is support for more market-orientated solutions or not), or budget maximising behaviour, but may also be about mere knowledge and information. For instance, one of the Swedish interviewees mentioned that the regulations in the directives of the First Railway package were, and still are, quite difficult to understand among key professionals in the organisation. It was simply difficult to identify the overarching objectives and establish fruitful principle discussions with the parties and actors involved. This, in turn, probably also influenced the way individuals in the organisations concerned (as well as the political leaders responsible) perceived the requirements and their overall motivation to support smooth implementation. Too vague a sense of what a policy is about will hamper personal engagement and sense of commitment. This can be related to other studies about how to enact change in organisations, where norms, attitudes, 'will to act', etc. stand out as key explanations for successful or failed implementation (Dovlén and Hilding Rydevik, 2008).

In Sweden, several initiatives have been taken to manage barriers in terms of negative attitudes among key professionals. The interviewees described initiatives taken internally to highlight and discuss the overall rationale and content of the policy package within the organisations involved. For instance, specific committees of people were appointed and given the task of examining the content of the policy further and coming back with more information about certain key issues, etc. This seems to have been an important part of the implementation process and can be perceived as a strategy to develop a body of knowledge, and a common sense within the organisation, of what a certain policy is about and how it should be understood. This seems to be a fruitful strategy to enhance successful implementation. The case of EU's First Railway package thus generates one important lesson: formation and implementation of constituent policies will benefit from having a clear idea of common norms, experiences and understandings among key professionals working with a certain issue and from the creation of arenas for discussing and building knowledge – and thus creating motivation – for a certain issue.

In the case of the First Railway package, a number of key success factors and barriers were manifested, as shown in Table 3.4.

How to manage barriers to formation and implementation
of policy packages in transport

Table 3.4: Key success factors and barriers in the First Railway Package (DK = Denmark, SE = Sweden).

Key conditions	Success factors	Barriers
Institutional/Organisational	<p>Initiatives taken to highlight and discuss the key features of the First Railway package and the main reasons behind its content, thus raising awareness, motivation and commitment among key professionals (SE).</p> <p>Strengthening internal routines for assessing the need for time and other resources for successful implementation on time (SE).</p>	<p>Acceptance problems among key professionals in the organisations involved (DK and SE).</p> <p>Transposition deficit due to an underestimation of the efforts needed for successful implementation (SE).</p>
Legal/Regulatory	Major elements of the railway package were already implemented (SE, DK)	
Knowledge/Information		Lack of knowledge of what the policy was about – the fundamental ideas and motivations (DK and SE).

4 Strategies to manage barriers in policy formation and implementation

4.1 Introduction

The cases presented in Chapter 3 illustrate that barriers to policy formation and implementation tend to vary greatly depending on the basic features of the policy (package) and the framework conditions at hand. We note that policies that aim at achieving profound changes in the transport system are more likely to confront difficult barriers (for instance strong opposition from key stakeholder groups and the wider public) than policies or policy packages that primarily aim to e.g. increase operational effectiveness within a certain mode. Even though the latter might be difficult to decide and implement, the policy packages that aims at more profound changes are often of key relevance in achieving targets. It is thus an important task to compile more general experience on how to enhance successful policy formation and implementation. As suggested in Chapter 2, policies with regulatory (dealing with legislation and sanctions to influence the activities of citizens and companies) or redistributive (which imply redistribution of income by taxation) content (Lowi, 1964, 1985) tend to be controversial. The same thing can be said for entrepreneurial policies (where advantages are spread and disadvantages focused) (Wilson, 1980). A general principle for policy formation might thus be to try to add more distributive and/or client policy features to policy measures (single or packages) with a fundamentally redistributive, regulatory and/or entrepreneur policy content.

In Chapter 4, we summarise our main conclusions on strategies for managing barriers in the formation and implementation process. As stated in Chapter 2, we define a strategy here as a conscious and deliberate action that goes beyond doing things “like we have always done” or “following established procedures” (Healey, 2007:30).

Quite a bit of transport literature has analysed success factors and barriers in policy formation and implementation as exemplified in the inventory in annex 1 of the report. The literature also but to a more limited extent describes strategies to manage barriers (Andersson & Vedung, 2007; May, 2005; Sørensen, 2008; Tholstrup et al, 2005). However strategies are usually less elaborated as in this report, and we consider the strategies presented here as the main scientific and practical outcome of the report. In the following we refer to existing experience when relevant, including other cases described and analysed within the OPTIC project (OPTIC, 2011). However, the main source is experience from the case studies in Chapter 3. From this material, we extract nine strategies. We try to discuss these in as general a way as possible, and to make clear what general barriers and/or difficulties they illustrate. Thus, the strategies presented below are intended to be suitable for use in managing similar barriers in other situations within transport policy. The main relations of the strategies to various barriers are shown in Table 4.1.

Table 4.1: Relationships between strategies and barriers

Strategy	Cultural conditions/ public and stakeholder acceptance	Political	Legal/ regulatory	Organisa- tional/Insti- tutional	Know- ledge/ Infor- mation	Finan- cial	Techno- logical/ technical
1. Combining sticks and carrots	x	x				x	
2. Expanding the policy scope and developing flexibility in negotiations	x	x					
3. Trials – a way to create legitimacy and acceptance	x	x			x		
4. Communicating benefits clearly	x	x			x		
5. Using good examples	x	x			x		
6. Preparing for windows of opportunity		x	x				
7. Organisational responsibility and set-up				x			
8. Applying state funding to instigate municipal investments	x	x		x		x	
9. Selection of established or innovative technical solutions							x

4.2 Combining sticks and carrots

In all four types of case studied, measures that can be expected to encounter resistance were combined with other, more popular measures. This reflects the strategy of combining sticks and carrots, commonly referred to within transport policy research (Jaensirisak et al, 2005) and is a key feature in the idea of policy packages. This strategy was central to both the heavy vehicle fee package in Switzerland and the congestion charging packages, and it involved clearly stating how revenues were returned to the public, which Harrington et al. (2001) have identified as a key success factor. The combination of sticks and carrots, and the clarity on how revenues would be spent, served as a key success factor for creating acceptance in policy formation in these two cases, but for the congestion charging packages it also had some influence in the implementation processes. By applying this strategy, the redistributive elements in the congestion charging schemes were made more acceptable, since travellers got something back, either in terms of improved bus services and other public transport (as in all three congestion charging cases), or in new road infrastructure (as in the permanent congestion charging scheme in Stockholm). This strategy also indicates a way of overcoming financial barriers by establishing of policy packages including pricing mechanisms, where the revenue is applied for funding of investments. This was the situation in the examples of the Swiss and German heavy vehicle fee packages as well as the congestion charging packages in Stockholm and London. In all these examples the revenue from applying a pricing instrument is used to fund investments. It should, however, be noted that there is a discrepancy between improvements actually occurring before the decisions is taken and such that are promised to happen after the decision. The Stockholm case, although providing new bus-lines prior to the decision, also shows that it is easy to later on change the promised use of revenues (in this case from public transport to road investments).

Although to a lesser extent, a combination of sticks and carrots also appears in other cases. For instance in the case with aviation in ETS, the revenues raised when auctioning emission rights for aviation will be used to fund research and development in aircraft technology and alternative aviation fuels. This will support the aviation industry with new knowledge, which makes the policy package more favourable for them and thus might reduce the possible opposition from their side.

Another thing worth noting is that in both London and Stockholm, the 'carrots' in terms of improved public transport was initiated a few months before the new charge/tax started to be levied. In Stockholm, this had not been planned in advance but was a consequence of the appealed procurement decision, which caused further delays to the introduction of the tax. In both examples however, introducing the carrots before the sticks seemed to work fairly well and meant, concretely, that it was easy for people to start to adjust their travel routines well before the introduction of the new charge/tax.

4.3 Expanding the policy scope and developing flexibility in negotiations

Actor- and stakeholder barriers were most prominent in the cases of Heavy vehicle fees, Congestion charging and Aviation in ETS. From these cases we learn that an important strategy for managing these kinds of barriers may be to consciously expand the policy scope and/or to develop flexible approaches in negotiations with stakeholders. This is similar to what Tholstrup et al. (2005) have termed "hitch-hiking" – referring to the way in which less popular issues (objectives + measures) might sometimes hitch-hike with more popular issues, in their example illustrated with CO₂-reduction initiatives being married together with traffic safety, noise or air pollution policies.

The strategy to expand the policy scope or to develop high flexibility around details in the policy design may be operationalised in somewhat different ways as illustrated in the cases. In the London and Stockholm examples there was a clearly flexible approach towards details in the congestion charging schemes, which allowed policy makers to negotiate and make exemptions for certain vehicle categories and other adjustments to increase acceptance from stakeholders and the public. In London, extensive public and stakeholder consultation was a key process to identify and respond to concerns from the public and specific actors and stakeholders. For instance, Transport for London (TfL) made early efforts to engage with the business community and get them 'on board' from the beginning (Banister, 2002). In Stockholm, as in London, a number of adjustments were made in the concrete scheme design. The Swiss example shows openness in negotiations towards the cantons. Moreover, the Swiss heavy vehicle fee package provides another interesting example. Here the policy scope was enlarged to even comprise a major non-transport issue when framework conditions for Swiss industry vis-à-vis the EU were introduced into the negotiation process. This appeared to be a key factor for the eventual success of the package.

It is worth noting the trade-off between expanding the policy scope and keeping a clear and communicative basic rationale of the policy package in question. Addressing too many different issues at a time may ultimately lead to new problems in both the policy formation and implementation phase. Similarly, several writers within the road pricing literature have pointed out the risk of a too flexible approach around details resulting in a watered-down policy (Banister, 2004; Isaksson and Richardson, 2009). In contrast, Langmyhr and Sager (1997) emphasise the overall value of getting a certain policy in place, and that this sometimes means that "a crude road pricing scheme may be better than no scheme". Referring to the common tendency for acceptance for controversial policies to increase after implementation, their argument is that once a "crude" system is in place, it may be adjusted to increased effectiveness and goal-fulfilment. The most important factor, however, is to get it in place.

4.4 Trials – a way to create legitimacy and acceptance

Trials have previously been pointed out as an interesting and promising approach for breaking deadlock situations and generating concrete experiences from controversial policies (Andersson and Vedung 2007). In the Stockholm example, the trial was in itself a central feature that enabled agreement to be reached at all. Then, as a response to the problems in relation to legitimacy the strategy that was developed was to combine the trial with a public referendum, held when the trial had finished. The strategy we identify here is thus the trial+referendum approach, where the basic rationale is to first force people to get concrete experience of how a certain policy will work and then, as a second step, allow them to vote yes or no to it.

In other words, the referendum that was held in Stockholm was not at all the same as the referendum that was held in Manchester. In the latter case too, the idea to hold a referendum came up in response to a difficult political situation. However, the referendum was not combined with any trial but held before a planned policy implementation and thus in Manchester, the referendum led to a no.

Several things should be noted here. First of all, referendums are always risky. It is probably never a good idea to arrange a referendum in advance of a planned implementation of redistributive policies affecting large population groups, simply because it will in most cases lead to a no. However, a referendum may sometimes be a key measure to break a political deadlock. If so, the combination of a trial+referendum seems to be a promising strategy. In the case of Stockholm, it was a way to manage the legitimacy issue and to increase acceptance both in the policy formation phase and in the implementation phase. It was also an effective strategy for meeting criticism along the way: political leaders in Stockholm could effectively disarm most of the opposition before the implementation by referring to the upcoming referendum.

4.5 Communicating benefits clearly

The necessity of developing a dialogue with those opposing a policy or policy package has been suggested in other research reports on policy implementation (Andersson and Vedung, 2007, Sørensen, 2008). Communicative and participatory strategies are essential as part of the policy implementation process and were applied in the cases of Heavy vehicle fees, Aviation in ETS, and – most evidently – in the Urban Congestion Charging case. In the Swiss political system of direct democracy the government has to lead a permanent process with the population and an expanded participatory process with all stakeholders. Otherwise the government will not succeed in the final popular vote. As explained in the example of the Swiss heavy vehicle fee more popular votes took place, and preparation of the communication related to these votes had to start years before the votes took place. As regard the Congestion charging case, there are various aspects that are worth mentioning here, for instance the broad consultation process that served as a clear input to the London scheme design. In both London and Stockholm, there were clear information strategies, which involved a profound and professional communication of the results. The Manchester example differs – here it seemed difficult for the city to initiate any clear information about how the system would work and the arguments put forward for the scheme were probably too complex, detailed and nuanced. It has been argued that many people probably did not know how the system would work for the average person.

In terms of communication, it is interesting to note that the Swedish National Road Administration (SNRA) had a key position in informing the public of how the Stockholm congestion tax would work during the trial. The SNRA got its formal role confirmed at a very late stage in the implementation process and was thus not associated with being ‘for’ or ‘against’ the trial, but was perceived as a ‘neutral’ partner. The way which it was able to initiate the communication and information campaign in a neutral way made parts of the information task easier. In contrast, the parallel information campaign initiated by the City of

Stockholm was met with much more scepticism among the public. Thus, it is probably a good idea to try to identify an actor that may be perceived as neutral, especially in cases when public acceptance and trust are critical.

Just as the SNRA was applied as a 'neutral' partner in the implementation phase in the Stockholm example, the Swiss Government delegated levying of the fee to the Federal Customs Authority. It was also considered a neutral partner, not for or against the heavy vehicle fee, and thus could enter smoothly into necessary and extensive cooperation with the hauliers' organisation, and thereby integrate this interest organisation into the implementation process.

In the case of Aviation in ETS barriers were addressed partly by communicating scientific knowledge with respect to climate change and air transport's contribution to it. Stakeholder consultations were used and a stakeholder reference group, the Aviation Working Group, was set up to assist the Commission in designing the final policy.

In some cases, there might also be a need for internal communication strategies, aimed at managing potential barriers within the organisation or institution where implementation is supposed to happen. This was illustrated clearly in the case of the First Railway package. As stated in the Swedish example, the First Railway package was perceived as quite advanced and detailed among professionals working in the key public institutions affected by the new policy. The strategy to inform and educate professional groups concerned about the core content and key ambitions of the policy package was probably decisive for generating the motivation and commitment required to develop a successful implementation process. Internal communication strategies are of key importance especially when constituent policy/ies are to be formed and implemented, because those policies sometimes demand quite radical adjustments of routines, norms and frameworks in existing organisations. It is important to note that internal communication strategies need to build on insights about the common norms, experiences, and understandings that motivate relevant professional groups in their daily work.

4.6 Using good examples

Modelled forecasts of the effects of a certain policy are potentially important, but it might be even more persuasive to present concrete experiences from existing cases of policy implementation. Congestion charging in London is perhaps the most convincing example here, since it has obviously inspired a number of cities all over the world to consider something similar. For instance, the London example was important for the way things developed in Stockholm. The media reporting of the positive outcome in London served as a vitamin injection to the then quite difficult policy process in Stockholm. It appears that Stockholm has in turn inspired Gothenburg, which has now decided to introduce congestion charging as well. But London (and other cities) has also made use of earlier experiences of congestion charging, e.g. early congestion charging scheme used in Singapore since 1975.

In this context it is interesting to note that what is a good example is not always evident, like in the case of Aviation in ETS. Here, a strong argument for making aviation pay for its emissions is that road transport (and rail transport) already pays for its emissions. This can be seen as a 'benchmarking' or referring to a (comparatively) good example with regard to pricing of emissions. However, as the policy process unfolded in this case aviation will pay more than before (when no CO₂-tax at all was levied) but considerably less than road transport do, at least in the short term. If considered as a success, with regard to climate targets, aviation may be used as a good example for future taxation/charges of sea transport. If on the other hand Aviation in the ETS is not considered a success and that this outcome was among the best possible for aviation industry as such, then the example might still be used, but possibly in this case as a benchmark by the maritime industry to avoid pricing of CO₂ at the levels that road transport face.

4.7 Preparing for windows of opportunity

Politics is often characterised by complex processes, from time to time involving totally unexpected developments and radical shifts in policy agenda. It is probably impossible to have a plan for all possible opportunities that may develop over time in a political process. Sometimes, windows of opportunity may open up all of a sudden. This was what happened in Switzerland, where a window of opportunity opened up for a relatively short while when the negotiations with the EU allowed possibilities for introducing the heavy vehicle fee. Similarly, in Sweden, after the election in September 2002, the Green Party suddenly held the balance of power in all three policy arenas (nationally as well locally and regionally in Stockholm). This allowed them to push through the congestion charging trial. Previous research within OPTIC has revealed similar windows of opportunity for example in the design of a Danish national scheme for transport and environment (OPTIC, 2011), as has earlier research within the field (Sørensen, 2008).

The exact outcome of a window of opportunity is always a matter of timing and political skills, in combination with a range of unpredictable and variable factors that affect the policies that may or may not be possible and not possible to go for. A possible strategy, which was applied deliberately in the Swiss example and to some extent in congestion charging in Stockholm was for key actors to build knowledge, to maintain competence and expertise and to prepare decision support which could be successfully 'pulled out of the drawer' (OPTIC, 2011) at the right moment. Thus, long-term commitment, patience and perseverance are core qualifications. Other research has similarly stressed the importance of continuously mapping the need for initiatives and preparing status reports to the political level, thereby keeping an issue on the political agenda and increasing the chance of solutions and initiatives being applied when a window of opportunity opens (Sørensen, 2008).

Likewise, it is important to be proactive with respect to regulations and legal issues that can take years to implement. For instance, in the case of Aviation in ETS, the European Commission recommended back in 1996 that aviation fuel should be taxed "as soon as the legal situation allows the community to levy such a tax on all carriers..." (Bhur, 2008: 96). This case illustrates that there may sometimes be a need to start changing the legal frameworks even if a decision on implementing a tax has still not been taken and will probably take years to come.

4.8 Organisational responsibility and set-up

All organisations consist of procedures, routines and understandings, which might make them difficult to change. When aiming to introduce new policy, this can constitute barriers in both the policy formation and implementation stage. For that reason strategic considerations to the organisational set-up are crucial. The case-studies reveal various ways to handle this issue.

Although only a newly established organisation in 2000, Transport for London (TfL) gained most of its functions from its predecessor London Regional Transport, and in that sense it was an existing organisation that had responsibility for the congestion charging package when introduced in 2003, but managed to handle it. The Swiss experiences with the heavy vehicle fee package illustrate that the Ministry of Transport was indeed working for this package including the new policy of a distance related heavy vehicle fee.

However, in some situations it might be wise to involve different organisations at different stages of the policy making and implementation process. This strategy was consciously applied during the process of the Swiss heavy vehicle fee package and partly also in the Stockholm congestion charging trial. In both examples there was a shift in responsibilities when policy making was finished and implementation activities began.

In the Swiss example, levying of the fee was delegated to the Federal Customs Authority, a shift undertaken partly because this authority was experienced in raising taxes and their

competence within this field could be applied, and partly because a shift to a 'neutral' authority made it easier to establish cooperation on the implementation of practical and technical issues with organisations opposing the fee. In the Stockholm example a similar approach was applied. While policy making was prepared in a relatively small and municipal congestion charging secretariat, implementation of the fee was, and is, the responsibility of the 'neutral', national Swedish Road Administration.

However, the application of existing organisations for new objectives and policies might not be easy, because new ideas might be repelled or decoupled (Røvik, 1998). If that is experienced or expected in advance, it might be wise to establish new organisations. The Stockholm example illustrates the potential key role of a new administrative unit for implementing unconventional policy measures. Compared with TfL, the Stockholm congestion charging secretariat was a very small office. This is interesting since it illustrates that the most important aspect might not be the number of people or resources, but instead the key aspect of having an administrative unit working directly under the mayor and with a clear mandate. One of the main features of a very small secretariat was that it allowed a break from established procedures, routines and mindsets that may rule existing administrative units.

The EU First Railway package also provides some input in relation to this. As mentioned in section 4.5, the success of internal communication within the organisations that are mainly responsible for the implementation is dependent upon having good insights into the norms, values and understandings that motivate key professionals. In other words, it is important to acknowledge the decisive role of professional norms as part of the organisational arena.

4.9 Applying state funding to instigate municipal investments

We previously stressed that jurisdictional levels might constitute different institutional conditions for policy formation and implementation, and we emphasised that lack of funding might constitute a severe barrier at the local level. Thus, from a national perspective, there are various ways in which the state may instigate municipalities and other local authorities to develop policies in order to achieve national policy objectives. These have been applied in many different countries and contexts and have also been evaluated to some extent. For instance the Danish 'Government Transport and Environment Scheme' (OPTIC, 2011) subsidised up to 50% of projects that would help municipalities implement local transport and environment action plans. The scheme was evaluated in 1998, and the evaluation was reasonably positive, stating that the scheme "has reached its goals within a number of areas, while other areas still cannot be described as satisfactory" (PLS Consult and Flyvbjerg, 1998: 7-17). A similar scheme has been applied (and evaluated) in Norway (Norconsult and Urbanet Analyse, 2007). In addition a study on road noise abatement in Nordic municipalities stressed the importance of financial state contributions being available for municipal activities in the field, particularly in initial phases of new noise abatement schemes (Sørensen 2008: 8).

Among the case studies examined in this report, a similar approach is manifest in the Manchester example of congestion charging. Through the state 'Transport Innovation Fund' (TIF), the Association of Greater Manchester Authorities (AGMA) was to receive £3bn in order to implement a comprehensive and coherent anti-congestion strategy. Although the entire package in Manchester was abandoned due to opposition to the anti-congestion strategy, the Danish and Norwegian cases show that the state can make local authorities change investment policy if motivated by the possibility of achieving state funding. However, the Manchester example illustrates the downside of this strategy: if congestion charging had not been a requirement for state funding in that case, Manchester could perhaps by now have implemented some other beneficial policies, albeit probably not as effective as congestion charging.

4.10 Selection of established or innovative technical solutions

When the Swiss heavy vehicle fee package was implemented a deliberate strategy was to apply a simple and proven technological solution for levying the fee. In Switzerland two systems were developed to levy the fee, one for users equipped with an On Board Unit (mandatory for domestic vehicles) and one for users without such a unit (most foreign vehicles). Both systems are very simple. The key element for measuring the distance is the tachograph, which is mandatory in all commercial vehicles throughout Europe. The system for users equipped with an On Board Unit relies on technology that has long been used for electronic fee collection, while the system for vehicles without this unit is also very practical (Balmer, 2005).

A similar strategy was applied in London in the early phase of introducing congestion charging. Given the high political risk involved in the scheme, Transport for London consciously opted to employ relatively simple technology in the early phase, thereby serving to lessen the overall likelihood of package failure. Hence, these two examples point to a strategy of using simple, proven and reliable technology, when politically risky policy packages as well as single measures are to be implemented. This is contrary to the German example, where the implementation process suffered from severe delays due to application of high-tech solutions chosen for establishing technological leadership for German companies.

4.11 Concluding reflections on transferability and generality

The strategies presented in this chapter are based mainly on the concrete experiences from the cases presented in Chapter 3. Even though these comprised a limited empirical material, we have been able to identify general features and more precise strategies to enhance the possibilities for successful policy formation and implementation. This may serve as advice for politicians, officials or other key actors engaged in transport policy development. Furthermore, since most of the strategies refer to common barriers to policy formation and implementation, irrespective of the specific transport issue at hand, we believe that they can be applied to other modes of transport too. Exactly how the strategies would be applied depend on the specific case and the situation at hand, including actors involved and, not least, the framework conditions. The strategies can be applied and transferred to other contexts to different degree, hence by copying, by using as a sort of standard, by combing different strategies or by using them as inspiration (Dolowitz and Marsh 2000).

It is difficult to judge whether the strategies proposed here are viable for most EU countries. Some strategies seem to be rather universal. For instance what we suggest in terms of the strategies *Combining sticks and carrots*, *Expanding the policy scope*, *Communicating benefits of policies clearly* and *Using good examples* appear in principle to be transferable to most national contexts. These strategies are all about enhancing acceptance in the policy formation phase. However, the public support for pursuing a specific policy objective (e.g. reducing GHG emissions) may still vary between different countries, as does the strength of various stakeholder groups. Differences in other framework conditions (including power structures, social norms, public attitudes, legislative and institutional frameworks, etc.) may also affect transferability of strategies between countries (Jones 1998; Schade 2003).

Some strategies are more dependent on specific legislative, organisational or institutional settings in countries of the EU. Here a wider investigation would be needed in order to identify relevant similarities and differences across the EU-countries. Further studies within this area will be carried out within deliverable 6 of the OPTIC-project.

5 Barrier management in the policy packaging process

5.1 Introduction

This report focuses on how to manage barriers in a successful policy packaging process. In this section we discuss how barrier management is related to the overall subject of OPTIC, namely to develop methodologies for the design and implementation of holistic policy packages in transport. The key issue is how the findings of this report might be integrated into the policy packaging process/framework. As outlined in Deliverable 1 of the OPTIC project (OPTIC, 2010), the stages in Figure 5.1 can be regarded as the core of a successful policy packaging process. It should be noted that there may well be a need for one or several iterative loops:

1. Identification of objectives and target setting
2. Inventory of measures. Selection of primary measure(s).
3. Assessment with regard to:
 - Effectiveness
 - Efficiency
 - Acceptance
 - Feasibility
4. If necessary, adjustment of package, e.g. by adding measure(s) or adjusting intensity of measures. Then new assessment in stage 3.
5. Implementation

Figure 5.1: Core stages in the policy packaging process according to the OPTIC framework

Stages 1-4 refer to policy formation while stage 5 is implementation of policies. These stages should be considered an indicative framework. As can be suspected, the analysis of barriers may not be treated separately from the rest of the policy packaging process. Managing barriers to acceptance and feasibility may for instance involve conflicts with effectiveness (target achievement) or economic efficiency. The strategy to manage barriers, or combination of strategies, that is suitable in each case is also greatly dependent on conditions external to the actors in the policy process.

5.2 The role of strategies to manage barriers in the policy packaging process

Strategies to manage barriers may be used both in the policy formation phase and in the implementation phase. In the policy formation phase they are often necessitated by acceptance barriers relating to political majorities, which in turn depend on lacking acceptance of stakeholders and/or the public. In the assessment (stage 3 above) of single policies or policy packages potential barriers need to be identified. This is a difficult task since no comprehensive procedures/criteria to detect barriers exist, and the accompanying uncertainty needs to be acknowledged. This holds for both present societal conditions and the future development of e.g. political majorities, scientific knowledge and technology. However, the typologies developed in Chapter 2 may be used for an initial identification of policies that have a high risk of not getting accepted (stage 2 in Figure 5.1). In particular redistributive policies (which entail redistribution of income by taxation) or entrepreneur policies (which entail spread advantages and focused disadvantages) are among such high-risk policies. If a proposed policy can be assumed to encounter substantial barriers, it may be considered whether one or a couple of the strategies outlined in Chapter 4 may be applied to manage the barrier. In some situations the strategies may be used to accomplish adjustment

of the policy package (stage 4 above) in a way that does not (significantly) conflict with the other criteria for a successful policy package (effectiveness, efficiency and feasibility). Another possible outcome is that barriers may be managed, but only at the expense of a relaxation of the effectiveness and/or the efficiency of the package. Whether these trade-offs are deemed satisfactory or not need to be discussed in each case. As empirical evidence from literature and the cases show, such outcomes do not appear to be rare. In sections 5.3 and 5.4 we discuss some potential conflicts between managing barriers and other criteria (mainly effectiveness and economic efficiency) in the policy formation phase. An interesting issue concerns what effects short-term strategies to manage barriers may have on the longer term development paths and the achievement of long-term targets (e.g. climate targets for 2050). This issue is related to Deliverable 3 and is discussed briefly in section 5.5. Yet another possible outcome of the barrier assessment may be that barriers are not possible to manage at all, perhaps due to external conditions which key actors may not influence sufficiently. In this case either a new primary measure needs to be selected or the objective has to be dropped. However, since conditions regarding e.g. scientific knowledge, technological options and political majorities change continuously, in this case the longer term strategy of preparing for a window of opportunity still remains (strategy 6 in Chapter 4).

Regarding the implementation a first assessment of projected barriers is carried out in the policy formation phase. It is worthwhile noting that this may occur several years before implementation actually starts. However, it is important to initiate projected necessary changes to legal frameworks or institutional structures at an early stage. Due to the fact that uncertainty increases rapidly when the time horizon is prolonged, it may be beneficial to analyse different scenarios.

5.3 Barriers to what target? – The trade-off between effectiveness and acceptance

The cases analysed in Chapter 3 indicate that conflicts between effectiveness (target achievement) and acceptance of policies are a frequent feature in practical policy making. Although the cases analysed in chapter 3 are chosen partly because they are considered successes, they are still not without conflicts. In the Stockholm package 'green cars' (mainly ethanol cars) were exempted from charges. The reason for this seems to have been a combination of a will to enhance acceptance among car drivers and a will to simultaneously stimulate sales of green cars. These exemptions reduced main target achievement, which was to reduce congestion. It was also proposed in the policy formation phase that charges, although lower, should be levied on an alternative road, Essingeleden, which was otherwise at risk of becoming even more congested when the scheme started. However, this was not considered politically feasible because of a perceived lack of public acceptance.

In this context it is important to ask this question: In relation to what target does a certain barrier, or success factor, exist? For instance, a target regarding greenhouse gas emissions that are confined to a certain sector (e.g. transport) and a certain geographical area (e.g. a city or a country) may not be consistent with the overall EU-target for all sectors. Furthermore, there may often be a discrepancy – possibly caused by the high inertia in the policy process – between on the one hand the current quantitative targets of countries and the EU, and on the other hand what recent scientific evidence indicate is necessary to keep global warming below 2 degrees.

Strong stakeholders in many cases oppose policies that are effective in reaching the more demanding overarching targets, while policies only reaching less ambitious targets are likely to face less fierce opposition. This means that the value of a "success factor" must be judged against the target used in that specific case. Factors leading to "success" in relation to less demanding targets may not necessarily be applicable when more demanding targets are to be met. The case of Aviation in ETS illustrates this. If the benchmark is taken as the previous state regarding aviation – no climate taxes at all – then it may be regarded as a success. If,

on the other hand the comparison is made to what road transport currently pays for its emissions, then it may scarcely be labelled a success, at least not in the short term. How this case might be judged from a long-term perspective is discussed in section 5.5.

5.4 Other conflicts between barrier management and other criteria

Strategies to manage barriers to acceptance may also conflict with economic efficiency and even in some cases feasibility. According to Wilson (1980), whether advantages and disadvantages of a policy (package) are spread or focused greatly affects the likelihood of acceptance. Most acceptable are policies which yield focused advantages but spread disadvantages, because those getting clear benefits will mobilise while those getting the insignificant disadvantages will not care. Thus, a strategy to increase acceptance may be to make advantages focused rather than spread or to make disadvantages spread rather than focused (or both). This strategy was used in the congestion charging cases in London and Stockholm, as well as in the heavy-vehicle fee in Switzerland, where 2/3 of revenues were used to finance two specified railway tunnels. This kind of 'earmarking' of revenues is, however, not optimal for economic efficiency, and many economists would prefer that revenues were channelled to the general public budget. Therefore the sometimes substantial benefits of getting acceptance for a specific policy need to be weighed against a somewhat reduced economic efficiency.

Although probably less important, barrier management may also conflict with (technical) feasibility. The technical solutions for congestion charging in Stockholm (and even more for London) were not the most advanced. This was probably a successful strategy since the available time for implementation was limited in Stockholm (it was likely that the political majority would shift in the next election). However, this technology choice also had some drawbacks. An argument put forward in the public debate in Stockholm was; Why should people driving inside the toll ring not pay anything? A more advanced GPS-based system that could continuously differentiate geographically and over time might have been considered fairer in this respect, and could thus have increased acceptance, in a case where there would be sufficient time available for a more time-consuming implementation.

5.5 Barrier management and the long term perspective

Policy packages do not only need to be assessed with regard to their effectiveness to reach short-term, intermediate targets. It is also crucial that they simultaneously serve to enable rather than obstruct development paths leading to achievement of long-term targets. This field was explored in Deliverable 3. A policy package therefore:

1. Need to enable, rather than obstruct, long term targets given present best knowledge.
2. But should also be sufficiently flexible/robust to cope with different external developments and new knowledge on necessary target levels.

There is therefore a need in the policy packaging process to check whether barrier management may compromise development paths leading to long-term target achievement.

Investing in new transport infrastructure lead to lock-ins, which may be positive or negative with respect to a certain target. The Swiss heavy vehicle fee package, which earmarked a large share of revenues to railway tunnels, may be regarded as leading to a positive lock-in situation with regard to e.g. mitigating climate change. The German case on the other hand, although possibly alleviating some congestion in the medium term, may lead to a largely negative lock-in with regard to long term targets, if the bulk of revenues are used to increase investments in new road capacity. In Stockholm, the revenue from congestion charging was initially intended to be used for improved public transport. However, the new government in Stockholm (which was opposed to congestion charging) changed this and decided that the revenue should instead be used for building roads. This was a means to please their constituency. These cases show that there is a risk of ending up in a detrimental path dependency caused by secondary measures applied to achieve acceptance of the primary

measure. An aspect adding to the complexity in the assessment of these cases is that it is rather difficult to know how a reference scenario without the policies considered would unfold. It might be that the roads in these cases would have been built anyway, albeit at a later time.

In some cases it may be argued that the introduction of a new pricing system (e.g. a congestion charging scheme) in itself represents a success in a long-term perspective, even if the short-term charges applied are modest, due to efforts to get the policy accepted at all. This is certainly true in many cases, since there may be a threshold effect associated with the introduction of such systems. However, in some cases the opposite might be claimed. Although the inclusion of aviation in the ETS means that aviation will pay more for emissions than before (when no charges whatsoever were levied), there seems to be a risk that aviation, maybe for decades, will be locked into a system in which it pays much less for similar emissions than road transport does. If the latter argumentation is advocated, yet another drawback is that sea transport will refer to aviation as a 'benchmark' and therefore another sector will get emissions pricing at a level far from what road transport is currently paying.

5.6 Revisiting the policy packaging framework

In this section we make some first remarks on how the findings of this report might be utilised in order to improve the policy packaging process/framework. This topic will be further elaborated on in Deliverable 6 of the OPTIC project.

In Chapter 4 we identified nine strategies that may be useful for managing barriers to the formation and implementation of policy measures/packages in transport. These strategies are obviously not exhaustive and specific conditions in each policy case need to be considered, as there is no blue-print on which strategies that are suitable. Nevertheless there is a need to consciously integrate 'strategy consideration' in the policy packaging framework developed within the OPTIC-project.

The typology from Chapter 2 may be used already in stage 2 (see Figure 5.1) of the policy packaging process in order to detect policies that are likely to confront substantial barriers. This might guide the selection of primary measure(s), but it must be acknowledged that when challenging targets are to be met, it may still be necessary to use measures which may confront significant barriers. After a more thorough assessment of a preliminary package in stage 3, it often turns out that some barriers exist/remain. This is when the strategies identified in Chapter 4 may be considered to manage these barriers. This might in turn result in adjustment of the policy package, for instance by adding a measure.

We notice here that conflicts between strategies to manage acceptance barriers and other criteria, e.g. effectiveness and efficiency, often occur, and that this needs to be handled explicitly in the policy process. Careful attention should be given to the target used in each case, and the relationship between that target level and the level required by overall societal objectives (e.g. limiting global warming to 2 degrees). What is a success factor with regard to a less demanding target may not be applicable to more demanding targets.

It is also important to keep an eye on the long-term and watch out for ways of barrier management that may lead to detrimental long-term developments. There are examples in the cases indicating such mechanisms. A successful policy package needs to be flexible or robust enough to be able to cope with rather different external developments or new knowledge concerning necessary target levels. Part of this is to check whether the policy measure(s) in question serve to enable, rather than obstruct, the achievement of long-term targets.

As exemplified by the cases analysed in Chapter 3, in real life the policy formation and/or implementation process may be very long. This has implications for the policy packaging framework. One is that potential barriers need to be identified early in the process, since e.g.

making changes to legislation or developing new technological solutions may take several years. The early identification of such barriers may serve to initiate for instance legal changes, but it may also serve to shift the focus to other policies that are not dependent on legal changes. Another implication is that conditions continuously change. This means that a policy package that at some point in time appears to have a slim chance of being accepted may well be accepted later on. Either there may be a permanent change, e.g. due to increased awareness of a societal problem, or there may appear a window of opportunity, e.g. due to a shift in political majority. In both cases, but of course more particularly in the latter, it is important to have decision support ready.

6 Concluding discussion

The EU, as well as the rest of the world, is facing great challenges in transforming the transport system in a sustainable direction. A key issue for current transport policy making is thus to identify policies that are effective in reaching targets, efficient, politically acceptable and practically feasible. It is gradually becoming apparent that in order to achieve this demanding task, single policy measures often need to be combined into packages where measures mutually reinforce each other. This is what the OPTIC project is about.

One of the main obstacles to the transformation of the transport sector in a sustainable direction is that even though there are plenty of potentially effective policy measures, many of these are rarely or never implemented in practice. The main aim of this work package has therefore been to explore barriers and success factors to formation and implementation of policy packages in transport, and – based on this – to identify strategies to overcome and manage barriers. Identifying relatively specific and elaborated strategies, theoretically informed and based in empirical examples, is the main scientific and practical contribution of this report.

Concretely, we focused our work around three main tasks. The first was to elaborate a typology that could serve as a framework for our analysis of barriers and success factors in empirical cases. This typology might in itself constitute a tool for policy makers to categorise and understand barriers and success factors related to the formation and implementation of policy packages in transport. The second task was to apply this typology to empirical cases from transport policy in order to get an in-depth insight into experiences from policy-making and thus also into the kinds of success factors, barriers and strategies that evolve in practice. This also constituted the main basis for our third task, namely, to identify more generally valid conclusions on strategies to manage barriers to formation and implementation of single policy measures and policy packages in transport.

One main outcome of this report is the identification and further development of a typology that helps to distinguish between different policies and to project those that may face difficult challenges in policy formation and implementation. For instance, it can be seen that policy measures with regulatory (dealing with legislation and sanctions to influence the activities of citizens and companies) or redistributive (which imply redistribution of income by taxation) content (Lowi, 1964, 1985) tend to be controversial (see also Chapter 2 in this deliverable). The same can be said for entrepreneurial policies (where advantages are spread and disadvantages focused) (Wilson, 1980). A general principle for policy formation might thus be to try to add more distributive and/or client policy features – which in essence means distributing advantages clearly – to policy measures (single or packages) with a fundamentally redistributive, regulatory and/or entrepreneur policy content.

Some policy objectives will thus be more difficult to achieve than others, and this is much due to them requiring more profound changes in mobility patterns and aims to change fundamental development trends in the transport system. Even though such policy objectives are challenging, they may nevertheless be necessary in order to achieve overall societal targets. A key example here is the aim for a modal shift which has been stressed as an important ambition in several EU and national policy documents including the latest White Paper on transport (EC, 2011; CEC, 2006; CEC, 2001). Our selection of case studies partly reflects such difficult policies – most evident perhaps in the cases of Urban Congestion Charging and Heavy Vehicle Fees. Our findings on barriers, success factors and strategies are thus relevant for rather challenging cases of policy formation and implementation.

A second main outcome from this report is the identification of barriers and success factors for policy formation and implementation, which was a result of the analysis of four empirical cases: Urban Congestion Charging (with examples from London, Stockholm and Manchester), National Heavy Vehicle Fees (with examples from Switzerland and Germany), Aviation

in the European Emissions Trading System (EU level), and the EU's First Railway package (with examples from the implementation process in Denmark and Sweden).

As illustrated in our analysis (Chapter 3), a range of barriers and success factors occur in these cases. The Urban Congestion Charging and National Heavy Vehicle Fee cases illustrate a broad variety of these. Being typical examples of policy packages with strong redistributive and entrepreneur policy elements, they both faced quite difficult challenges in terms of culture/public and stakeholder resistance. They involved political, institutional and in some cases also legal difficulties, depending on the specific example in question. Aviation in ETS showed some similarities with these two cases in terms of stakeholder barriers, mainly from the aviation sector, but did not involve any severe public resistance. The analysis of the implementation of EU's First Railway package in Denmark and Sweden, on the other hand, is a case of a constituent policy package being put into practice. The barriers that evolved there, were mainly about organisational/institutional aspects.

Our findings on barriers and success factors in the case studies served as the main empirical input to the third main task in this work package, namely the identification and development of more generally valid strategies to overcome and manage barriers in relation to policy formation and implementation. As stated in Chapter 2, a strategy is defined here as a conscious and deliberate action to enhance successful policy formation and implementation. A strategy, by definition, goes beyond doing things 'like we have always done' or just 'following established procedures' (Healey 2007:30, referring to Minzberg 1994/2000 and Bryson 2003).

The main strategies we identified are:

- Combining sticks and carrots
- Expanding the policy scope and developing flexibility in negotiations
- Trials – a way to create legitimacy and acceptance
- Communicating benefits clearly
- Using good examples
- Preparing for windows of opportunity
- Organisational responsibility and set-up
- Applying state funding to instigate municipal investments
- Selection of established or innovative technical solutions

These strategies are mainly based on empirical evidence from the four case studies analysed in this report, but are also supported in other literature. Hence, we consider them to be of general relevance for policy making in the transport field and regard them as potentially helpful in the policy making process. Some of the strategies are more clearly related to problems in the policy formation phase, whereas others are more clearly related to implementation barriers. Some strategies are valid for both policy formation and implementation. Evidently, the best strategies to apply depend on the policy situation and the specific conditions at hand.

As discussed in Chapter 4, it is uncertain to what extent the strategies proposed here are viable for most EU countries. What we suggest in terms of *Combining sticks and carrots*, *Expanding the policy scope*, *Communicating benefits clearly* and *Using good examples* are examples of strategies which should in principle be transferable to most national contexts. Stronger variation between countries can be expected for strategies that are dependent on specific legislative, organisational or institutional settings. The transferability of strategies will be further analysed in Deliverable 6 of the OPTIC project.

Some of the barriers that we identify and explore are related to more fundamental political, economical, cultural, organisational and institutional conditions, that relevant actors have limited influence upon. As concluded in this report the outcome of a policy making process is also highly dependent on the qualities of the people involved, and in particular the existence

of political will and leadership. In addition, it is important to note the power of unpredictable events – something that policy-makers and implementation agents have little influence over. Hence long-term commitment and being prepared when windows of opportunity appears, constitute a success factor, as does consistent work to increase the likelihood of such windows.

Nevertheless, a key conclusion is that conscious application of the strategies identified in this report may contribute significantly to successful formation and implementation of even controversial policies or policy packages.

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Annex 1: Inventory of success factors and barriers

Based in literature dealing with success factors and barriers for policy formation and implementation within the transport sector an inventory of such success factors and barriers has been established as part of D5. In the inventory, success factors and barriers are classified within different categories. In some cases it has not been easy to classify the individual success factors and barrier, and they could be classified within two categories. However, in the table no barrier is repeated within different categories.

Cultural/public and stakeholder success factors	Political success factors	Organisational/ Institutional success factors	Fiscal/financial success factors
<p>The public understand the problem that a policy measure is designed to solve (May 2005: 8).</p> <p>The public is convinced that the proposed policy measure will solve the problem (May 2005: 8).</p> <p>Public and private acceptability of policy exist (Banister 2002: 5-6)</p> <p>A project champion = charismatic individual that spearhead projects exists (Ieromonachou & Warren 2008: 114-115).</p> <p>Politicians are aware that the public will judge proposals initially based on their short run individual</p>	<p>A national policy framework on Spatial Development exists (Banister 2002: 5).</p> <p>Policy directions are consistent (Banister 2002: 5).</p> <p>The objectives of the transport strategy are clearly articulated at the outset (May 2005: 10).</p> <p>Policy-makers consider the full range of policy instruments (May 2005: 10).</p> <p>Decision-makers give full consideration to fairness principles in developing and justifying their</p>	<p>Power and responsibilities for transport is decentralised to the most appropriate level for implementation (Banister 2002: 5).</p> <p>Concerns over subsidiarity is not used to discourage EU involvement in regional and local transport policy (May 2005: 9).</p> <p>An appraisal methodology which is consistent across modes and policy instruments is applied to improve decision-making (May 2005: 10).</p> <p>The responsible authority possesses solid competences within the field (Sørensen 2008: 8).</p>	<p>The responsible authority is in a good economic conditions (Sørensen 2008: 8).</p> <p>Where governments decentralise decision-making to regional and local government, they ensure that appropriate levels of funding and know-how are also devolved, or that effective revenue raising powers are provided (May 2005: 9).</p> <p>Financial state contributions are available for municipal activities (Sørensen 2008: 8).</p>

<p>gains and losses (May 2005: 8).</p> <p>The solution is seen as a solution to an accepted problem (Ieromonachou & Warren 2008: 118).</p> <p>Citizens are capable to express themselves and behave in ways which politicians and civil servants respect (Sørensen 2008: 8).</p>	<p>strategies. (May 2005: 8).</p> <p>Enthusiastic politicians are in power and pay attention at decisive phases of the process (Sørensen 2008: 8).</p> <p>State action plans and state publications exist and function as pedagogic policy instruments towards municipalities (Sørensen 2008: 8).</p> <p>Politicians and transport managers avoid aspects of a strategy which allow the media or opponents to emotionalise an issue (May 2005: 8).</p> <p>Incremental implementation is applied (Ieromonachou & Warren 2008: 118).</p>	<p>The responsible authority is capable of using any opportunity to advance the issue (Sørensen 2008: 8).</p> <p>The responsible authority comprises dedicated individuals which are committed to the issue and are active and persistent (Sørensen 2008: 8).</p>	
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Table 1. Inventory of success factors in policy formation and implementation of transport policy.

Barriers						
Cultural/public and stakeholder barriers	Political barriers	Legal/regulatory barriers	Organisational/institutional barriers	Knowledge/information barriers	Fiscal/financial barriers	Technological barriers
<p>Lack of public acceptability (Banister 2002: 2)</p> <p>Public, political and media resistance to policies (May 2005: 2).</p> <p>Strong desire of urban residents to use their cars as of right (Banister 1998: 77).</p> <p>Increasing reluctance of people to use public transport and cycle/walk even for local trips (Banister 1998: 76).</p> <p>A scheme involves partners and actors who have very different</p>	<p>Lack of national policy framework (May 2005: 2).</p> <p>Technical and individualistic focus of policy interventions (Whitmarsh et al 2009: 074-975).</p> <p>Fragmented (piecemeal, sector-specific) characteristics of policy (Banister 1998: 77; Whitmarsh et al 2010: 975).</p> <p>Narrow (regime-dominated, non-participatory focus of policy development (Whitmarsh et al 2009: 975).</p> <p>Policy dominated</p>	<p>Unsupportive legal and regulatory frameworks (Banister 2002: 2; May 2005: 2).</p>	<p>Problems with not coordinated actions (Banister 2002: 2, May 2005: 2).</p> <p>Inefficient and counterproductive roles and procedures (May 2005: 2).</p> <p>Application of general planning and car parking standards which are inappropriate and unachievable in a town centre/high street context. (Banister 1998: 77).</p>	<p>Poor data quality and quantity (May 2005: 2).</p> <p>Analytic obstacles (May 2005: 2).</p> <p>Side effects hinder implementation (Banister 2002: 2).</p>	<p>Resource barrier (Banister 2002: 1).</p> <p>Weaknesses in the pricing and fiscal frameworks (May 2005: 2).</p> <p>Misguided financing and investments flows (May 2005: 2).</p> <p>Parking is a major use of urban land, yet it is not priced to reflect its value (Banister 1998: 77).</p> <p>Uncertainty over the funding of public transport and other green modes (Banister 1998: 77).</p>	<p>Engineering design and availability of technology limit progress (May 2005: 6).</p>

<p>expectations and conflicting motivations (Ieromonachou & Warren 2008: 116).</p> <p>Futility argument is applied: The planned reform should not be implemented, since it will have no effects (Andersson & Vedung 2007: 6).</p>	<p>by short-term targets and electoral cycles (Whitmarsh et al 2009: 975).</p> <p>Conflicts with other policies (Banister 2002: 2).</p> <p>Wavering political commitment (May 2005: 2).</p>					
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Table 2. Inventory of barriers in policy formation and implementation of transport policy.

Annex 2: Check list for interviews

- Introduce yourself and WP5 broadly
- Questions to the interviewee:
 - his/her background + how he/she has been involved in the case in question
 - In general, how would you describe the process for the policy package in question from start to end?
 - How did it all start? When? Where? For what reason? Key events, key actors etc
 - How did the process from formulation to implementation develop over time? (if relevant, use the different “stages” from policy formulation to implementation as a way to structure this and other questions)
 - Looking closer at barriers; what were the things/issues/events/actors etc that made the adoption and implementation more difficult? (Legal, institutional, financial or other resources, technical problems, acceptance....etc?) Why did they appear, what were the key content and context factors behind etc?
 - Looking closer at success factors: what were the things/issues/events/actors etc that made the adoption and implementation more easy or helped to overcome barriers? Why did they prove successful, what were the key content and context factors behind etc?
 - Was the combination of policies in a “package” in this case something that made the adoption and implementation more difficult or perhaps easier? (make sure to clarify if some things said here are valid for the whole implementation process (including formulation) or only for some specific stage of the process – if it is at all relevant to separate clearly between them in the case)
 - Did the ambition to overcome barriers have any effect on the design of the policy-package in question? (trade-offs to enable public acceptance, for instance)
 - What is the status, today, of the policy package in question? Are everyone more or less happy with it as it is or are there any current ambitions to change it in any way?
 - What are your general reflections on adoption and implementation of policies and policy packages, based upon this case + more in general? Lessons for the future?