

Swedish perceptions of Smart, Green and Integrated Transport

A study of Swedish actors' perceptions of
the first call for proposals in Horizon 2020



HORIZON 2020

Swedish perceptions of Smart, Green and Integrated Transport

October 2015

A study for Forum for Transport Innovation

Contact

Hjalmar Eriksson, Analyst

Phone number

+46 72 732 89 17

E-mail

hjalmar.eriksson@oxfordresearch.se

About Oxford Research

Knowledge for a better society

Oxford Research is a Nordic research company. We are documenting and developing knowledge through analyzes, evaluations and investigations, providing political and strategic stakeholders with a better basis for their decisions.

We combine scientific methods with developing creative ideas to present new knowledge for our clients. Our specialties are analyzes and evaluations within industrial and regional development, research and education as well as welfare and education policy.

Oxford Research was founded in 1995 and has companies in Denmark, Finland, Latvia, Norway and Sweden. Oxford Research is part of the Oxford Group and aim our efforts towards the Nordic and European market.

Oxford Research AB

Norrlandsgatan 11

103 93, Stockholm

Sweden

+46 8 24 07 00

office@oxfordresearch.se

www.oxfordresearch.se

Illustration © Europeiska Unionen

Contents

Executive Summary	1
1. Introduction	2
1.1 Structure of the report	3
1.2 Changes in Horizon 2020	3
1.2.1 New programme structure	3
1.2.2 More Public-Private Partnerships	3
1.2.3 Call texts	4
1.2.4 Regulatory framework and administration	4
1.3 Method	4
1.3.1 Participants	4
1.3.2 Design	4
1.3.3 Preparation of the report	5
2. Results	6
2.1 Perceptions of changes in Horizon 2020	6
2.1.1 Call texts	6
2.1.2 Two-stage application	7
2.1.3 Funding policy	9
2.1.4 Innovation and Networks Executive Agency – INEA	9
2.1.5 The role of industry – SMEs	9
2.2 Participation in the programme	10
2.2.1 Key considerations in decisions to participate	11
2.2.2 To build consortia	12
2.2.3 Competition for project funds	13
2.2.4 The Forum’s roadmaps	15
2.2.5 Help and support in the application process	16
3. Conclusion	18
3.1 Perceptions within different institutional spheres	18
3.1.1 Dividing lines between larger and smaller actors	18
3.1.2 The amendment to the funding rules have different effects in different spheres	18
3.1.3 Different ideas about the relationship between basic research and application	19
3.2 Perceptions within different modes of transport	19
3.2.1 Joint Technology Initiatives	19
3.2.2 Different modes of transport versus multi-modality	19
3.3 Measures	20
3.3.1 Advocacy	20
3.3.2 National coordination and strategy	20
3.3.3 Co-financing	20
3.3.4 Possible matching of partners	21
3.4 Discussion	21
3.4.1 Coordination and advocacy	21
3.4.2 Financial conditions of research institutes	22
3.4.3 Matching of partners	22
3.4.4 Development of bilateral programmes	22
4. Sources	23
4.1 Interviews	23
4.2 Written sources	23
4.3 Unpublished data	24

Executive Summary

This report presents Swedish actors' opinions and experiences of the EU framework program for research and innovation, Horizon 2020. More specifically, Oxford Research has investigated the opinions of transport research and innovation actors regarding the first call within the societal challenge *Smart, green and integrated transport*, in relation to opinions about the seventh framework program for research, FP7. The study was commissioned by The Swedish *Forum for Transport Innovation* during the fall of 2015. The purpose of the study was to supply The Forum with a knowledge base, in order to strengthen its ability to support Swedish actors within the transport sector, and to ensure continued high participation in the European framework programmes.

Mainly qualitative methodology has been used. The main source of data is 21 interviews with actors within the four different modes of transport (aviation, rail, road and waterborne). Actors from academia, industry as well as from government have been interviewed. The interviews have been contrasted with statistics on participation.

Two main differences between FP7 and Horizon 2020 were identified by the interviewees, namely: the introduction of the two step application process, and the phrasing of the calls, which was perceived as less prescriptive in general, but more specific as regards expected impacts. New rules regarding financing (up to 100% direct costs and 25% overhead are covered) were also mentioned, especially in relation to (difficult) financial conditions for research institutes. Another notable change concerns the allocation of funds between joint technology initiatives (JTI) and the programs within the societal challenges pillar.

The changes taking place as a result of the launch of Horizon 2020 have not affected the actors' willingness to take part in the program. A majority of the respondents state that the new two-step application process is more time-consuming than anticipated and in some aspects worse than the previous one step process. However, the framework program is still highly attractive since it provides the actors with valuable international networks as well as the possible to take part in large scale projects. However, the allocation of funds between JTI's and the Transport Challenge has guided the focus of many interviewees, towards JTI's within aviation and rail, at the expense of efforts to participate in the calls within the societal challenge.

Regarding measures to increase the participation of Swedish actors within the EU-framework programmes, most of the respondents requested a clear national advocacy strategy for the scope and the objectives of future calls. More advocacy work, as well as a more distinct national strategy, was proposed. A new co-financing model for the research institutes was requested as well.

This is a translation of the original report performed by a professional translator and verified by the original authors.

1. Introduction

In August 2015, Oxford Research received an assignment commissioned by The Forum for Transport Innovation, hereafter The Forum, to examine Swedish actors' perceptions of the European Commission's framework programme Horizon 2020 for financing projects and activities within research and innovation. More specifically, the assignment involved the first call within the societal challenge of *Smart, green and integrated transport*, hereafter the Transport Challenge. There are three calls within the programme: *Mobility for Growth*, *Green Vehicles* and *Small Business Innovation for Transport*. The last one is a part of a so-called *SME instrument* and has not been included in the study.

Swedish actors in the transport sector have been successful in previous European research framework programmes. This has contributed to The Forum's objectives concerning research and innovation, but also, in a long-term perspective, to growth both in Sweden and in Europe – Swedish actors are leading the development in many areas of the transport sector and contribute with world-leading knowledge and solutions. The purpose of this study is to contribute to The Forum's knowledge-base, act to secure the position of Swedish actors' in the transport sector and to promote the continued successful participation in the programmes.

This study presents a comprehensive picture of how Swedish actors have experienced and understood the first call of Horizon 2020, set in the context of how well they have succeeded in the call. The focus of the study is defined by the work programme *Smart, Green and Integrated Transport*. All transport modes are affected by the work programme and are within the scope of the study. This means that the views of the representatives of aviation, waterborne, railway and road sectors have been gathered. It also addresses system-wide issues such as logistics and intelligent transport. The view is further broadened as the study includes participants from all institutional spheres, academia, industry and government.

In all, the assignment consists of investigating issues within following eleven areas:

1. Ideas and thoughts on participation in Horizon in 2020.
2. Experiences of the two-stage process.
3. Effects of changes in call texts.
4. Changes in how to build consortia.
5. Impressions of competition in Horizon 2020 compared to other programmes.
6. If and how The Forum's roadmaps are used.
7. Experiences of help and support from promotion agents.
8. Conditions for small and medium-sized enterprises (SMEs).
9. Views about the use of the TRL scale.
10. Differences in perceptions between industry, academia and government.
11. Differences in perceptions between modes of transportation (aviation, waterborne, road and rail)

During the work, Oxford Research has added to this list: one question concerning changes in the funding rules and, in the final stages of the data collection, a question concerning the establishment of the new authority *INEA*, responsible for the administration of projects and applications in the transport and energy challenges in Horizon 2020.

The assignment was conducted by Oxford Research and supported by Clas Tegerstrand as an expert in EU framework programmes.

1.1 STRUCTURE OF THE REPORT

The main content of the report is laid out in two chapters. In the chapter on results directly below, we describe in the first section the respondents' views on differences compared to previous framework programmes. In the second section of the chapter, we focus on how respondents have reasoned regarding their organization's participation in Horizon 2020, based on the changes that have occurred between different programming periods. The final chapter contains a summary of how perceptions differ between different groups of respondents and suggestions on how The Forum can better promote Swedish actors' participation in Horizon 2020.

1.2 CHANGES IN HORIZON 2020¹

In the transition to the new programming period, the previous framework programme of competitiveness and innovation (CIP) was combined with the framework programme for research (FP7). Together, the two formed Horizon 2020, the new framework programme for research and innovation. Innovation has been added as an objective in Horizon 2020, which means that the framework programme should have a clearer link to Europe 2020, the EU's long-term strategy of growth. It is expressed in new types of projects with a focus on innovation and in increased systematics in the use of the partnership programme. Another innovation involving increased market-oriented activities is a special programme for SMEs, *SME instrument*.

1.2.1 New programme structure

In the FP7 programme structure, there were transport sector projects under the programme Cooperation sub-program Transport. The Horizon 2020 programme structure has changed so that it consists of the following three pillars:

- Excellent Science
- Industrial Leadership
- Societal Challenges

Transport issues have been placed in *Smart, green and integrated transport*, one of the seven challenges in the pillar *Societal Challenges*. Some issues related to transport can also be found in other challenges within the pillar. Transport issues are also found in the pillar *Industrial Leadership* which brings together partnership programs with emphasis on important sectors of the EU economy.

1.2.2 More Public-Private Partnerships

The partnership programmes are Joint Undertakings mostly in the form of Joint Technology Initiatives (JTIs). They are programmes in which industry has a significant influence over the themes. In FP7, there was one JTI within transport, Clean Sky, which gathered the aviation industry. In Horizon 2020, the JTIs are as follows:

- Clean Sky 2 (aviation)
- SESAR (air traffic control, not a Joint Technology Initiative but a Joint Undertaking)
- Newly established: Shift2Rail (rail)

¹ VINNOVA has published an overview comparing Horizon 2020 with FP7. See Chapter 3 in VINNOVA (2013).

- Negotiated: Vessels for the Future (waterborne)

Together they make up a significant share of the allocation of funds to the transport sector.

1.2.3 Call texts

The European Commission's ambition has been that the overall changes towards more challenge-driven and market-oriented activities should be reflected in the call texts. The calls in the challenge part shall focus on problems and not prescribe specific themes or technologies. Sought-after solutions are instead delineated through the initial problem descriptions and in the final specifications of expected impacts in society. Another novelty in the call texts is that the European Commission, on a case-to-case basis, has started using the TRL scale. It is a scale describing the maturity of technologies and the stage of the innovation process that the projects are to address.

1.2.4 Regulatory framework and administration

The main changes in the regulatory framework are as follows:

- The introduction of two-stage applications for certain calls
- Changes to funding rules
- New authority INEA manages applications and projects

A two-stage application means that applications for funding are submitted in two rounds. In the first round, the application is less comprehensive. Only applications that qualify will proceed to the second stage. In the second round, a full-scale application is sent in. The financing rules have been changed and are now simpler. In short, the same funding rules are now used for all participants, with individual exceptions. The compensation model has also been amended to cover direct costs completely, or up to 70 percent, and indirect costs to a lesser degree, only up to 25 percent. Finally, a new and independent authority INEA is given responsibility for administering applications and projects in the transport and energy challenges.

1.3 METHOD

The assignment has been conducted as an interview study with key players in research and innovation in the transport sector. The interviews were conducted as semi-structured in-depth interviews of 20-60 minutes either by phone or as face-to-face interviews during two weeks in September 2015.

1.3.1 Participants

A total of 21 individuals representing 20 different organisations were interviewed. The respondents represented all transport modes and institutional spheres. Moreover, actors active in the system-wide issues were also interviewed. The sample of respondents consists of three women and 18 men, which reflects male domination in the transport sector. Oxford Research would like to thank all respondents for their participation in the study.

1.3.2 Design

A mainly qualitative method has been used. The study has examined different actors' perceptions and experiences of Horizon 2020, which has made it appropriate to adapt supplementary questions and question order

according to the information the respondent in question has contributed with. This flexibility has been enabled through semi-structured interviews.

Furthermore, document studies have been carried out in order to provide quantitative data, which will help to put the results of in-depth interviews in a context. In addition to the work programme Smart, Green and Integrated Transport, the results from applications to similar national programmes (focusing on success rate), as well as the result for the Swedish participants from calls for proposals under FP7 Cooperation: Transport have been studied.

1.3.3 Preparation of the report

The overall results of interview and document studies have been compiled systematically in the report below. As it is a qualitative study, it focuses on reporting the reasoning behind different perceptions. However, we do clarify along the way how widespread the perceptions are among respondents. This way we can give the reader a clearer picture of various perceptions within the group of respondents as a whole.

2. Results

2.1 PERCEPTIONS OF CHANGES IN HORIZON 2020

Most respondents described the following as the most obvious changes compared to the FP7:

- Introduction of two-stage applications
- Nature of the call texts

The distribution of the budget between Joint Technology Initiatives (JTIs) and the Transport Challenge is also a significant difference for aviation and rail, and also for waterborne when Vessels for the Future will be launched.

2.1.1 Call texts

2.1.1.1 More general call texts

The majority of respondents have described the call texts in words like *broader, more open, more thematic* and *horizontal*. A couple of respondents with a long experience of the EU framework programme for research pointed out that over several programming periods, there has been an oscillation between, on one hand, more specific call texts, and, on the other hand, more open and challenge-focused call texts.

Another couple of respondents nuanced their arguments about wider call texts by pointing out that the initial descriptions under each topic are general, whereas the expected impacts are more specific than before. They indicated that this means that more players will recognize themselves and take the chance to participate with applications, but that there really are fewer project ideas that are able to meet the requirements.

Several respondents discussed the wider design of call texts in relation to the two-stage applications. The more open viewpoint to different subjects, and, at least partly, lower requirements in the first application stage, was perceived to have led to an even greater increase in applications than before. This has been accentuated for aviation and rail where there is a joint technology initiative with a relatively much greater share of the total funds than before.

Not everyone has recognized that the nature of the call texts would have changed. A couple of respondents have not seen any major differences compared to FP7. Among other things, one respondent said that it is the evaluation of the texts that has changed so that it has become more literal, see further on this topic below.

2.1.1.2 The distribution between research vs. testing and demonstration

A handful of respondents raised the issue of the distribution of funds to basic research versus more applied development activities. These perceptions were specific and differed between representatives of different transport modes and institutional spheres.

A couple of representatives of aviation and rail indicated that the limited budget for these modes of transport within the Transport Challenge has mainly been directed to the academy. There has been no room for projects that focus on medium levels on the TRL scale. Some expressed that the evaluation of applications has favoured consortia led by research institutes. In a context of joint technology initiatives with a larger share of the overall budget than in the past, this might mean that test and demonstration is decoupled from basic research, one of the respondents said.

In contrast to this, some representatives of the research sector thought that there are higher demands for clearer results in terms of finished products, or that the focus has shifted from research to application. They described this as a part of a longer trend in which the framework programmes increasingly focus on industry. One respondent linked the trend to the economic conditions for European industry since the financial crisis in 2008. Although several representatives of academia drew attention to this shift, it was not necessarily in a negative way.

2.1.1.3 Evaluation – more literal and with a focus on impact

A handful of the respondents commented on the evaluation of the applications. A couple of respondents confirmed that greater emphasis has been placed on the impact criterion, which is in line with the European Commission's ambition for Horizon 2020. In addition, the evaluation was described as problematic by some of the respondents. Especially skills and attitudes to call texts of experts evaluating applications were criticized. A couple of the respondents had the impression that experts were generalists rather than technical experts – to a greater extent than before. They speculated that this could be related to call texts being less specific resulting in more varied and diverse applications, meaning that the experts need broader knowledge to assess applications. Some speculated that the evaluators were not as well-oriented about the discussions that have led to the design of call texts. Thus, they have a more vague idea about the subject context and are not able to make balanced interpretations. In conclusion, the view was that this problem has resulted in evaluations being more literal when it comes to for example specific wordings in the call texts, while assessments of the technical content have been less accurate.

2.1.1.4 The TRL scale is a good tool

None of the respondents mentioned spontaneously that the European Commission has started using the TRL scale in some of the calls for proposal. A predominant perception was that this is a positive development. The TRL scale was described as a practical and accessible tool. Many of the respondents with a particular view on this use the TRL scale in their work. The introduction of descriptions in terms of TRL scale was considered to facilitate the analysis of calls for proposal and communication both internally and between project partners. A couple of dissenting opinions were presented by representatives of universities and research institutes who thought that the TRL scale is a way to push for more applied projects.

2.1.2 Two-stage application

2.1.2.1 Good in theory, worse in practice

There is a clear consensus among respondents that the two-stage application process is a good idea, but that shortcomings in the implementation mean that the benefits of a two-stage process have not been accomplished. The main purpose of introducing a two-stage application process is that the total workload for preparing applications is reduced. Less extensive applications in the first stage where most applications are discarded results in fewer actors having to put down the work needed for a full-scale application. Most respondents, however,

thought that this advantage has not been achieved and that the two-stage application process has instead led to further shortcomings.

2.1.2.2 First stage requires more than expected

A majority of respondents felt that although the comprehensiveness of the application required for the first stage is limited, the stage requires too much preparation. This view was clearly more widespread than the opposite. A few respondents however felt that the first stage is not particularly demanding.

Especially two weaknesses were brought up that cause an application in the first stage to become too extensive. Firstly, several respondents explained that changes from the first stage to the second stage are too strictly regulated. What is particularly problematic is that participation in the consortium cannot be changed. In order to build a consortium it is necessary to have a complete and shared picture of the content of the project, which means that the requirements are not much lower than in a full-scale application. Secondly, a couple of the respondents referred to the fact that an oversubscription in the first stage means that the application must be of very high quality to stand out in the crowd. More about this below.

2.1.2.3 Oversubscription and low success rate

In addition to the fact that the two-stage process has not led to a decreased workload, as was the aim, it has also contributed to oversubscription to the framework programme. Several respondents described that a combination of open call texts and a – seemingly – simpler first stage has led to a very large number of applications as more actors have recognized themselves in the call texts, and taken the chance to apply. As the call texts are not overly specific, the variation between the applications has been great and experts have been forced to ‘compare apples and oranges’, as one respondent put it. This may contribute to increased arbitrariness and to passing on too many applications to the second phase, preferring to give them the benefit of the doubt.

Several respondents have also noted that too many applications have passed the first phase. Thus, the overall workload in the second phase has not decreased as expected. When an application is moved on to phase two, the chance to have an application granted should be significantly higher than the success rate for applications in stage one. Respondents who brought up this problem thought that the European Commission has not reached high enough success rates in the second stage to justify a two-stage process.

2.1.2.4 Long lead times but little time to work on applications

Another problem with the two-stage process that was noted by several respondents was that lead times have become longer, and are actually too long, while the time to complete the application is rather short. Lead times have become longer as the application must now go through two phases. Long lead times are generally a problem as they contribute to a greater uncertainty and hamper the planning.

The impression that there is only a limited amount of time to complete an application applies for both the first and the second stage of the process. A couple of respondents linked the timing to the fact that the consortium must be in place for the first application phase. They argued that there is only a limited amount of time for such a comprehensive process. Several respondents expressed that the time between the decision for the first stage and the deadline for the second stage is too short. If an application passes stage one, there is immediately a great hurry to complete the full application. This means difficult choices about how much preparation is needed before the results in the first stage are available.

2.1.3 Funding policy

Roughly speaking, the respondents have described the new funding rules as mainly positive, with the exception that the change has meant worse conditions for research institutes.

2.1.3.1 Worse conditions for research institutes

The fact that the research institutes' conditions have deteriorated with the new regulations is explained by the fact that they have high overhead costs that are not covered to the same extent as before. The financing models generally applied by research institutes no longer cover the costs. This means that institutes have to allocate basic grants for co-financing, or limit their participation in the EU programmes. Universities do not have the same problem as the overhead costs for facilities and infrastructure do not burden projects in the same way. The notion that research institutes' conditions have deteriorated was brought up by both the representatives of institutes and other respondents. At the same time, a few respondents expressed that this is a budgeting issue for the institutes, and did not think that any action from national co-financiers was needed.

2.1.3.2 Industry benefits most from the change

For other participants, the changed funding rules were described either as positive or neutral. Several respondents stated that industry has benefited from the changes, most of all SMEs. Industry has greater flexibility to cover their overhead costs and instead contribute to projects with working time. The funding rules are particularly beneficial for SMEs who often have very low overhead costs and thus receive almost one hundred percent financing. One respondent also said that the symbolic value of funding direct costs up to 100 percent means that it is easier to communicate the opportunities within the program to companies and to get them to participate.

Respondents from both the government and universities described the change mainly in positive terms. In addition to the cost recovery being perceived as suitable, one respondent argued that the system has become simpler.

2.1.4 Innovation and Networks Executive Agency – INEA

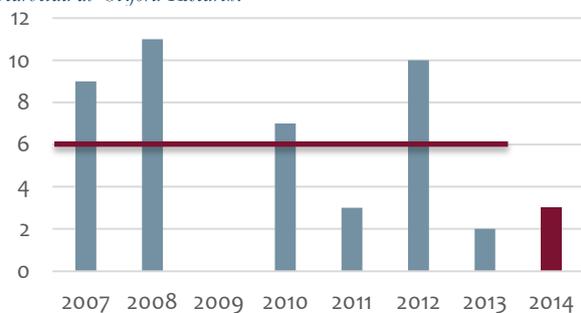
The material for perceptions of INEA is more limited than for other subjects of the study as issues concerning INEA came up in the final phase as the respondents themselves drew attention to the new authority. Opinions on INEA were mainly negative. Some respondents expressed criticism against the staff of INEA being less familiar with the programme context than previous administrators. This was considered to have had an influence on the evaluation of applications so that it has become more literal following the exact wordings in the call texts. This being the case, it is most likely explained by experts – who are independent regardless of the organization of the administrator – having received different instructions than before. Another couple of respondents felt that the administration has become even more zealous and detailed, which has led to an increased administrative burden. Despite the shortcomings, one respondent considered that an independent authority in theory is a good way of strengthening the independence of the evaluations.

2.1.5 The role of industry – SMEs

As described above, changes in the funding rules have meant improved conditions for participation in Horizon 2020 for private companies, especially for SMEs. However, most respondents who mentioned the effect of financing rules agree that they are of limited importance for industry participation in Horizon 2020.

2.1.5.1 What is the extent of participation?

Figure 1. Number of SMEs that have been granted participation in project within transport per year (call for proposals). Source: VINNOVA (2015c), bearbetad av Oxford Research.



Three SMEs are partners in successful applications to the Transport Challenge 2014. It is a low figure, but not lower than participation during four of the last six years. On average, six SMEs per year were granted participation in the programme for transport, *Cooperation - Transport*, within the FP7 2007-2013. See the figure for participation statistics.

The figure shows the number of SMEs granted participation in projects within transport in FP7 (2007-2013) and in Horizon 2020 (2014). Participation is reported on the basis of which year the call for proposals was made. However, all figures for FP7 are final results, while the results for 2014 are still preliminary since all contracts have not yet been established.

Results for 2014 are low, but not abnormally low, and represent too small a sample to be interpreted as a diminishing trend.

2.1.5.2 Conditions shift

Perceptions about the role of industry in Horizon 2020 and the need for industry actors to be partners in applications varied. One of the most important aspects in this context were the joint technology initiatives, in which industry has a central role. In aviation and rail where there are joint technology initiatives – and also in waterborne where a JTI is being prepared – some respondents felt that the position of industry in the framework programmes has strengthened with the JTIs’ dominance, in terms of both the proportion of funds and the influence over the content. At the same time, other respondents felt that there is no major difference between Horizon 2020 and the FP7 regarding the role of industry. Regarding SMEs, the current perception is that their possibility to participate still depends on whether they are invited by bigger partners to gain access to established networks of cooperation.

2.1.5.3 Joint technology initiatives – an obstacle for SMEs?

Several respondents described the JTIs as a significant structural change compared to the previous programming period. It has given industry as a whole a greater role in Horizon 2020. Some respondents, even from larger companies, noted, however, that the enhanced role applies to larger companies. The opportunities of small and medium-sized firms have rather deteriorated as they are wholly dependent on the large players to take part in the JTIs. The possibilities are also limited within the Transport Challenge as applied topics to a greater extent are subsumed under the technology initiatives. One respondent explicitly said that (s)he has not noticed the kind of focus on SMEs as the European Commission might have hoped for.

2.2 PARTICIPATION IN THE PROGRAMME

The respondents expressed a clear consensus that the changes in Horizon 2020 are not decisive for their decision to participate or not to participate. The only significant change that was singled out was the allocation of budgetary resources between the Transport Challenge and Joint Technology Initiatives (JTIs). For the established players this means that the Transport Challenge will diminish in importance.

2.2.1 Key considerations in decisions to participate

2.2.1.1 Details in the programme set-up do not affect the decision to participate

The respondents displayed a wide consensus regarding the trade-offs that are decisive for decisions to participate in the EU's framework programmes for research. This is exemplified by one respondent who expressed it was “natural to participate in a project when the opportunity arises”. The changes that have occurred in the programme set-up were described as details of no major significance, apart from the consequences of the funding rules for research institutes. As mentioned above, the lower compensation levels for overhead costs might mean that research institutes choose not to participate.

It should be noted that large established players dominate among the respondents. For them, participation in cooperation projects within research and development is an integral part of the organisation's activities. The representatives of SMEs were of a different opinion, see the chapter about conditions for SMEs below.

2.2.1.2 Relevance and consortium composition is essential

The following two factors were essential in responses:

- Compliance of calls with internal processes and strategies
- Composition of the consortium

Almost all respondents expressed that the content of calls was crucial in that if it is relevant in relation to ongoing activities and plans, their intention would be to participate in the process. A further condition for participation was, however, that the intended consortium would consist of competent partners. Most respondents said that they never or only in exceptional cases consider the role as coordinator. Instead, several respondents said that they tend to be asked to participate in applications. This is probably a result of the selection of established players as respondents for the study. If participation requires little effort, it is easier to decide to join a consortium – provided that the topic is considered relevant.

2.2.1.3 Joint Technology Initiatives (JTIs) dominate

The allocation of budget funds – rather than regulatory changes – was a critical factor in the decision to participate in the Transport Challenge. This was mentioned by several of the respondents in the modes of transport with JTIs. This applies to air and rail, but also waterborne where a JTI is being developed.

According to many respondents, the share of the budget allocated to JTIs is so dominant that they have chosen not to put too much effort in trying to get involved in projects in the Transport Challenge. The limited budget available for these transport modes within the Transport Challenge – combined with the high number of applicants – has meant that it is not advantageous to try. The effort was considered too great in relation to the outcome.

2.2.1.4 Prerequisites for SMEs

It was not as obvious for the respondents representing SMEs to participate in the EU framework programme for research. For them, being able to participate as a partner with limited responsibility for the application

process was almost a prerequisite for participation. The respondents also expressed different views on possible future participation.

A couple of the respondents had a positive view on the matter. They emphasized that international co-operation projects within research and innovation give added value in terms of visibility, network-building and acknowledgment. According to their view, the supply of additional funding was secondary. The other two respondents were more sceptical about future participation. They pointed out that the application process means a great deal of effort, long lead times as well as uncertainty and arbitrariness in the assessment process. These are factors that make their future participation doubtful.

2.2.2 To build consortia

2.2.2.1 Established networks are the foundation for consortia

All respondents rely on established networks when looking for consortia to participate in and locating additional partners. The respondents described different ways in which this may come about. Several respondents, including SMEs, have been approached and asked to participate in consortia. In other cases, they have sought more actively, either starting with the call texts, trying to match the needs, or from the perspective of making an inventory of the consortia that are under build-up in their networks.

It is hardly surprising that actors included in the sample for the study have developed networks for project collaboration of this type. It is worth noting, like some of the respondents did, that stable and established networks of collaboration partners is a value in itself. Major players with significant research and innovation activities are thereby not seeking new partners for only a single project, but see contacts with new partners as a long-term investment.

2.2.2.2 A slight tendency towards more new partners

Respondents were in agreement that the changes in Horizon 2020 have not had a significant impact on how consortia are formed. The changes have not been of such a magnitude that they call for different routines. However, respondents' thoughts about the mixture of previously known or new partners point towards a tendency to have more new partners in consortia.

Several respondents pointed out that the increased number of applications has been matched by a greater number of consortia with more new players. This can also affect the composition of partners in the consortia in which the respondents' organizations participate. A couple of respondents stated that Horizon 2020 calls for bigger consortia as there are increased expectations to cover the whole innovation process. Supposedly, this has resulted in more new partners being involved in the consortia.

2.2.2.3 Most avoid the role of coordinator

With a few exceptions, the respondents indicated that they generally avoid taking the role of coordinator. This has remained unchanged since FP7. One respondent argued that the new rules for how administrative tasks are compensated and budgeted make it easier to assume the role of coordinator. During FP7, a pre-determined, and too low, percentage of the budget was allocated for administration. Currently, there is no such pre-determined percentage and administrative costs are budgeted as other items according to their actual scope. However, one respondent claimed that this budgeting procedure was the practice already under FP7, and that the conditions have thus not changed significantly.

A handful of respondents stated that they generally avoid taking the role of coordinator. Another handful said that they only took the coordinator role after careful consideration concerning how important their competence was for the project and how important the project outputs were for their organisation. A general view was that the benefits did not offset the additional costs of acting as coordinator. Both research institution and government representatives explained that the coordinator position in itself did not merit any specific credentials or contribute to additional value creation.

2.2.3 Competition for project funds

2.2.3.1 Lack of comparable programmes

Many respondents felt that there was a lack of directly comparable programmes. Generally, the respondents considered the Transport Challenge together with the JTIs in this assessment. Horizon 2020 was said to be unique by the combination of themes discussed and the following characteristics:

- Programme and project scope
- Size of consortia
- International cooperation and visibility

The programmes are larger and projects more extensive than what is offered in national programmes. This, together with the requirement of international cooperation, means that consortia are larger than in national programmes. They also consist of international players, thus making it easier for the participants to build international networks. The international dimension also contributes to visibility on the international market.

There are no other programmes with the same combination of qualities. In that respect, Horizon 2020 occupies its own, essential niche when it comes to funding opportunities for research and development projects. It is worth noticing that a few respondents highlighted bilateral cooperation, especially with Germany, as the best alternative to meet these needs.

2.2.3.2 Most comparable are programmes from VINNOVA

VINNOVA, the Swedish innovation agency, was the financier that the respondents most often mentioned as an alternative to Horizon 2020. VINNOVA provides programmes of similar themes in the Transport Challenge. Other national stakeholders mentioned by several respondents were the Energy Agency (Energimyndigheten) and the Swedish Transport Administration (Trafikverket). If The Swedish Transport Administration is to finance research and innovation, relevance to their operations is required. The Transport Administration is therefore not a financier of open calls like other agencies and research councils.

Specific VINNOVA programmes that were highlighted as most comparable varied between different modes of transport. Some respondents mentioned the cooperation programme Strategic Vehicle Research and Innovation Initiative (FFI). The respondents in the aviation sector mentioned VINNOVA demonstration programmes, such as GF Demo and SWE DEMO in the Strategic Innovation Programme INNOVAIR, as alternative sources of project financing.

2.2.3.3 Competition is perceived to be similar, but is an obstacle for some

Many respondents felt that it is not relevant to compare competition for project funds between Horizon 2020 and national programmes, because they are not interchangeable. Most of them felt, in addition, that competition is similar. Application rates for the national programmes available in the transport sector are also high. Some respondents assessed that competition is slightly lower nationally compared to in Horizon 2020. However, this applied particularly to strategic innovation programmes that do not necessarily offer open calls, and are governed by a partnership of agencies and established companies.

A few respondents indicated that the strong competition in Horizon 2020 is a factor that they take into consideration. At the same time, individual respondents expressed an opposite view. They considered the special characteristics of international co-operation projects as a decisive factor. In relation to the increasing dominance of the JTIs, it is also important to note that several respondents indicated that they focus on technology initiatives rather than the Transport Challenge for the reasons described above.

2.2.3.4 Comparison of success rates

The first overall results for applications to Horizon 2020 were published in 2015². They showed that the overall success rate, i.e. the proportion of project applications that have been approved, had fallen to 14 percent compared to an overall success rate of 20 percent for FP7. Swedish participants had substantial success within transport in FP7. During the second half of the previous programming period, Sweden accounted for around 4.5 percent of those participating in the call and received about 5 percent of budget resources within the programme *Cooperation – Transport*.³ For the 2014 call for applications in the transportation challenge, the figures were 3.6 percent and 4.3 percent, respectively.

The opportunities of Swedish actors in the transport sector to receive funding for research and innovation projects have been slightly better in national programmes, measured in terms of success rates, see Figure 2. We have compared the success rates for Swedish participants in the Transport Challenge in 2014 with the applications within transport in VINNOVA's programmes *Testbäddar för miljöteknik* (2012-2014) and *Innovationer för ett hållbart samhälle* (2013-2014). The applications to the Transport Challenge are grouped in three categories. The first category is the result of applications to the second stage in the two-stage process within the call *Mobility for Growth*. The second category is the result of applications to the first stage of the one-stage process within the call *Mobility for Growth*. The third category is the result of applications to the first stage of the one-stage process within the call *Green Vehicles*.

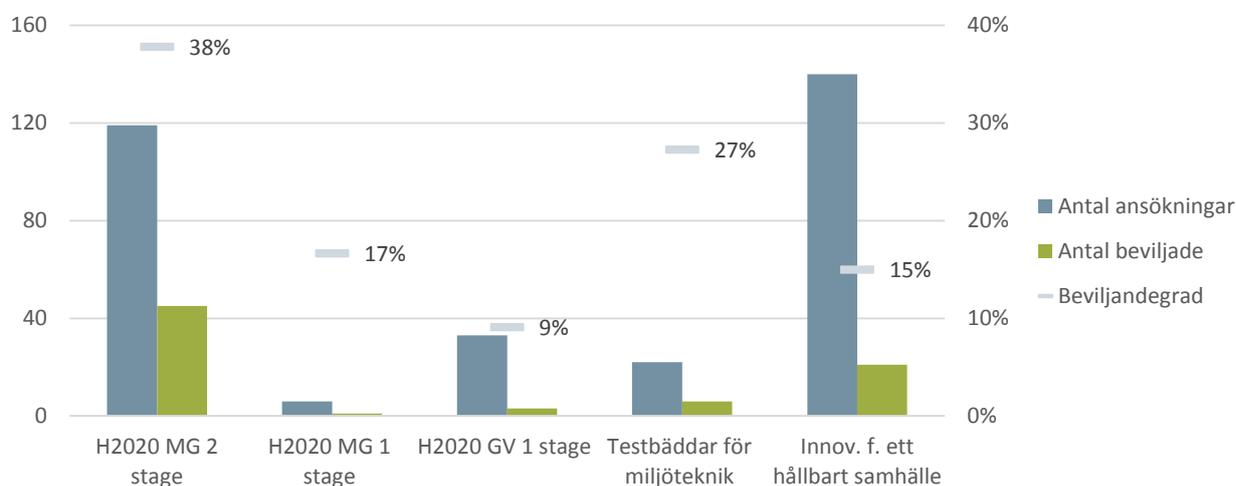
The success rates are slightly higher in the Swedish programmes compared to Swedish one-stage applications to the Transport Challenge. However, the difference is not substantial. The success rate of *Innovations for a sustainable society* is almost as low as the overall success rate in Horizon 2020. However, it is important to note that success rates are not a direct measure of competition. Applications to Swedish programmes are not as demanding and are not necessarily of an equally high level of quality. The overall success rates of VINNOVA as a whole are also significantly higher than for Horizon 2020, 35 per cent in 2014.⁴

² EU KOM (2015).

³ VINNOVA, 2015a, Figure 16, p.24 and p.72

⁴ VINNOVA (2015b)

Figur 2. Beviljandegrader i utlysningarna inom transportutmaningen (2014) i jämförelse med VINNOVA-program med inriktning mot transporter (2013-2014). Källa: VINNOVA (2015c), bearbetad av Oxford Research.



The success rate for the second stage applications in the Transport Challenge is almost 40 percent. This is higher than the views expressed by many of the respondents. Only the coordinator's identity is disclosed for applications in the first stage of the two-stage processes, which means that success rates for applications in the first stage of the two-stage processes cannot be used for the above type of comparison.

2.2.4 The Forum's roadmaps

2.2.4.1 Respondents are generally not familiar with the roadmaps

Just over half of the respondents indicated that they had some level of insight into The Forum's roadmaps. Not everyone knew about The Forum. Another group of respondents were not aware of the roadmaps or were only aware of their existence.

Some respondents with a better insight discussed actors in the transport sector and their interest for and knowledge about the roadmaps. They argued that there are insufficient incentives to take an interest in the roadmaps. The interest in the roadmaps has been low as there is no funding linked neither to establishing the roadmaps nor to financing the developments that are mapped out.

2.2.4.2 The relevance of roadmaps

Most respondents who had insight into the roadmaps indicated that they are too general to be relevant as a basis for project development. Several respondents said that roadmaps need to be more concrete about how the planned developments is to be achieved. Somewhat contradictory, a few respondents expressed that the roadmaps did not contain sufficiently comprehensive and forward-looking analysis. This can, perhaps, be explained by the fact that different roadmaps are of varying character and quality, a view expressed by a few of the respondents.

Some respondents stated that there are similarities between their applications and the roadmaps. In isolated cases, this was explained by the fact that the corresponding actor had influenced the direction of the roadmap

when it was produced. None of the respondents had, however, used the roadmaps to identify or develop project ideas; the correspondence is rather an effect of their interests coinciding with the focus of the roadmap in concern.

According to some respondents, the way the roadmaps are implemented needs to be clarified in order to understand their relevance in the transport sector. In addition, the use of the roadmaps for advocacy is unclear. What is the status of the roadmaps amongst the authorities that finance research and innovation? What is the role of the roadmaps in trying to influence government ministries and the EU? A couple of respondents believe that The Forum and the roadmaps have an important role to play in advocating important issues within the transport sector.

2.2.4.3 Relation to EU strategies

An equal number of respondents who stated that there is a connection between their project ideas and the roadmaps referred instead to European roadmaps and technology platforms as a relevant basis for developing project ideas. The European resources were thought to have greater relevance as they deal with developments at a European and international level. In comparison, roadmaps in Sweden are influenced by their national context.

These perceptions can also be related to a different perspective on the roadmaps and their function in relation to the EU instruments. A few respondents felt that the role of the roadmaps is to serve as a comprehensive basis that is to be used to influence the design of work programmes and calls for proposals.

2.2.5 Help and support in the application process

To provide a context for potential measures for The Forum to take, we have asked what kind of help or assistance the respondents have received. In general, those who have participated in the study have a very high knowledge of the EU framework programmes and are skilled in project development and writing applications, which means that the needs within the group of respondents are limited.

2.2.5.1 Expert consultants are hired in certain cases

One in three respondents had participated in applications where the consortium had hired expert consultants. That is a relatively high proportion, given that the organisations included in the sample for the study have staff with very high skills in writing applications at their disposal. However, consulting is often used on a case by case basis. Only a few respondents described it as a consistent approach. Experiences of enlisting consultants vary. Some of the respondents were dissatisfied with the consultants' performance, while others argued that the consultants give a much needed contribution in making particularly important applications better.

2.2.5.2 VINNOVA's information activities are appreciated

When it comes to assistance and support from the authorities, the respondents mentioned primarily VINNOVA. VINNOVA was described as an information source for the respondents. According to the descriptions, the contribution of VINNOVA covered both general information sessions and specific information through direct contacts. Both types of information dissemination were seen as valuable. General information meetings were described as a useful way to give inexperienced personnel information on the topic. More direct contacts were considered valuable to gain an insight into the discussions on the EU level.

The respondents did not request any special additional support from authorities in relation to Horizon 2020. A handful of them explained that they internally have the skills needed to write competitive applications, and therefore there is no need for additional support.

2.2.5.3 Major players do not use planning grants

Previously, VINNOVA has offered a planning grant for applications to the research framework programme, and other authorities still offer that, but within areas other than transport. A handful of respondents mentioned the possibility of offering planning grants. However, most of the respondents stated that the grant is not relevant to them. Established actors have the resources and procedures in place to finalize their applications. However, a couple of the smaller actors did mention the planning grant as a useful support.

3. Conclusion

3.1 PERCEPTIONS WITHIN DIFFERENT INSTITUTIONAL SPHERES

Perceptions among respondents from different institutional spheres, academia, industry and government, are more similar than different. Rather, there is a broad consensus about the majority of questions, and on some additional issues opinions differ as much within as between different spheres. Even in cases when the respondents expressed that there are differences between actors in different institutional spheres, this has not been confirmed by the investigations in this study. One example was the perception that academia is more prone to develop project ideas to suit specific calls instead of actually looking at the existing needs and expertise. However, some dividing lines can be identified between different groups.

3.1.1 Dividing lines between larger and smaller actors

The study indicates that the dividing lines are between bigger and more dominant actors and smaller actors rather than between different institutional spheres. For example, the perceptions and preconditions of the largest companies as opposed to SMEs that were interviewed differ significantly.

Large and established actors participate in international cooperation projects as a natural part of their operations. It is the same for the key players in all sectors. The decisive trade-offs they make and the main added values they see are also similar. In contrast, participation in a large international project is naturally a more unusual activity for smaller players, and particularly for SMEs.

SMEs do not generally have sufficient resources to participate in an application or a project without the support of one or more major partners. The respondents described this by saying that bigger players “can take smaller ones aboard” in their projects. Several more established players – companies, research intuitions and government agencies – also expressed an interest in working with SMEs in their projects.

The need as a smaller player to be invited and get help from a larger player is accentuated for the modes of transport where a JTI makes up most of the available budget. The opportunities in the Transport Challenge are so limited in these areas and the major players have such a strong position in the programme structure that it is almost impossible for a small actor to try to participate without the support of an informed partner.

3.1.2 The amendment to the funding rules have different effects in different spheres

A dividing line that runs between the different actors is not so much about their opinions as to the conditions for participation. The new financing rules with higher coverage of direct costs but lower coverage of indirect costs has meant that the conditions for research institutes have deteriorated, while for industry – and in particular for SMEs – the conditions have improved. This change has not, however, affected the universities in the same way, so it is not a challenge for the entire institutional sphere.

Opinions on this change did not, however, differ significantly between the institutional spheres, although it was primarily research institutes that brought up the issue. Most respondents who have noticed the change were also aware of the implications for the research institutes, and found that to be a problem.

3.1.3 Different ideas about the relationship between basic research and application

There is some disagreement between the industry and the research sector in relation to the programme's focus on more basic research or more industry-related applications. The general focus of Horizon 2020 on societal challenges and demands on clear impacts can be described as more market-oriented and thus more industry-oriented. Several respondents from the research sector also claim that the significant allocation of funds for technology initiatives in aviation and railway, and in waterborne in the future, shows that the programme is more focused on application than basic research.

While researchers have interpreted the high demands on societal impact as an expression of greater emphasis on industry, respondents representing industry have commented on an increased focus on basic research in the assessment of applications to the Transport Challenge. This would then be explained by the industry already receiving its share of the budget in the form of JTIs.

3.2 PERCEPTIONS WITHIN DIFFERENT MODES OF TRANSPORT

Just as between the different institutional spheres, the similarities are greater than differences in the answers from representatives of various modes of transport. The biggest differences relate to the programme structure with JTIs in aviation and railway – and soon in waterborne – while the road sector is lacking a corresponding initiative. Rather, there is a common thread of criticism when it comes to excessive focus on multi-modality.

3.2.1 Joint Technology Initiatives

In railway, there has been a similar consolidation of development activities on the international arena as previously seen in aviation. One respondent explained that research and development within aviation became internationalized already a long time ago. The railway sector has now managed to come together in the same way. For the waterborne mode, the main context has traditionally been the national, according to a few respondents. From that perspective, it is lagging behind in terms of international coordination. However, a Joint Technology Initiative (JTI) is being prepared also for the waterborne sector.

Unlike other modes of transport, there is no JTI for the road sector, and the respondents did not address this aspect of the framework programme. However, it may be a relevant aspect to consider as a few respondents representing the road sector felt that there was insufficient funding of high TRL levels, being that test and demonstration activities require substantial investments. This statement is in contrast with the views of respondents from other modes of transport.

3.2.2 Different modes of transport versus multi-modality

A few respondents, but not from the same sector or from the same mode of transport, made a point on how different modes of transport are treated in the programme. They expressed a similar view on the direction of the framework programme gradually shifting from individual modes of transport towards multi-modality and inter-modality. One respondent linked this to more open and challenge-oriented call texts, and described it as an over-reliance on the impact of innovations in these areas. At the same time, one respondent engaged in the

development of system solutions thought that the programme and the project format are designed for traditional product development – launching products in new series at regular intervals. System solutions are developed more continuously, according to one respondent, and are not as well suited for the project formats provided in Horizon 2020.

3.3 MEASURES

In general, the respondents claimed they have the resources and skills needed to participate in Horizon 2020 and did not call for special assistance or support measures. The only exception was the representatives of research institutes who requested a decision on a national co-financing scheme. Otherwise, the wishes that were expressed concerned a concentration of efforts for advocacy work, nationally and towards the European Commission.

3.3.1 Advocacy

A large proportion of the respondents identified advocacy work towards the European Commission, in order to influence call texts, as a key factor for increased Swedish participation in Horizon 2020, as regards the transport sector. It was by far the most common action requested by the respondents. Several stressed that The Forum could play a particularly important role in such advocacy work. One person stated that there should be staff working, in principle only, with advocacy towards the European Commission. The ongoing advocacy work would focus on calls for applications to be designed in such a way that they benefit the Swedish participants. For advocacy and lobbying to have the desired effect, enhanced national coordination and identification of strategies are needed, see the next section.

3.3.2 National coordination and strategy

Many respondents linked a need for further national coordination and formulation of national strategies to the request for advocacy work on the EU level. For advocacy to have an impact, the respondents felt that it is necessary to have a unified agenda against the Commission. This requires more distinct and concrete work in The Forum to define relevant developments.

In order for The Forum to act as a focal point for the transport sector, it is necessary to clarify its mandate and support. Several respondents requested that relevant authorities and ministries take interest in and endorse for example The Forum's roadmaps. The Forum's relevance would be more evident if the roadmaps had an influence on the formulation of government bills and authority control, and if funds were made available for financing the implementation of roadmaps.

3.3.3 Co-financing

In several sections in the report, we have mentioned the amendments to the funding rules and their relation to research institutes' ability to participate in Horizon 2020. In line with these discussions, the respondents from the research sector have requested a national scheme for co-financing EU projects. The current situation is less favourable for institutes. In addition, some of the respondents stated that the procedures and policies of national agencies offering co-funding are not clearly formulated in relation to the new funding rules. One respondent mentioned the model used in Norway as a possible way of organizing co-financing.

3.3.4 Possible matching of partners

The only example of hands-on help and support in the process of producing applications was to contribute to finding suitable partners for ongoing project preparation. This need was notably linked to SMEs, both when it comes to the opportunity for larger players to find specialized partners among smaller companies, and the opportunity for SMEs themselves to identify ways of contributing and collaborating with a larger player. This idea of The Forum, or another public body, contributing to the development of project consortia was mentioned by a handful of respondents.

3.4 DISCUSSION

A general question forming the basis for this study was whether former participants in FP7 had adapted to the new conditions in Horizon 2020. Oxford Research's view is that, generally, respondents possess initiated knowledge about how Horizon 2020 is structured and what this means for Swedish actors. Possibly, there is some confusion about how experts evaluate applications, as regards the composition of consortia and how they relate to the specific wording in the call texts. However, we cannot rule out that this is a result of terms for participating and respondents' expectations not being entirely in line. Our overall assessment is that the participants in the study have a good understanding of Horizon 2020 and that the changes that have taken place are of limited significance.

The seemingly lower participation in the Transport Challenge compared to the corresponding programme, *Cooperation-Transport*, in FP7, is potentially worrisome⁵. The fact that only a few Swedish actors participate as coordinators is also problematic. Oxford Research believes, however, that it is necessary to make an overall assessment of Swedish actors' involvement both in the Transport Challenge and in the JTI's in the transport sector. Several of the leading Swedish actors have indicated that they have focused on participating as leaders or associate members in the JTI's. The result of a comprehensive assessment, in terms of budget allocation to Swedish actors, could be that Sweden's position in the transport sector in Europe has strengthened.

As a final comment, it can be pointed out that the transport sector is traditionally a male-dominated sector, which is reflected in the sample of interviewees. To apply a gender perspective to the study, it could be supplemented with an analysis of themes and stakeholders taking as a starting point existing knowledge on gender equality in relation to travel patterns and transport policy interests.

Below are some additional reflections based on the draft measures presented in the preceding section.

3.4.1 Coordination and advocacy

According to Oxford Research, the request that The Forum to a greater extent should act as a unifying force for the transport sector is fundamentally positive. An organisation with The Forum's function was sought-after, but at the same time respondents felt that decision-makers did not give enough recognition to The Forum. A greater impact in decision-making should also lead to a greater influence over the allocation of resources, and thus better opportunities to legitimize its activities for the participants of The Forum. How coordination, strategies and advocacy should be designed are still, however, open questions.

⁵ Share of participation is presented in paragraph 2.2.3.4

3.4.2 Financial conditions of research institutes

When it comes to the institutes' financial capacity to participate in Horizon 2020, Oxford Research believes that the matter should be investigated further. We have not clarified in detail in what way and to what extent research institutes face financial difficulties in relation to the existing co-financing schemes. If it is a budgeting issue internally for the institutes, there should be viable schemes among Swedish institutes, or in the neighbouring countries. It may also be relevant to explore alternative national co-financing schemes, like the Norwegian scheme that was advocated by one interviewee. Regardless, the question is urgent in order to ensure the institutes' participation in the framework programmes. The question of finding co-financing schemes for research institutes is not, however, specific to the transport sector.

3.4.3 Matching of partners

Oxford Research does not have enough information to decide whether it is relevant for The Forum to function as an intermediary that brings potential project partners in the transport sector in contact with each other. However, this seems to be one of the most direct and concrete activities that may contribute to increased participation of Swedish actors in the Transport Challenge. This applies particularly to SMEs, which is the group of actors who find it most difficult to independently gain access to the networks where project consortia are formed. We note that there are several platforms that can be used as a basis to reach out to relevant SMEs. For example, this includes companies that have participated in the SME instrument as well as in Fast Track to Innovation within the transport sector, but also transport sector SMEs that have been successful in VINNOVA programmes. In such an effort, cooperation should also be sought with the national support office for SMEs seeking to participate in Horizon 2020, EUSMESUPPORT2020, and with relevant clusters like *Järnvägsklustret*⁶ (rail cluster), *Aerospace Cluster Sweden*⁷ or *Tunga fordon*⁸ (heavy vehicles cluster).

3.4.4 Development of bilateral programmes

Finally, if The Forum wants to contribute to developing alternatives to Horizon 2020, the study indicates that bilateral programmes in the transport sector could be a viable strategy. The only truly comparable alternatives to Horizon 2020 brought up by the respondents were international cooperation programmes with strategically important countries. Bilateral cooperation with Germany was mentioned in particular. Advocacy for such bilateral programmes could be a component in the promotion of international cooperation for research and development in the transport sector.

⁶ <http://www.jarnvagsklustret.se/>

⁷ <http://acs-aero.com/>

⁸ <http://tungafordon.com/se/klusterinitiativ>

4. Sources

4.1 INTERVIEWS

- Anders Berndtsson, Swedish Transport Administration (Trafikverket), 2015-09-11
- Anders Blom, Swedish Defence Research Agency (Totalförsvarets forskningsinstitut FOI), 2015-09-15
- Anders Rubensson, SAAB, 2015-09-08
- Bo Hallams, DB Schenker, 2015-09-16
- Bo Olsson, Swedish Transport Administration (Trafikverket), 2015-09-17
- Erik Fridell, Swedish Environmental Research Institute (Svenska miljöinstitutet IVL), 2015-09-18.
- Eva Sunnerstedt, City of Stockholm, 2015-09-18
- Göran Folkesson, Clean motion, 2015-09-08
- Göran Rudbäck, Swedish Maritime Administration (Sjöfartsverket), 2015-09-11
- Hans Arby, UbiGo, 2015-09-09
- Ingrid Skogsmo, Chalmers University of Technology SAFER, 2015-09-11.
- Jonatan Hanson, Hogia public transport systems, 2015-09-24
- Kent-Eric Lång, Viktoria Swedish ICT, 2015-09-09.
- Mats Rosenqvist, Volvo, 2015-09-08
- Per Leander, Transrail, 2015-09-15
- Robert Lundberg, GKN Aerospace, 2015-09-09
- Sebastiaan Meijer, The Royal Institute of Technology KTH, 2015-09-17.
- Siv Leth, Bombardier, 2015-09-08
- Stefan Svedhem, Innovatum, 2015-09-08
- Tomas Svensson, Swedish National Road and Transport Research Institute (Statens väg- och transportforskningsinstitut VTI), 2015-09-11.
- Uday Kumar, Luleå University of Technology LTU, 2015-09-16.

4.2 WRITTEN SOURCES

Aerospace Cluster Sweden (2015). <http://acs-aero.com/> [Öppnad 2015-10-13]

EU Kommissionen (2013). *Smart, green and integrated transport. Revised (2015)*. Horizon 2020 – Work Programme 2014-2015.

EU Kommissionen (2015). *Horizon 2020. First results*.

Järnvägsklustret (2015). <http://www.jarnvagsklustret.se/> [Öppnad: 2015-10-03]

RISE – Research Institutes of Sweden. *EUSMESUPPORT2020*. <http://www.ri.se/erbjudanden/sma-och-medelstora-foretag/eusmesupport2020> [Öppnad: 2015-10-03]

Tunga fordon. *Klusterinitiativ*. <http://tungafordon.com/se/klusterinitiativ>
[Öppnad: 2015-10-13]

VINNOVA (2013). *FP7 and Horizon 2020 – a comparative study of the support services in the Nordic countries*. VINNOVA Analys VA 2013:16.

VINNOVA (2015a). *Årsbok 2014 - Svenskt deltagande i europeiska program för forskning & innovation*. VINNOVA Analys VA 2015:01.

VINNOVA (2015b). *Årsredovisning 2014*. VINNOVA Information VI 2015:05.

4.3 UNPUBLISHED DATA

VINNOVA (2015c). Unpublished statistics

**DENMARK**

Oxford Research A/S
Falkoner Allé 20
2000 Frederiksberg
Denmark
Tel: (+45) 3369 1369
office@oxfordresearch.dk

NORWAY

Oxford Research AS
Østre Strandgate 1
4610 Kristiansand
Norway
Tel: (+47) 4000 5793
post@oxford.no

SWEDEN

Oxford Research AB
Norrländsgatan 11
103 93 Stockholm
Sweden
Tel: (+46) 08 240 700
office@oxfordresearch.se

FINLAND

Oxford Research Oy
Fredrikinkatu 61a
00100 Helsinki
Finland
www.oxfordresearch.fi
office@oxfordresearch.fi

BRUXELLES

Oxford Research
C/o ENSR
5. Rue Archimède
Box 4, 1000 Brussels
www.oxfordresearch.eu
office@oxfordresearch.eu

LATVIJA

Baltijas Konsultācijas, SIA
Vīlandes iela 6-1
LV-1010, Rīga, Latvija
Tel.: (+371) 67338804
info@balticconsulting.com
www.balticconsulting.com