

## **ITF/OECD working group on High Capacity Transports (HCT) – background, aim, activities and expected outcome**

### **Introduction**

The new ITF/OECD working group is result of a Swedish initiative. After a workshop in Paris 17 April 2014 a minor task force was appointed to work out a draft Terms of Reference. Members of this task force were Chris Koniditsiotis, TCA, Australia, Paul Nordengen, CSIR, South Africa, David Cebon, Cambridge University, UK, and Jerker Sjögren, Lindholmen Science Park, Sweden (chair). The draft Terms of Reference were presented in July 2015 and a new workshop was held in Bordeaux 8 October 2015. An invitation letter signed by both the Swedish Transport Administration and OECD/ITF was sent out to the OECD member states inviting them to join the Swedish initiative and become paying members of the new working group. After that Australia, Denmark, Finland and Norway have decided to join Sweden in this “short cycle project”, which means that the participating countries together cover the costs.

### **Background**

By HCT we mean allowing longer and/or heavier vehicles than are currently allowed for general access. Other terms for the concept are HCV (High Capacity Vehicles), HPV (High Productivity Vehicles), Mega trucks and by its opponents Monster trucks. Such vehicles are normally only allowed on certain parts of the road network and there are special requirements on both the vehicles and the operation thereof.

There has been significant progress during the past few years with regards wider acceptance of the idea of longer and heavier vehicles.

Most important is perhaps the wider adoption of the Performance Based Standards (PBS) approach for heavy vehicle design and operation – not as a new standard to replace the European Modular System (EMS) - but as a complementary tool – which has made it possible to better match the vehicle to the road by differentiating the road network into several classes depending on the mass and length of vehicle combinations.

Furthermore, the rapid advancement in information and communication technologies has made it more cost effective to advise, monitor and enforce HCT compliance to access conditions and traffic regulations. The Australian National Telematics Framework with the applications IAP (Intelligent Access Program) and EWD (Electronic Work Diary) is a good example.

According to recent OECD/ITF forecast, demand for transportation will continue to grow in all countries, and it will not be possible to increase the capacity to accommodate that growth by investment in new infrastructure only. Freight transport demand is expected to increase by

a factor of four by 2050; most growth is expected in Africa, Asia and South America, where transport infrastructure is poor and funding of new infrastructure is limited. (ITF Transport Outlook 2015, OECD/ITF, 2015)

High Capacity Transports has been proven in a growing number of countries to be a concept that gets more out of existing infrastructure after a relative small investment in road and bridge adjustments, while simultaneously lowering the need for energy and reducing emissions, climate impact, accidents and the total costs for both the users and the society.

Based on this background, bench marking and sharing of knowledge is a way to establish international standards and to get “more bang for the buck” and accelerate the global diffusion of the HCT concept.

### **Objective and aim for the working group**

The aim for the new study and working group should be to update state of the art and to take further important discussions from the previous work e.g. the report “Moving Freight with Better Trucks”. (Moving Freight with Better Trucks, OECD/ITF, 2011.)

The project aims to respond to community demand for improved road safety, amenity and environmental outcomes as well as society and industry needs for increased productivity, in the context of projected growth in demand for freight transport and the expectation that road transport will continue to carry a major part of this demand.

The expected outcome would be a broad global picture of the use of HCT – volume, which type of transports and vehicle combinations, trends and ongoing research and development as well as regulatory framework, strategies and road maps in different countries. The project will provide guidance for policy makers on fundamental principles for the development of an adequate regulatory framework for countries interested in revising the mass and dimensional limits of trucks and implementing the concept of High Capacity Transports.

### **Outline**

The study will examine the safety, environmental and productivity impacts of current and future High Capacity Transports and develop an inventory of regulatory measures and enforcement practices. The impacts of changes in heavy vehicle weight and dimensions, operational policy and technology and their compatibility with the road infrastructure and other road users will be assessed. Based on these insights, the project will conclude by proposing a framework that outlines how the needs of society and industry for increased road transport productivity can be achieved under conditions that provide for significantly improved safety, meet target reductions of emissions and noise and have manageable impacts and demands on the relevant road networks. While some insights and strategies will be generic others will have to be country and/or situation specific.

The study will provide logistics, market and policy perspectives on freight transport in general and HCT specifically: Who are the main stakeholders, perspectives in different industries and

their interests in different transport modes and different types of vehicles, as well as concerns regarding HCT from rail, sea, air and passenger transport stakeholders and policy makers.

Based on the need for knowledge for decisions on strategy and policy and the current state of art the study will conclude with identifying gaps in knowledge and proposing a research agenda.

### **Focus areas**

The ongoing developments and discussion on HCT covers a wide span of issues both on national and international levels. For this study the participating countries and the working group have decided to concentrate on following six focus areas, taking into account limited time and budget and the aim to deliver within the final report a real useful package to policy makers.

#### *Market and impact assessment*

- Potential. Potential for increased productivity and reduced energy consumption together with reduced CO<sub>2</sub> and other emissions. Factors affecting HCT, e.g. relations with other expected technical shifts and market implementation: electrification of roads and vehicles, ITS particularly platooning and self-driving trucks as well as other technical, economic and political developments
- Market. Market studies on the potential demand for HCT in different countries and market sectors. Identify drivers, triggers and barriers for HCV. Special study on intra-Asian and intra-African transport based on ITF Transport Outlook 2015.
- Business case. Describe the business case for HCT (possible return on investment) and also discuss the potential impact on the introduction of HCV on the truck operator market. How will the societal benefits of HCT be shared among the stakeholders?
- Systems impact. Long term impact on the total transport system and the society in large. Here an ongoing study in Sweden will be a starting point.

#### *Modal shift*

It would be useful to address this sensitive topic of how the competitiveness of the modes is expected to evolve over time. HCT may enhance multimodal transport chains but some stakeholders claim it will take market shares from rail and water transport if counteractions are not taken. A descriptive analysis of road freight transport and rail freight patterns could be included. A special workshop on modal choice and modal split will be organized at Cambridge University 7 December 2016. The aim is to give an overview on research on modal split and to review the current state of knowledge on cross-modal elasticity.

#### *Performance Based Standards (PBS)*

- Simplifying the development of a PBS approach, by proposing a set of internationally agreed performance indicators. The starting point would be the indicators developed

by Australia which could be adapted to specific conditions of other countries and regions. An important aspect of a successful PBS approach especially in Europe will be the mutual recognition of the performance of vehicles. By close collaboration with ACEA and the CEDR financed project Falcon results from their work will be included in our final report.

### *Infrastructure*

- Impact of HCT vehicles on roads and bridges. Long term effects on both the structure of the road and the surface of different vehicle classes. Since the capacity of the road to carry more loads varies with weather, temperature and traffic intensity dynamic weight restrictions may be beneficial.
- Network access. Provide tools to match roads to vehicles, e.g. categorize the road network for a range of access permits.
- Infrastructure investments. In general, HCT results in less need for investment in new traffic capacity for rail and road but some adjustments are needed to accommodate the increased gross weights on bridges and barriers and the increased lengths on ramps, parking places and rail crossings. Responsibilities and financing of this have to be decided for main roads, municipal roads and private roads, terminals, parking and gas stations. Last mile to/from loading/unloading and the HCT network is particularly challenging.

### *Safety*

- Provide factual data and information on crash records of HCT. Proposals on measures to make HCT even safer and more accepted by other road users.

### *Compliance*

- Monitoring and enforcement. Monitoring and enforcement is particularly important in the beginning before the HCT network has been upgraded. Stricter monitoring will reduce the risk of overloading. How much stricter should HCT vehicles be monitored than other vehicles?
- ITS and telematics. An ITS/IAP approach should be an important element of the package for political acceptance of HCT. Requirements on operator and driver support to follow permits and regulations? What data do authorities need for infrastructure management and compliance monitoring? Using the same on board devices and back end systems for services for both private sector and authorities or separate devices?

### **Organization of the work**

The study will be carried out within a two-year project with few physical meetings and between these telcos and videoconferences. The work will be divided between countries and

persons taking advantages of existing national studies and projects. A couple of workshops will be carried out timely linked to other events.

The working group is composed of representatives from countries financially contributing to the project.

Participating countries and members of the working group are following:

Australia	Chris Koniditsiotis, TCA
Denmark	Erik Søjberg, The Danish Road Directorate
Finland	Vesa Männistö, Finnish Transport Agency
Norway	Saba Rabbira Garba, Norway Public Roads Administration
Sweden	Thomas Asp, Swedish Transport Administration
Chairman	Jerker Sjögren, Jesjo Konsult, Sweden

Other involved countries, institutes etc. are:

New Zealand (John de Pont, TERNZ)  
South Africa (Paul Nordengen, CSIR)  
France (Bernard Jacob, IFSTTAR)  
England (David Cebon, Cambridge University)

Representatives from the industry will be invited to a reference group.

A close collaboration with ACEA (The European Automobile Manufacturers' Association) is already established due to their activity in the HCT area, especially on PBS. ACEA is also involved in the new CEDR-financed project Falcon which obviously will be an important source for our study.

The working group is supported by the ITF Secretariat (Tom Voegelé and Raimonds Aronietis). Professor John Woodroffe, University of Michigan, USA, and professor Alan McKinnon, Kühne Logistics University, Germany, will be involved on consultancy basis.

### **Timeline, milestones etc.**

After the kick off at OECD in Paris 22 February 2016 following milestones and activities are planned for the project:

- Milestone 1 (May 2016): Table of contents for the final report; all reports, studies, updated statistics collected and compiled; white spots and critical issues identified.
- Milestone 2 (October 2016): First draft of the report; complex, political sensible issues listed for further analysis and discussions.
- Milestone 3 (December 2016): Workshop on modal shift at Cambridge University
- Milestone 4 (April 2017): Report on modal shift.
- Milestone 5 (May 2017): Seminar at ITF Summit in Leipzig; second draft report.
- Milestone 6 (January 2018): Conference at TRB, Washington (optional)
- Milestone 7 (July 2018): Final report

## **Final report – package for policy makers**

Based on a summary of analyses on productivity, energy savings, CO2 reduction, safety, modal shift etc. a final report with recommendations including a package for policy makers will be delivered.

While there is, for good reason, great variation in HGV and HCT policy among nations, models methods and tools to tackle the challenges could be similar. With this study the working group intends to facilitate international acceptance of analysis methods, metrics and criteria definitions. These tools will provide an opportunity for common assessment using standardized data and methods on which to base policy decisions.

The package for policy makers will also include a best practice toolbox on fundamental principles for development of an adequate regulatory framework for countries interested in revising the weight and dimensional limits of trucks and implementing the concept of HCT.