Comments on the draft working paper on environment.

Chapter 2.3.3 Rail transport

The European authorities recently (Mid. 2004) officially launched the 'Railway Agency', based in Lille (France) which is responsible for interoperability, safety and a number of other environmental issues mentioned in this Spin Paper.

Chapter 2.3.4 Air freight

Factually, a substantial amount of pollution is created near cities because of three reasons: first, an aircraft pollutes relatively a lot of pollution at its departure; secondly, it is common practise that aircrafts in an air-cue (congestion) just before landing exhausts more pollution since it is forced to circle around the city upon the permission to land has been given; thirdly, from safety point of view (too heavy planes = not safe to land) an aircraft is obliged to 'dump' as much a kerosine as possible before landing in those cases the aircraft was in a positive wind stream.

Chapter 2.3.5 (non existing chapter): Terminals as shift point between modes

Considerable pollution is being produced around and in terminals, going along with considerable energy consumption. Truckers pollute the most, especially while being forced to wait in a cue. There are studies executed in Japan: environmental impact of intermodal transportation by trucks on ports by means of measuring exhaust emissions that cause air pollution (info: ask EIA – European Intermodal Association). Inland waterways & terminals: no study known, but looking to the future, citizens will 'vote' increasingly against ports, terminals and logistic parks; this should be taken into consideration as well as argument to use inland shipping instead of trucking-only.

Chapter 2.4 Comparison between the transport modes

On EU level, there is one specific study regarding external costs of transport which is considered as most 'neutral': INFRAS IWW (Swiss research institute). Results: Excluding congestion, the external costs in Europe of freight traffic is estimated over 530 billion Euro, of which road is responsible for 91.5%; air 6.1%; rail 1.9% and waterway 0.5%. These effects are unequally distributed; with air freight in cost per tonne-km, the climate change is charged over 70% and noise about 10%. Road haulage is over 50% air pollution and 15% climate change. Rail freight has a total external cost of 19 Euro on 1000 tonne-km against road with 88 Euro per 1000 tonne-km. It has to be said that there is an additional point with rail. It needs heavy engineering, which cost a lot of steel and energy related processes, while power generation (electricity) is not always environmental friendly. If one adds congestion: 700 billion Euro, partly because of lost time, partly because of for example air pollution which

gets proportionally worse. This affects primarily air and road. From 1995 until 2010 external costs will rise by 42% according to EU studies.

Regarding studies that allows comparisons between modes: in 2005, the EU 'REALISE' project will be finalised. The studies deals with Statistics, Environment impacts, and Multi-modal transport pricing and costing comparisons, especially regarding short sea shipping in the context of its integration into the overall logistics supply chain. It will include Inland waterways multimodal environmental impact. It includes concrete and realistic calculations regarding the environmental costs per means of transport per ton-km in specific European Corridors. AMRIE is the leader of this EU project. The EIA is partner and responsible for organising the Final conference (disclosure of results) in 2005.

Technical remark Chapter 2.4: The new engines in ships will probably not last longer than 10 years because it is more economical to place a new engine than to repair it. (reviseren)

Chapter 3.2 Resistance

Inland waterways / Research: The EIA has contacted informally the EU Commission recently (Mid. 2004) to evoke *possible* measures assisting a Dutch and German consortium / shipbuilders who use air bubbles to lower friction on the hull water surface.

Air sector / Research: the air sector tested a specially designed surface including small 'holes' in the nose of the aircraft (golf-ball structure) which apparently gains a reduction of energy of 16%. To be used for Inland waterways?

Chapter 3.3 Drive mechanisms

The only really interesting option at this moment is propeller optimisation, especially the mentioned nozzle shaped ring. (straalbuis)

Why are we sceptic about the other options?

- The Whale Tail drive:
  As mentioned in the report, this mechanism is too fragile and there are significant limitations in manoeuvrability.
- Counter-rotating propellers:
  This is a good mechanism in a high-speed situation (speedboat) not in a relatively slow situation (inland waterway shipping). The down slowing force is minimal.
- Azimuth thrusters (Z-drive).
  This mechanism is also very fragile. The practical experience with this system shows that the maintenance and repair costs are very high each year. (try it with technical Lego)

- Propeller optimisation in airline sector: Fokker introduced with success the 'TurboProp': a curved propeller which gains productivity while decreasing energy consumption.

Chapter 3.4 Engines / fuel costs

The inland waterway sector will be influenced especially in Belgian, since the Belgian government decided recently (Mid. 2004) to implement EU legislation regarding 'diesel accijns' (not tax). The normal fuel accijns is currently 15% higher then diesel; within fours years, this will disappear / same level.

Chapter 4.2 In-process measures

These measures are more interesting than end of pipe techniques, especially the option motor management. This motor management in combination with voyage optimisation software can form a good system.

EGR and water injection systems are not very interesting options. With both systems we question the possible negative effects on the engine.

Chapter 5.2 Lowering sulphur levels in gas oil

We are positive about this measure, the indicated 2% increase in price level is not wanted but we can handle it.

Chapter 8.2.2 Integration of other electrical power sources

"So far, the large surface of a regular barge with a covered cargo hold of approx. 1000 m^2 is not used to produce electricity by means of solar panels."

Barges with a covered cargo hold usually transport bulk goods. The loading and unloading of the ship will be a high risk factor for solar panels. It is not uncommon that a crane spills 5-10 tons, this will result in damaged solar panels.

Finally we want express our support to all recommended policy measures mentioned in chapter 10.

Chapter 9.3 Cargo waste etc.

After having interviewed a *limited* number of ship operators: common practise learn that operators clean the inside of the ship with river water, while a pump transfers minor residues back into the river. The operators are generally aware of 'oppervlaktewater vervuiling wetgeving'; they try categorising what is 'accepted' waste and what is not accepted. Generally, operators are aware of waste-disposal areas to dump any garbage bags; in 95% of the cases, these areas are used. No analytic study known with exact results.

Chapter 10.4 Recommendations for future requirements

The inland shipping sector has to improve its 'PR' to citizens in the region, via media and Press and dissemination of (positive) effects using inland shipping – in relation to other less environmentally transport modes. Image building; just as the road and rail sector have done the last 30 years as well.