High Capacity Intermodal Transport (HCIT) – effective and competitive intermodality for the forestry sector

Final results of pre-study

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Agenda

- Prelude
- Purpose
- Results
- Conclusions
- Next step

Prelude

- The Swedish forestry industry has transformed significantly since the 1980s with larger, more specialized production units and global trade, increasingly relying on containerized transport instead of bulk.
- Sweden’s forest industry accounts for 25% of the country's freight transport, with 83% of production exported, making it the world’s 4th largest exporter of forest products.
- Sweden produces 41 million tons of forest products annually, including sawed timber, pulp, and packaging materials.
- Swedish forest industry operates on a competitive global market with a deficit with regards to distance
- A well-functioning transport system combining road, rail, and sea is vital for maintaining global competitiveness, but current capacity constraints in trucking and rail systems could hinder the industry's future competitiveness.
- The government assignment "Assignment to intensify efforts to promote intermodal rail transport” (TRV 2018/93255) propsed an intermodal incentive measures to optimize the entire transport chain.
    - Exemption to use electric-powered long and heavy vehicles (34 meters and 90/98 tons) in and around a railway terminal (100 km) if the rail transport distance is at least 200 km.
- That incentive is the basis for this pre-study.

Purpose of the pre-study

- Evaluate potential benefits of 2x40" HCIT (long and **heavy**)*
  - Reduced emissions
  - Reduced traffic
  - Cost savings
  - IF benefits are proven, create a basis for testing 2x40" HCIT vehicles

** 2x40" HCIT = corresponding load capacity as 2 x EU-trailers*

- *Challenge with dispensations for HCT*
  - *Level of innovation*
  - *Time-limited*
  - *Weather conditions (electric operation)*
  - *Desire to run full-scale for maximum impact*

Stenvalls

Piteå-Gävle

	25 m truck	HCT 2x40"	25 m truck + rail	HCIT 2x40" + rail
Cost (market prices)				
from sawmill to export port terminal	100	82	95	72
Ammount of goods				
ton	35	48	35	48
m3	65	90	65	90

Export in 40" containers	100 000	m3

Transport work and Emissions

Distance Piteå - Gävle (road)	68	metric miles
Distance Piteå - Gävle (rail)	89	metric miles

	25 m truck	HCT 2x40"	25 m truck + rail	HCIT 2x40" + rail
number of trucks Piteå	1 692	1 111	1 692	1 111
number of trucks Piteå - Gävle	1 692	1 111		
Emissioins road (CO2 eq)	3 359 231	2 644 444	247 077	194 444
Emissions rail (CO2 eq)			492 222	492 222
Total CO2e	3 359 231	2 644 444	739 299	686 667
INDEX	100	79	22	20

NTMCalc Basic 4.0 Piteå-Gävle Regional (50 km)

Emissions per 25 meter truck (CO2e)	1 985	146	kg
Emissions per HCT 2x40" truck (CO2e)	2 380	175	kg
electric Emissions per 2x40" Rail (CO2e)	443		kg

Fiskarheden

Malungsfors - Göteborg

	25 m truck	HCT 2x40"	25 m truck + rail	HCIT 2x40" + rail
Cost (market prices)				
from sawmill to export port terminal	100	81	100	75
Ammount of goods				
ton	35	48	35	48
m3	65	90	65	90

Export in 40" containers	90 000	m3

Transport work and Emissions

Distance Malungsfors - Göteborg (road)	42	metric miles
Distance Malungsfors - Göteborg (rail)	50	metric miles

	25 m truck	HCT 2x40"	25 m truck + rail	HCIT 2x40" + rail
number of trucks Malungsfors	1 523	1 000	1 523	1 000
number of trucks Malungsfors - Gothenburg	1 523	1 000		
Emissioins road (CO2 eq)	1 867 292	1 470 000	222 369	175 000
Emissions rail (CO2 eq)			700 000	700 000
Total CO2e	1 867 292	1 470 000	922 369	875 000
INDEX	100	79	49	47

NTMCalc Basic 4.0 Fisk - GBG Regional (50 km)

Emissions per 25 meter truck (CO2e)	1 226	146	kg
Emissions per HCT 2x40" truck (CO2e)	1 470	175	kg
diesel Emissions per 2x40" Rail (CO2e) Malungs-Borl.	500		kg
electric Emissions per 2x40" Rail (CO2e) Borl.-GBG	200		kg

Conclusion

- **Intermodal setup with 2x40" HCIT provides the best effect regarding:**
  - Costs
    - Directly as well as indirectly due to modularity (administration and terminal handling)
  - Emissions
  - Traffic
  - 2x40" HCT on roads outcompetes conventional intermodal rail freight.
    - Risk if main roads are open for HCT but not the capillary road network.

- **Sweden exports 3,5-4 million m3 of sawn timber per year to North America and Asia in 40” containers**
  - The 2 cases cover 190 000 m3

- **Message to TripleF / Swedish Transport Administration / Transport Agency / Decision-makers**
  - **Do not distort competition:** Ensure that HCT transports do not undermine railways and intermodality.
  - **Demonstration project:** Conduct demonstration projects at the relevant sawmills to test 2x40" HCT vehicles under real conditions, including the use of conventional fuels or HVO where electric trucks are unsuitable.
  - **Regulatory adaptation:** Work towards adapting regulations so that permits for HCT vehicles, capable of carrying the maximum weight of goods in 2x40" containers, can be granted within a radius of 100 km from intermodal rail-connected transshipment terminals.
  - **Infrastructure development:** Invest in the development of road networks and intermodal terminals to support the above-mentioned HCT transports, especially on routes connecting sawmills with rail terminals and export ports.

Proposed next step

- Make use of the proposed stimulus for intermodal transport that would allow for long and heavy road transport (34 meters and 90/98 tons) within 100 km from a rail station if the rail haulage is 200 km or more.
- If possible, the local industries that have been part of the pre-study are interested and willing to participate in demonstrations with the aim and goal to establish 2x40” HCIT as a standard procedure for all local road haulage.