

# Towards more reliable emission data for the external cost calculation of IWT

PLATINA2 - SWP 2.2

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# SWP2.2 Knowledge base for innovation take up and external cost

## ■ **Main objective:**

- Review quality of datasets for calculation of emissions and external costs for IWT at EU level (€/tkm)
- Identify the knowledge gaps for external costs of emissions to air
- Provide recommendations on how to close the main gaps and validate these with the sector

## ■ **Main tasks executed by PLATINA2:**

- Review study on the currently available European datasets for external costs calculations on emissions to air
- Three main stakeholder exchange activities

# Summary of review findings (1/3)

## Logistic parameters

- **Load factor** loaded trip: depends on available water depth => free-flowing sections provide uncertainties and large bandwidth
- **Huge gap** regarding information on **share of empty sailings**
- Eurostat statistics contain **only two categories for vessels over 1500 tonnes**

## Energy consumption

- Specific energy consumption differs from waterway to waterway and per vessel type. Models are used to estimate fuel consumption.
- **No representative dataset available on actual fuel consumption**
- Of the parameters behind fuel consumption: **data on sailing speed shows a big gap**

# Summary of review findings (2/3)

## Emission parameters

- **Real world emission** factors NOx and PM<sub>2.5</sub> are unknown
- Emission factors for **LNG** engines are hardly known yet
- Information on **auxiliary engines** is more or less completely missing

## Monetisation

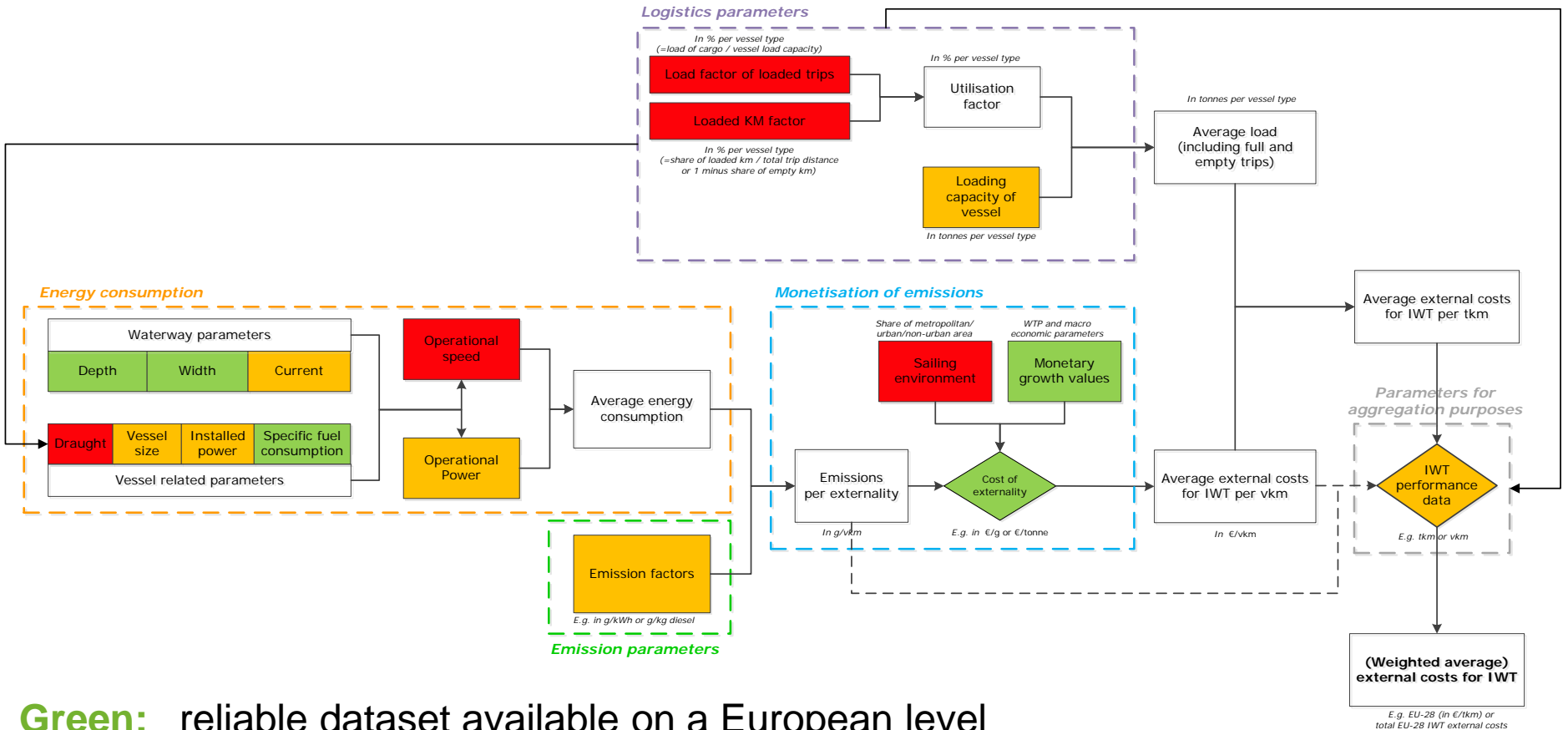
- Large differences between countries and type of areas as regards the shadow prices for NOx and PM => Need for detailed information on the **geographic breakdown** of the traffic and transport performance

# Summary of review findings (3/3)

## Aggregation

- No complete and reliable datasets are available on a European level on vessel kilometres and average load factor
- More **differentiation** needed between **vessel size classes** is recommended (especially for large vessels and coupled units)
- The largest gap: **empty sailings** => **voluntary** Eurostat data table (B2).
- Significant information about IWT gets lost when translating information from a single dataset per trip (where possible) to the aggregated Eurostat statistics.

# Main gaps



**Green:** reliable dataset available on a European level

**Orange:** improvements needed on the current dataset to enhance the reliability

**Red:** no dataset available on a European level

# Main gaps and recommendations

- 1) the lack of reliable and detailed data on the **fuel consumption** of vessels active in inland waterway transport  
=> collect data on fuel consumption and develop reliable models with accurate speeds and waterway information (RIS sources: AIS, ECDIS, NtS)
- 2) lack of reliable data on the **average tonnage carried** by inland vessels per travelled kilometre, properly taking into account the **share of empty trips**  
=> use DESTATIS for Germany to extrapolate, explore options to use AIS, Eurostat/NSI's to provide more data
- 3) lack of **geographic detail** to determine impact of NO<sub>x</sub> and PM<sub>2.5</sub> emissions by IWT:  
=> make use of GIS, OD-flow data (e.g. ETIS+), AIS?, TENtec?

# Stakeholder exchange activities

- **PLATINA II Expert Workshop** in Brussels on 5 October 2015, with the objective of presenting the study and discuss the recommended measures and proposed actions:
  - **What** can be done?
    - What are the quick wins and possible voluntary actions?
    - What can be done with optimised usage RIS?
    - What can be done if legal framework is adapted?
  - **Who** can/should take action and the lead?
  - **When** can it be planned (time horizon 2016- 2020)?
  - **Where** can/should measures be implemented (geography)?
- **Participation during a Working Group meeting on Inland Waterways Transport Statistics** with NSIs in Luxembourg on 6 November 2015, including the preparation of a draft paper on the matter
- Development of a **paper as input for the CESNI Group**



# Outcome of stakeholder exchange (1/2)

- **Current data quality is not reliable**, there is no basis yet to start discussions about internalising external costs. EC main aim: improve data quality to enable comparison of external cost with other transport modes on aggregated level. Follow a **top-down approach** first.
- **Legal framework** regarding data collection on EU level cannot be changed on short term. Focus on **voluntary actions** to close data gaps.
- **Voluntary action** by EUROSTAT and NSI's to be followed up:
  - Possible usage of energy statistics for fuel consumption and CO<sub>2</sub>
  - Address issue of lack of information about the empty trips
  - Expansion of the vessel size differentiation (large classes)
- **CDNI fuel bunkering information** can be used as a first order estimate on fuel consumption on macro level. Research and publication is already planned by CCNR in the framework of the Market Observation IWT EU.

# Outcome of stakeholder exchange (2/2)

- Using **AIS data** on an aggregated and anonymised way:
  - Too much data and efforts for NSI's and EUROSTAT: No Go
  - Building further on **CoRISMA** seems most appropriate, involving national RIS authorities, possibly to be supported by EC (CEF project)
- Option of extending the use of the **European Hull DataBase** for accurate engine information. **CESNI**, draft working programme: *“Adaptation of ES-TRIN in relation to the content and the functions of the European hull database”*
- Option of usage of improved **IVR database** with more accurate and validated by ship owners on installed engines, possibly linked to EHDB
- **PROMINENT**: real world measurements of fuel consumption and emissions
- **TENtec** 2016 data collection IWT (Lot 2 call for tender MOVE/B1/2014-527)

# *Thank you for your attention!*

## More information & contact details

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