

Presentation Emission Measuring at Bertschi

ECTA RC 2021

“Mistakes are a fact of life. It is the response to error that counts” - *Yolande “Nikki” Giovanni*

AGENDA

- **Bertschi Group**

- Global Logistics Solutions – who we are

- **Collecting the data**

- Datacollection – The order
- Datacollection – Processing the information the TMS
- Datacollection – The “legs”
- Datacollection – Generating the CSV File
- Datacollection – Calculation via EcoTransIT

- **Analyzing the emissions**

- Analyzing – Separation of data
- Analyzing – Cumulation File
- Example – Subsidiary Rotterdam (05/2021)
- Further challenges



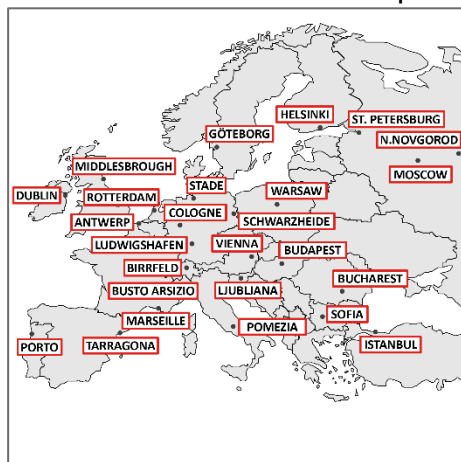


Bertschi Group

Global Logistics Solutions – who we are

GLOBAL SUBSIDIARY NETWORK

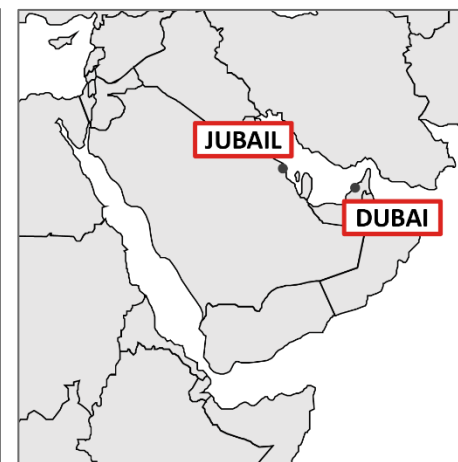
Intermodal Network Europe



Asia



Middle East



North and South America



BUSINESS UNITS

BU Liquids - Europe

BU Dry Bulk - Europe

BU Global - Global

BU Solutions - Global

KEY FIGURES

€839M
Turnover

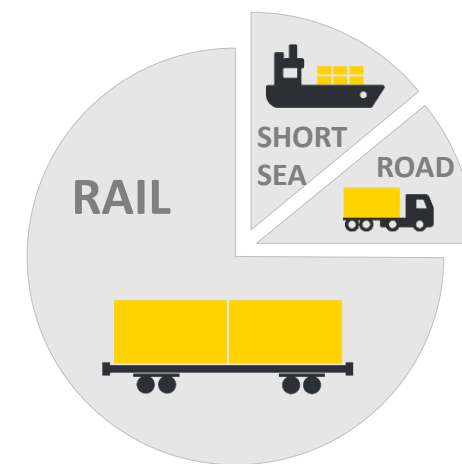
38
Countries

1,000
Trucks

3,100
Employees

77
Subsidiaries

38,200
Containers

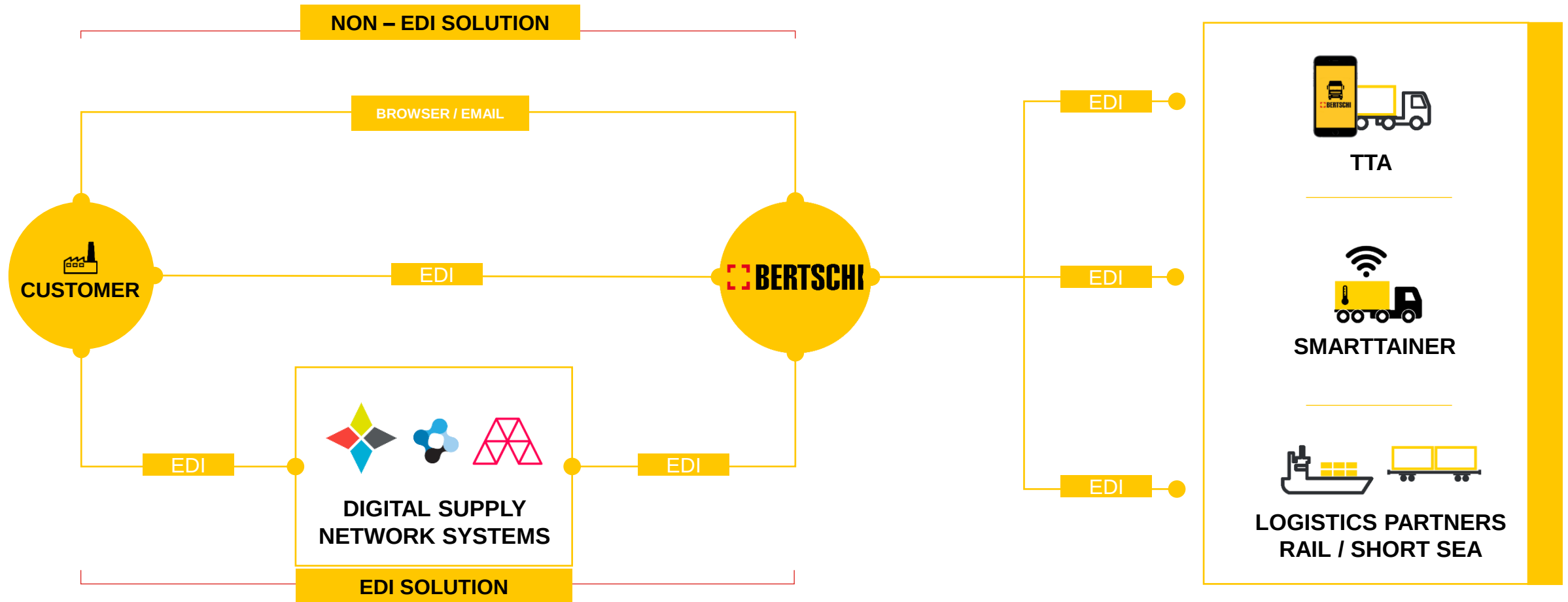


Modal shift to rail/short sea
(Europe)



Collecting the data

Datacollection – The order



Datacollection – Processing the information in TMS

1. Registration of shipment order in our Database

Auftragserfassung | Auftrag Schnellerfassung

Auftrag Schnellerfassung Ctrl+1 Adressangaben Ctrl+2 Produktangaben Ctrl+3 Plomben Ctrl+4 Auftrag Info Ctrl+5 Edi Info Ctrl+6 Teilladungen Ctrl+7

980 0433512 Von DE-8 20.08.21 (O) ACSC

900 Abt FSC --> GeoTrace! Nach SE-1 31.08.21 (O) EDI: Erstellt 10.09.21

01 Absender 790066 31 Empfänger i 635091

05 Ladestelle 35 Abladestelle

11 LI 12 LO 100 41 UI 42 AO

13 L-Slot von 14 bis 43 U-Slot von 44 bis

15 FC07:00 16 FC14:00 17 LO- 18 LC- 45 FO07:00 46 FC20:00 47 LO- 48 LC-

20 Abs.Ref 50 Empf.Ref

21 Div 1 51 Div 1

22 Div 2 CLCERT MAX. 3 DAYS 52 Div 2

27 Zus. Kund-

Produktdaten

60 Produkt 65 Best. Transp. Art 66 Gepl. Transp. Art 150 Neutral-

61 Best. Gew Kg. 28'000 Volumen (lt.) 25'455 1.1 151 Kein Trsp. 152 Teilla

63 A Teil 40 Kehl/UNNr. 67 Container 68 Storno 162 U. H

Prod-Nr. 28957/CEMENT P ADR/VP BIDU 493262-4 170 LA Stat

110 LotNr 112 Mark 3536518980 172 LA Konz

Transport Planung und Klötzli

71 Lad. Best 20.08.2021 Fr 91 L-Subi 79 Klötzli Text

72 Abl. Best 31.08.2021 Di 92 A-Subi 80 Klötzli 3

73 Lad. Plan 20.08.2021 Vorherig.LDat 82 Klötzli 4

74 Abl. Plan 30.08.2021 Vorherig.ADat 31.08.2021 84 CMR Druckort

75 Ladetermin MUEN (Muenche 76 Resp LadeA 101 Abr-hinw1

77 Entl-Termin ESKI (Eskilstuna K 78 Resp AblAbt 107 Grenze

990 Folgeauftrag erstellen 700 Planung

2. Planning of order via TMS/TTA

Transport Planning | Transport Planung

Transport Planung Ctrl+1 Transport Kontrolle Ctrl+2 TransportPlanning View Ctrl+3 On Hold/Pending Ctrl+4 Transportübersicht pro Tag Ctrl+5 Buchung Buchung Tn

980 0433512 Von DE-8 20.08.21 (O)

FSC -- N i SE-1 31.08.21 (O) EDI:

Q28'000 300 Container i L 6.05 350 Init. Lade StUncleaned 360 Vorbelad 400 Dispo Notizen

290 E28'240 BIDU 493262-4 T 4020 Temp i 20 C 370 plarSHORT_SEA

V25'673 F 91% - ordered RAIL 36 Leg Notizen

10 Leg 20 Leg Typ 30 TransportMode Leg 35 Verfügbar

10 collection (Aufnahme, Beladung) Strassentransport (Road)

40 Von 50 Nach 60 Partner 61 TransportLine 62 Zuständig

CLBU MUEN - FSC

70 Zug i OSLRP897 72 Auf i OSLRP513 74 Fahrer WilkolaZbi 75 Gr-

76 Subi 77 Ext.- 78 Subi Fahre- 79 Pri-

80 Plan Abfahrt 19.08.2021 81 Plan Ankunft 20.08.2021

200 eff. Abfahrt 19.08.2021 16:42 Eu/Berlin 201 eff. Ankunft 20.08.2021 17:38 Eu/Berlin

82 Lade Slot von 83 bis 88 Entlade Slot von 89 bis

85 Plan Loading 20.08.2021 90 Plan Unloading 30.08.2021 10:00 Eu/Stockholm

205 Arrived at Gate 20.08.2021 09:34 Eu/Berlin 220 Arrived at Gate 30.08.2021 10:00 Eu/Stockholm

210 Checked Out 20.08.2021 15:00 Eu/Berlin 225 Checked Out 30.08.2021 13:40 Eu/Stockholm

990 An G

UK / 20.08.2021

970 Matrix

600 Transport Legs Übersicht

Leg	Resp	Type	Mode	From - To	Carrier	Equipment	Plan / Eff	Estimated	App	->
10	FSC	COLLEC	ROAD	CLBU > MUEN	i	OSLRP897	L 20.08	21.08	i	🚚
20	FSC	IM_ROU	RAIL	MUEN > HAMB > TRAV	i		A 21.08	-	i	🚚
30	FSK	IM_ROU	SHORT	TRAV > TREL (CHANGE_MAILED)	i		A 22.08	-	i	🚚
40	FSK	IM_ROU	RAIL	TREL > ESKI (CHANGE_MAILED)	i		A 25.08	-	i	🚚
50	LQPersto	DELIVE	ROAD	ESKI > TCSH	i	PSZ727	U 30.08	-	i	🚚

800 Ladeinfos 820 Abladeinfos

810 Absender Refere 830 Empfänger Refere

840 Abrech. Hinw1 850 Abrech. Hinw2 TRSP.EDI:

860 Buchungsnummer 03086972 870 Leg Status Booking sent (TEMP) -40 C

880 start L-Status Uncleaned 890 end L-Status Loaded

900 Schnellerfassung

Datacollection – The «legs»

Order gets split up into several “legs”

- The planning department transmits every leg via EDI to the specific party. (Driver, Railway operator, Short sea operator etc.)

Legs serve as base for our emission calculation

- Every single data entered or collected in our TMS system can be extracted into separate reports.

600 Transport Legs Übersicht

Leg	Resp	Type	Mode	From - To	Carrier	Equipment	Plan / Eff	Estimated	App	->
10	FSC	COLLEC	ROAD	CLBU > [REDACTED] > MUEN (CHANGE_APPROVED)	-	OSLRP897	L 20.08	20.08		
20	FSC	IM_ROU	RAIL	MUEN > HAMB > TRAV (NEW_CONFIRMED)	[REDACTED]		A 21.08	21.08		
30	FSK	IM_ROU	SHORT	TRAV > TREL (CHANGE_MAILED)	[REDACTED]		A 22.08	-		
40	FSK	IM_ROU	RAIL	TREL > ESKI (CHANGE_MAILED)	[REDACTED]		A 25.08	-		
50	[REDACTED]	DELIVE	ROAD	ESKI > [REDACTED] > TCSH	[REDACTED]	PSZ727	U	30.08		

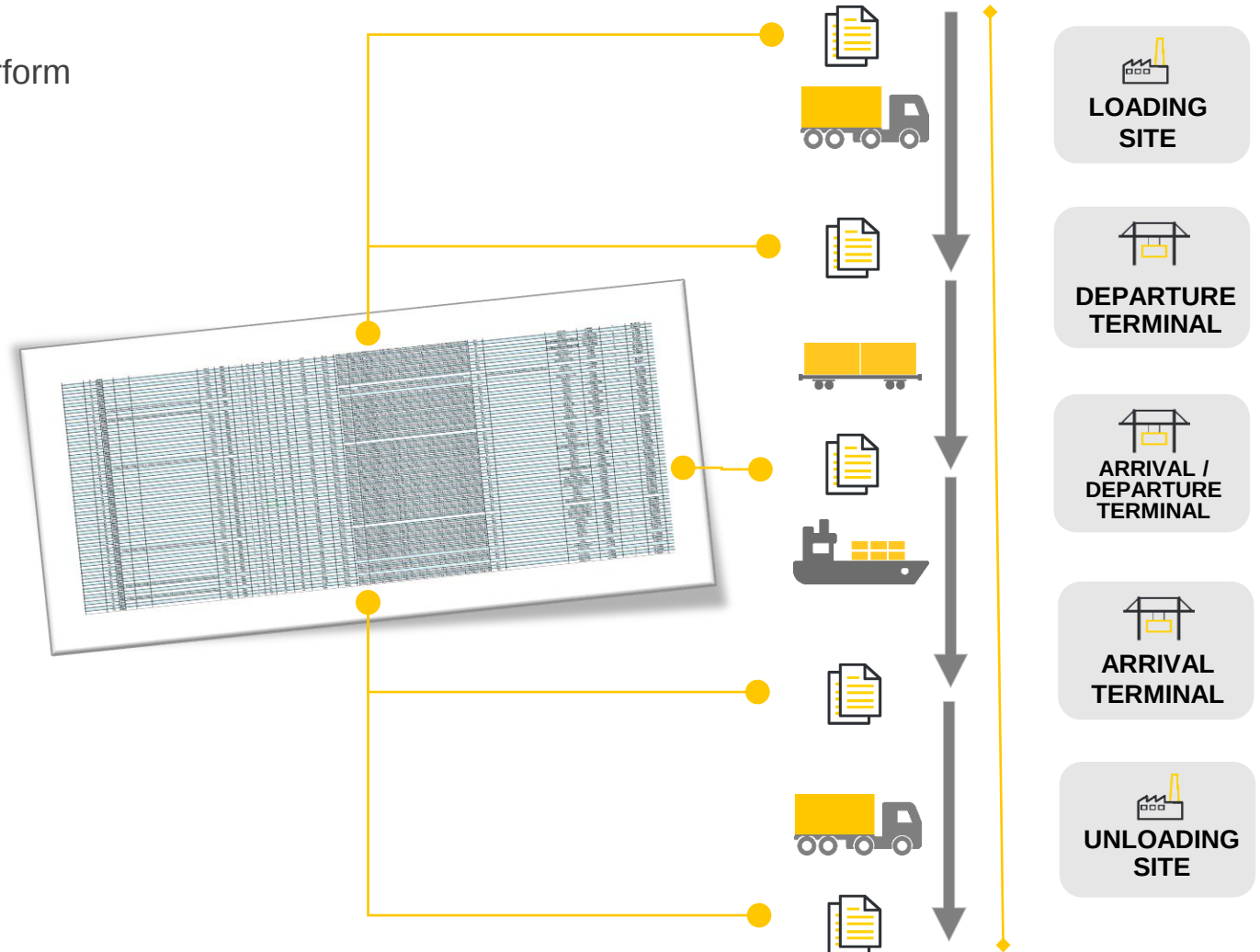
Datacollection – Generating the CSV File

Meeting with EcoTransIT

- Define key elements to create the report and perform the calculations

Generate trial report with test data

- Define 24 categories (6 for *internal use*)
 - Shipment ID
 - Origin location (ZIP code)
 - Transport equipment used
 - Vehicle class (40-50 to truck, train etc.)
 - Emission class truck
 - Destination location (ZIP code)
 - Weight of cargo
 - Scope 1 / 3
 - Cleaning
 - Customer relevance (loaded / empty)
 - Product group
 - ...



Datacollection – Calculation via EcoTransIT

Monthly report on all legs processed

- Ca. 115'000 – 150'000 legs reported via CSV file

Upload CSV to EcoTransIT for calculation

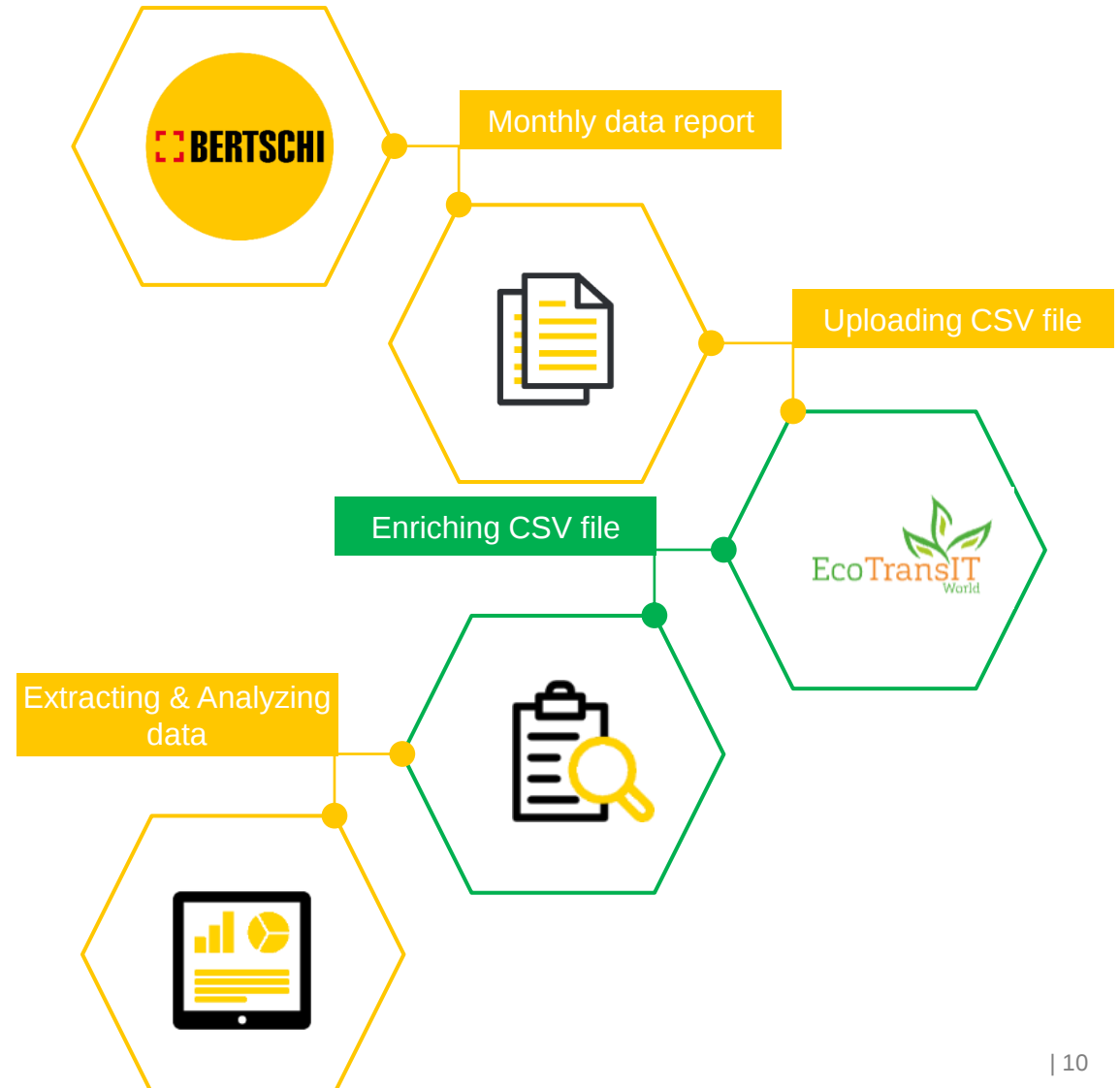
- Upload CSV document to EcoTransIT

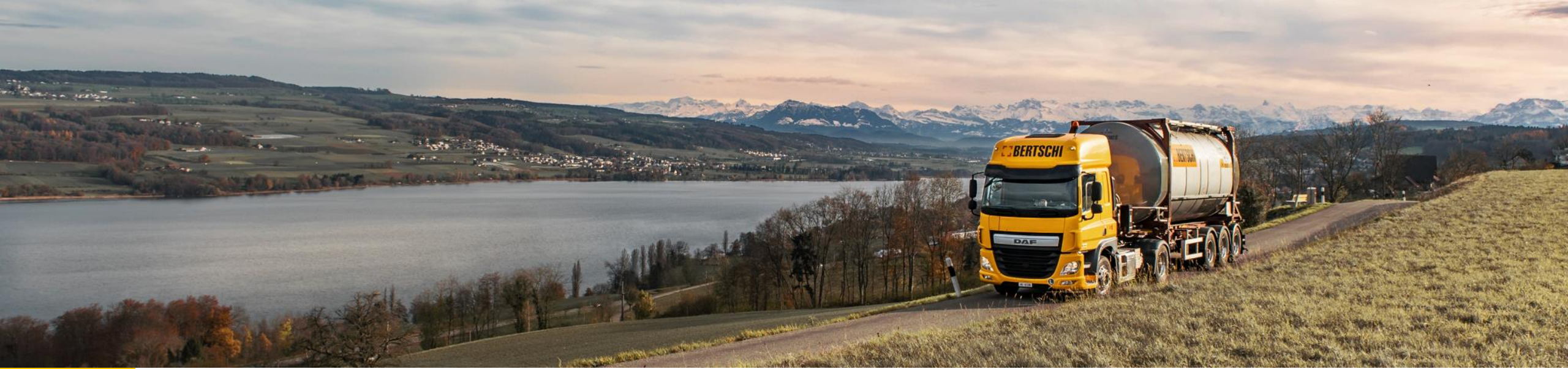
Enriching document with calculated data

- Calculation of emission data according to GLEC Framework and EN 16258
- Enriching CSV report with calculated data

Extracting and analyzing received CSV file

- Extraction of data calculated by EcoTransIT to generate Emission reporting





Analyzing the emissions

Protection of the environment – without compromise!

Analyzing – Separation of data

Splitting Monthly Datasets into different sections

- Splitting the data via Pivot into
 - *Scope 1 (own trucks)*
 - *Scope 3 (Subcontractors / Train / Short Sea)*
 - *Cleanings*
 - *Tonkilometers per subsidiary*
- Separate dataset for every SQAS assessed subsidiary
- Identifying measurement factors per scope group and subsidiary such as:
 - *Energy consumption WTW (MJ)*
 - *Driving distance full / empty (km)*
 - *CO₂E Emissions WTW + TTW (MT)*
 - *NO_x, SO₂, NMHC etc. Emissions WTW + TTW (kg)*
 - *Fuel consumption loaded / empty (l)*
 - *Absolut CO₂ Emissions*
 - *ect.*



Analyzing – Cumulation File



Collect data per month in cumulation file

- Monthly datasets collected in a «Cumulation file».
- This data is again analysed and separated by different Pivots to provide the data required for SQAS 2022
- Graphical dashboard to provide a visual reflection of the data
- Dashboard can be adjusted by different filters
 - *Scope (1 / 2 / 3)*
 - *Status (Empty / Full)*
 - *Modus (Train / Truck / Ship)*
 - *Month*
 - *Subsidiary*

Extracted data are (amongst others):

- CO₂E per modality and scope
- Tonkilometers per modus (tkm)
- Total energy consumption (MWh)
- Fuel consumption (Scope 1 & 3)
- Absolute emissions (g CO₂E / tkm)
- Total CO₂E emissions cumulated (MT)
- Driven distances per modus (full / empty in km)

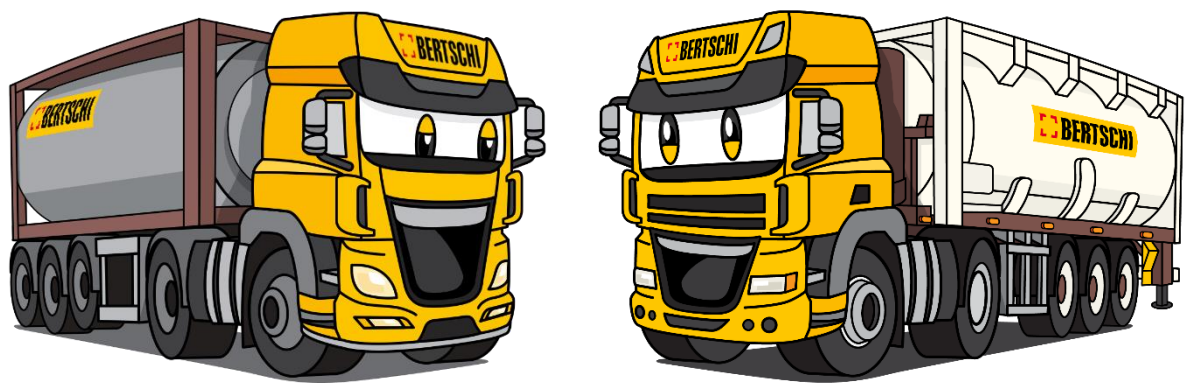
Example – Subsidiary Rotterdam (05/2021)

• Fuel consumption transport:	Scope 1	18'068 l
	Scope 3	47'207 l
	Scope 1	62.52 MT (TTW) 78.78 MT (WTW)
	Scope 3 Subcontr.	164.16 MT (TTW) 206.81 MT (WTW)
• CO ₂ E Emissions TTW / WTW:	Scope 3 Train	0.19 MT (TTW) 62.31 MT (WTW)
	Scope 2	119.1 MT (305.3 kWh; NL: 0.39kg* CO ₂ / kWh) (*eea.europa.eu Statistics 2019)
• CO ₂ E Emissions Electricity		
• CO ₂ E Emissions Cleanings	11x Cleanings	0.89 MT (11*81.32kg* CO ₂ E / Cleaning) (*GLEC Framework 2021)



Example – Subsidiary Rotterdam (05/2021)

- Absolute Emissions WTT CO₂E Fuel consumption: - Tonnes-km - Absolute Emissions CO₂E / tkm:	Scope 1	12.46 MT (18'068l * 0.69kg* CO ₂ E / l) <i>(*GLEC Framework 2021)</i>	
	Scope 1	Truck	1'165'720 tkm
	Scope 3	Truck Ship Train	3'045'640 tkm 46'166 tkm (ship bookings ex DUE) 6'474'242 tkm
			32.58 g / tkm



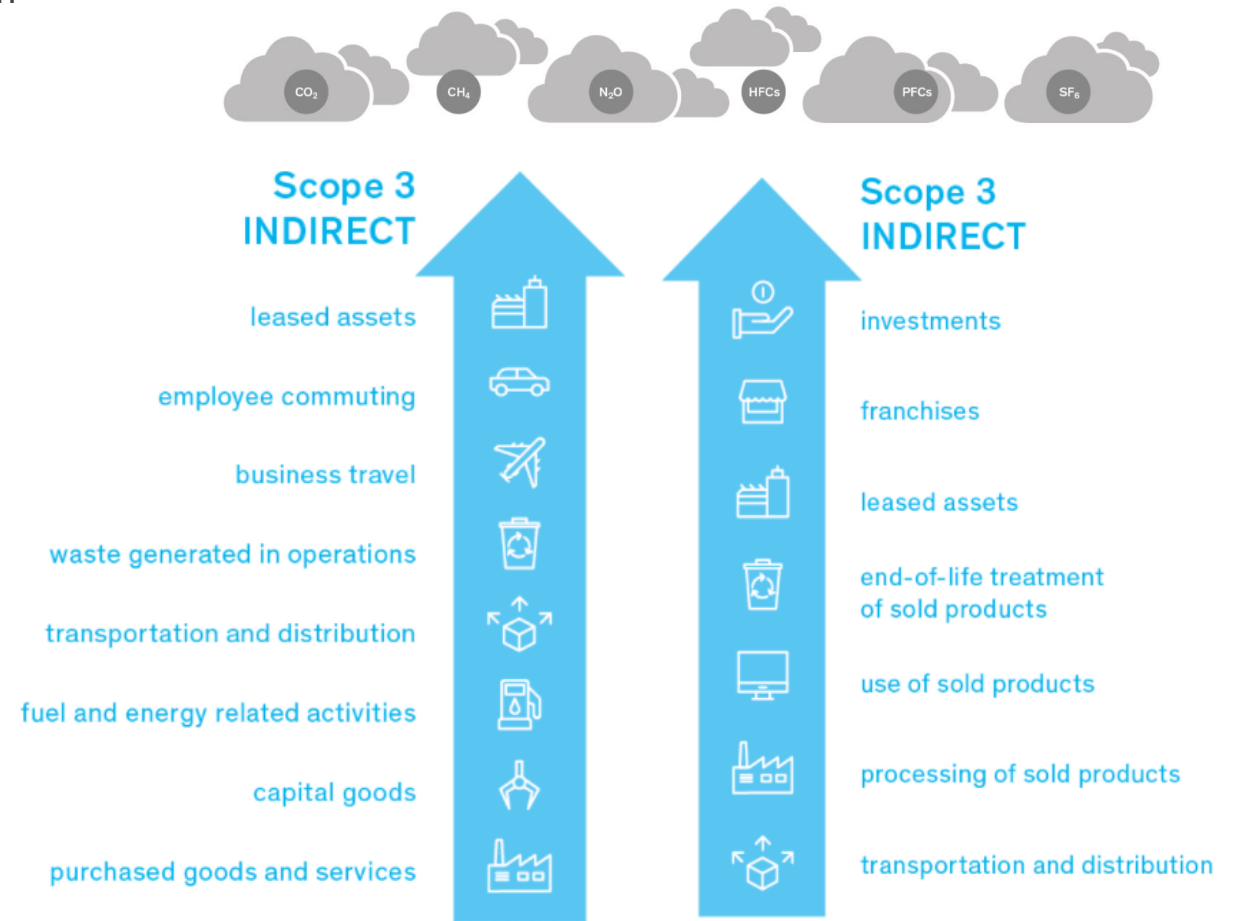
Further challenges:

Scope 2:

- Find an efficient way to collect the energy consumption of all relevant subsidiaries in kWh regularly.

Scope 3:

- Identify the relevant factors in scope 3 (upstream/downstream) and how to measure them without creating a giant paper tiger.



QUESTIONS?

