Interreg
Danube Transnational Programme
ENERGY BARGE

ENERGY BARGE

Building a Green Energy and Logistics Belt

Project Code: DTP1-175-3.2

Output Evidence Document

Output 3.1

Danube transnational biomass and bioenergy atlas

June 2018

Project co-funded by European Union funds (ERDF)

For the implementation of the project "ENERGY BARGE – Building a Green Energy and Logistics Belt" a subsidy is awarded from the European Regional Development Fund under the Danube Transnational Programme.

Table of contents

Figures

I About the ENERGY BARGE project

The Danube region offers a great potential for green energy in the form of biomass. The main objective of ENERGY BARGE is to exploit this potential in a sustainable way, considering the Renewable Energy Directive 2009/28/EC, thereby increasing energy security and efficiency in the Danube countries. The project brings together key actors along the entire value chain, biomass companies and Danube ports as well as relevant public authorities and policy stakeholders. The project maps value chains and facilitates the market uptake of biomass, supports better connected transport systems for green logistics and provides practical solutions and policy guidelines. The Agency for Renewable Resources (FNR) coordinates the ENERGY BARGE project consortium with fourteen partners from Austria, Bulgaria, Croatia, Germany, Hungary, Slovakia and Romania.

Project coordinator

Agency for Renewable Resources / Fachagentur Nachwachsende Rohstoffe e.V.	FNR	Germany

Project partners

BioCampus Straubing GmbH	BCG	Germany
Deggendorf Institute of Technology	DIT	Germany
Austrian Waterway Company	VIA	Austria
Port of Vienna	PoVi	Austria
Bioenergy2020+ GmbH	BE2020	Austria
International Centre of Applied Research and Sustainable Technology	ICARST	Slovakia
Slovak Shipping and Ports JSC	SPaP	Slovakia
National Agricultural Research and Innovation Center	NARIC	Hungary
MAHART-Freeport Co. Ltd.	MAHART	Hungary
International Centre for Sustainable Development of Energy, Water and Environment Systems	SDEWES Centre	Croatia
Public Institution Port Authority Vukovar	PoVu	Croatia
Technology Center Sofia Ltd.	TCS	Bulgaria
Romanian Association of Biomass and Biogas	ARBIO	Romania
Federation of owners of forests and grasslands in Romania	Nostra Silva	Romania

II About this document

This report corresponds to "Output 3.1 - Danube transnational biomass and bioenergy atlas". It has been prepared by:

Due date of deliverable:	2018-06-30
Actual submission date:	2018-06-30
Start date of project:	2017-01-01
Duration:	30 months

Work package	WP3
Output	O3.1
Lead contractor for this output	BCG, DIT
Editor(s)	Ann-Kathrin Kaufmann (BCG), Anne Weinfurtner (DIT)
Quality reviewer	Birger Kerckow, FNR

Version	Date	Author(s)	Reason for modification	Status
1.0	2018-06-15	Ann-Kathrin Kaufmann, Anne Weinfurtner	Draft evidence document	Completed
2.0	2018-06-29	Ann-Kathrin Kaufmann	Final document after QAM assessment	Completed

1 Background

ENERGY BARGE aims at exploiting the Danube macroregion's bioenergy potential to increase energy security and diversification of energy sources by establishing secure, efficient and sustainable bioenergy supply chains along the river. To this end, a holistic view on the bioenergy market and underlying value and supply chains is needed. Given national and regional disparities in theoretical, geographical and market potential for bioenergy, deployment, public support, and also cooperation between private and public actors, it is necessary to identify levers for tapping potential and options for market actor cooperation, business development and market uptake.

A theoretical model designed to increase the market uptake of bio-based feedstock for both material and energetic (ideally cascading) use in the Danube region and thus to address the objectives also set out in the EU Strategy for the Danube Region (EUSDR) is a concept called "Green Energy and Chemistry Belt" (see Figure 1). It was developed by the BioCampus Straubing GmbH (Project Partner 1) and aims at using the Danube River as a natural biomass corridor and sustainable transport axis for biomass. The underlying principle follows the logic of "local harvesting – decentral processing into more transport-worthy states (e.g. oils, pellets, liquids) – central refinement or end use", so that added value creation can mainly stay in rural areas along the Danube. This concept forms the basic idea of the ENERGY BARGE project.

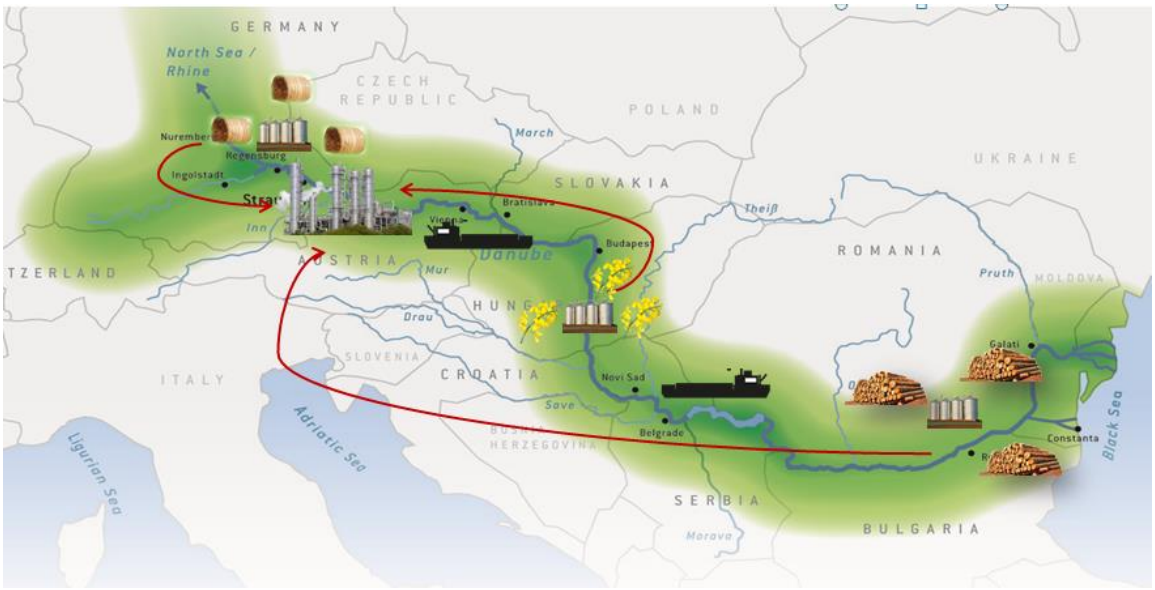


Figure 1: Green Energy and Chemistry Belt (Source: BioCampus Straubing GmbH, own visualization).

In order to reach the targets outlined above, Work Package 3 provides market-oriented mapping of the Danube region's value chains from biomass feedstock production and residues to energy generation from an integrated, transnational perspective, giving regional and transnational guidance for market development along the river (green bioenergy belt) and setting the stage for increased use of Danube logistics in the bioenergy sector. This will be achieved through a transnational market study compendium including biomass flows and sustainability aspects

(macro-perspective, Activity 3.1), business landscape mapping, case studies and identification of best practice locations for bioenergy value chain integration (micro-perspective, Activity 3.2).

2 General information

The Danube transnational biomass and bioenergy atlas is an online tool to improve energy security and efficiency. It is one of two ENERGY BARGE output tools visualizing the Danube biomass and bioenergy market, its actors and underlying supply and value chains. It will be integrated in the overall ENERGY BARGE modal shift platform for green bioenergy logistics in period 4 (www.energy-barge.eu). Until then, the atlas is not publicly accessible online but can be reached for review, testing and control purposes.

The access data are:

https://energy-barge.eu/

User: partner

Password: Danube2018

The atlas has been optimised for most common browsers (Mozilla Firefox, Microsoft Internet Explorer, Chrome).

The output will be, in accordance with the work plan in the Application Form, an integral part of the project's output 4.1., the final overall modal shift platform for green bioenergy logistics. The platform shall be a 'one-stop-solution' for all target groups, an interaction between the different tools is therefore of utmost importance. The finalization of the different tools is planned in consecutive steps, output 3.1 has been finalized with the end of period 3. However, the go-live of the modal shift platform including outputs 3.1. and 3.2. is planned for the end of period 4. Hence, a comprehensive transnational implementation plan for the online outputs including a dissemination strategy as well as detailed methodological and technical documentation will be provided in period 4.

For reasons of evidence provision and documentation, the finalized isolated elements of output 3.1 are documented and visualized via screenshots below.

The output may be accessed via the log-in data provided above for review and control purposes.

For a content-related overview, see the output factsheet.

3 Output summary

The atlas provides an intuitive and easily navigable overview on the transnational biomass and bioenergy market for relevant market actors. It covers the company landscape and related business contacts, land cover aspects of the Danube region and biomass feedstock trade flows between the Danube countries. The logic behind the atlas is to start with a comprehensive set of company entries but to allow for growth and development through the option for companies to register and to consequently provide a growing transnational market actor data base.

Its main elements are:

- a dynamic map view of the Danube region with zoom function based on open street map source
- a specific side bar menu with selection functions to search for information layers and icons, covering: biomass and bioenergy companies, institutions, clusters, research; import and export feedstock flow visualization of selected biomass types relevant for bioenergy production (flow directions, volumes, shares) per country and per year; biomass land cover layer based on CORINE spatial data; all functions and layers are visualized on the dynamic map and derive the information from a joint data base; mouse-over effects on the selection criteria provide detailed definitions and information about the single criteria
- a sub-page “biomass and bioenergy sector” with additional information and access to all relevant project deliverables including recommendations for market actors
- sub-pages “biomass and bioenergy companies” and “clusters, institutions and research” with registered companies, their basic information on biomass feedstock used/bioenergy products produced, as well as option to register a/o update company information
- Shared with the other output tools: landing page with general information

In the atlas, the results/deliverables from all project activities in WP 3 thus far are merged. The content was filed by all biomass partners of WP 3 (BE2020, FNR; ICARST, NARIC, SDEWES, TCS, ARBIO, Nostra Silva), reviewed by the logistics partners and merged and prepared for output utilization by WP leader BCG. DIT was responsible for programming, visualization and data management including safeguarding of data protection regulations and compilation of terms of use.

4 Output evidence

The following section provides evidence of the finalized output "Danube transnational biomass and bioenergy atlas". This evidence is presented in the form of exemplifying screenshots taken from the portal on which the output tool is presented (ENERGY BARGE modal shift platform, www.energy-barge.eu, 2018).

The following elements of the output are visualized with exemplifying screenshots:

- Joint landing page
- Atlas map view, several versions of layer selections and zoom levels (companies, filtered by product groups, institutions, feedstock flows direction version, land cover)
- Company register view
- Company registration form
- Terms of use

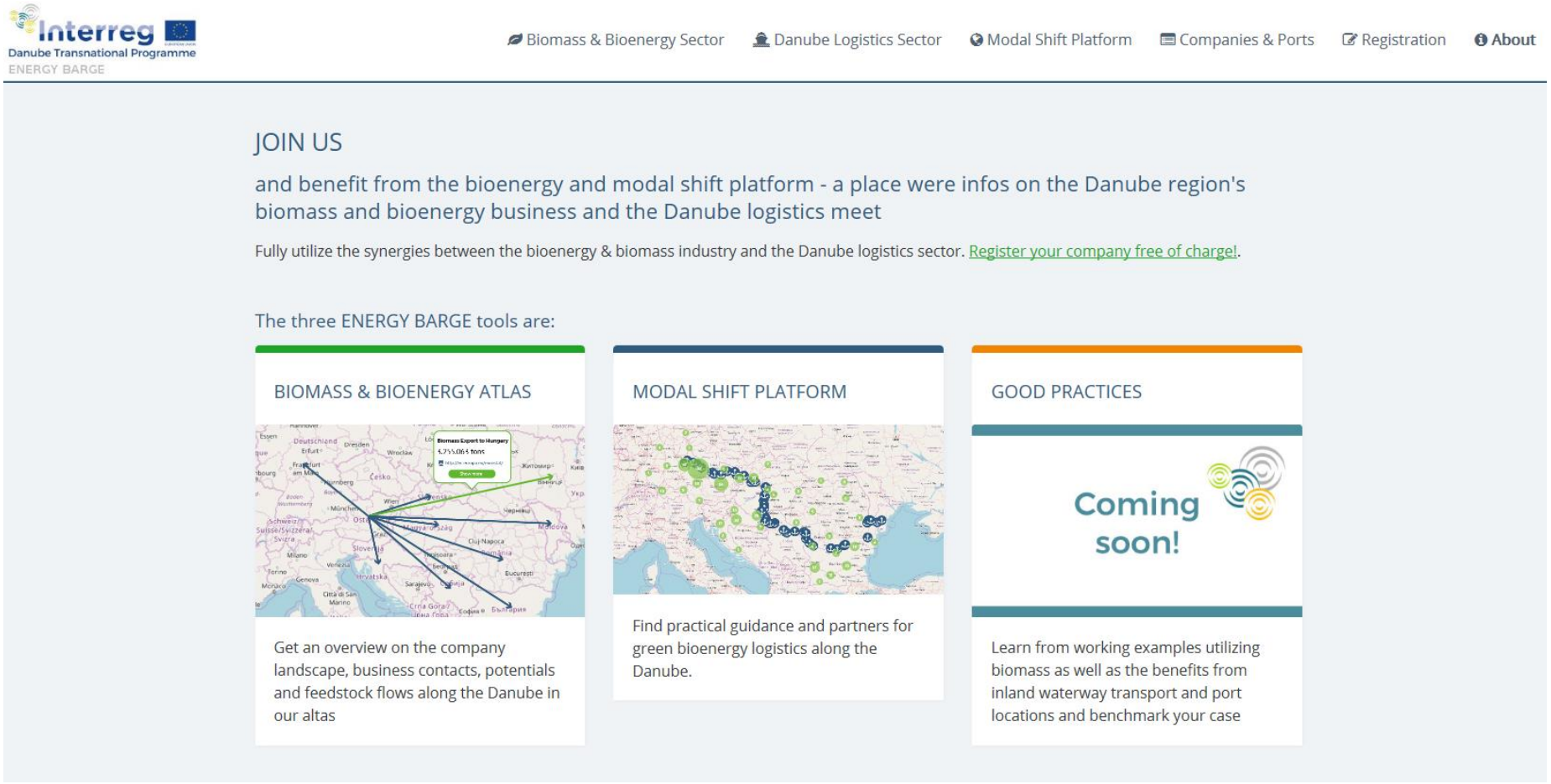


Figure 2: Joint landing page, part 1, www.energy-barge.eu

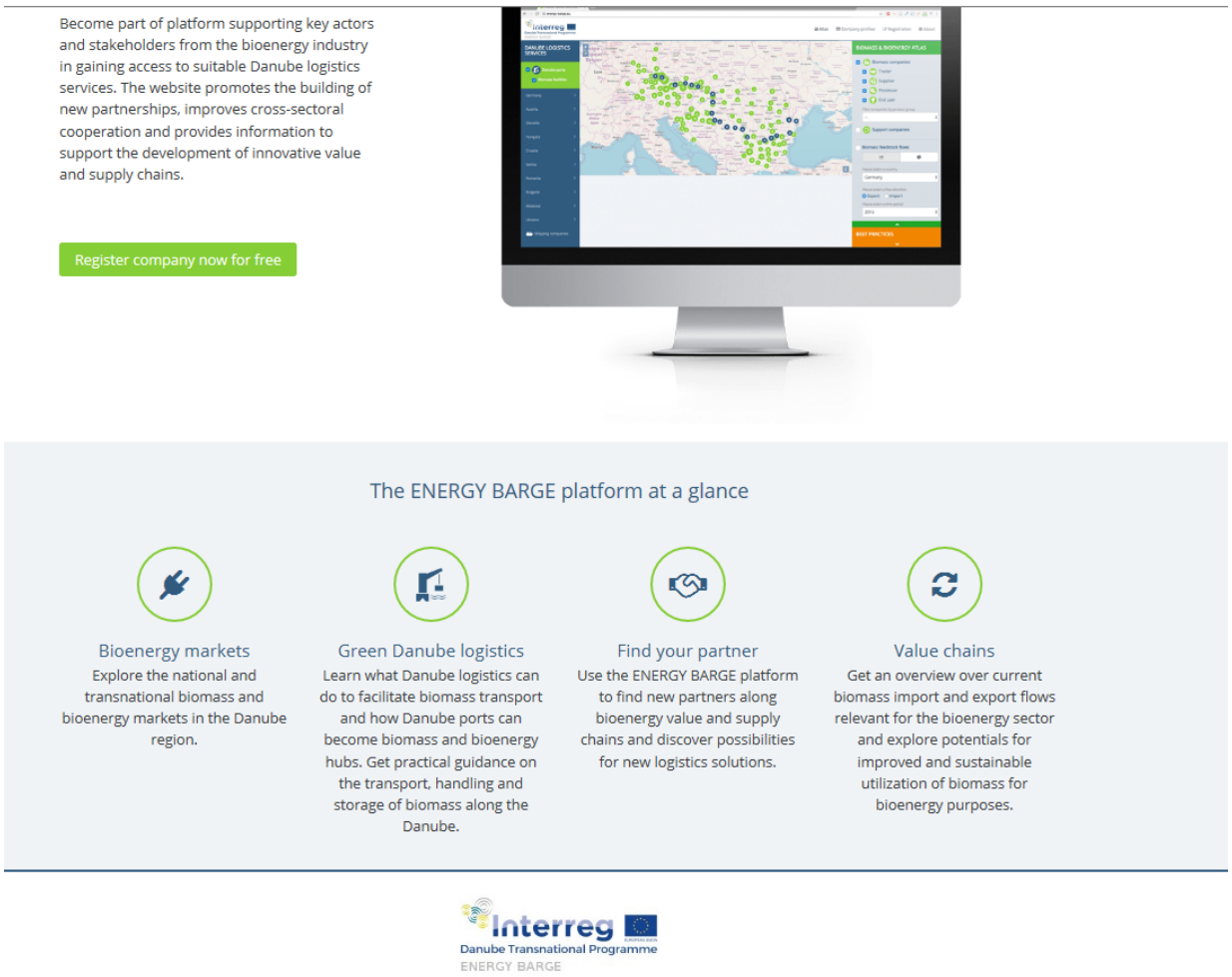


Figure 3: Joint landing page, part 2

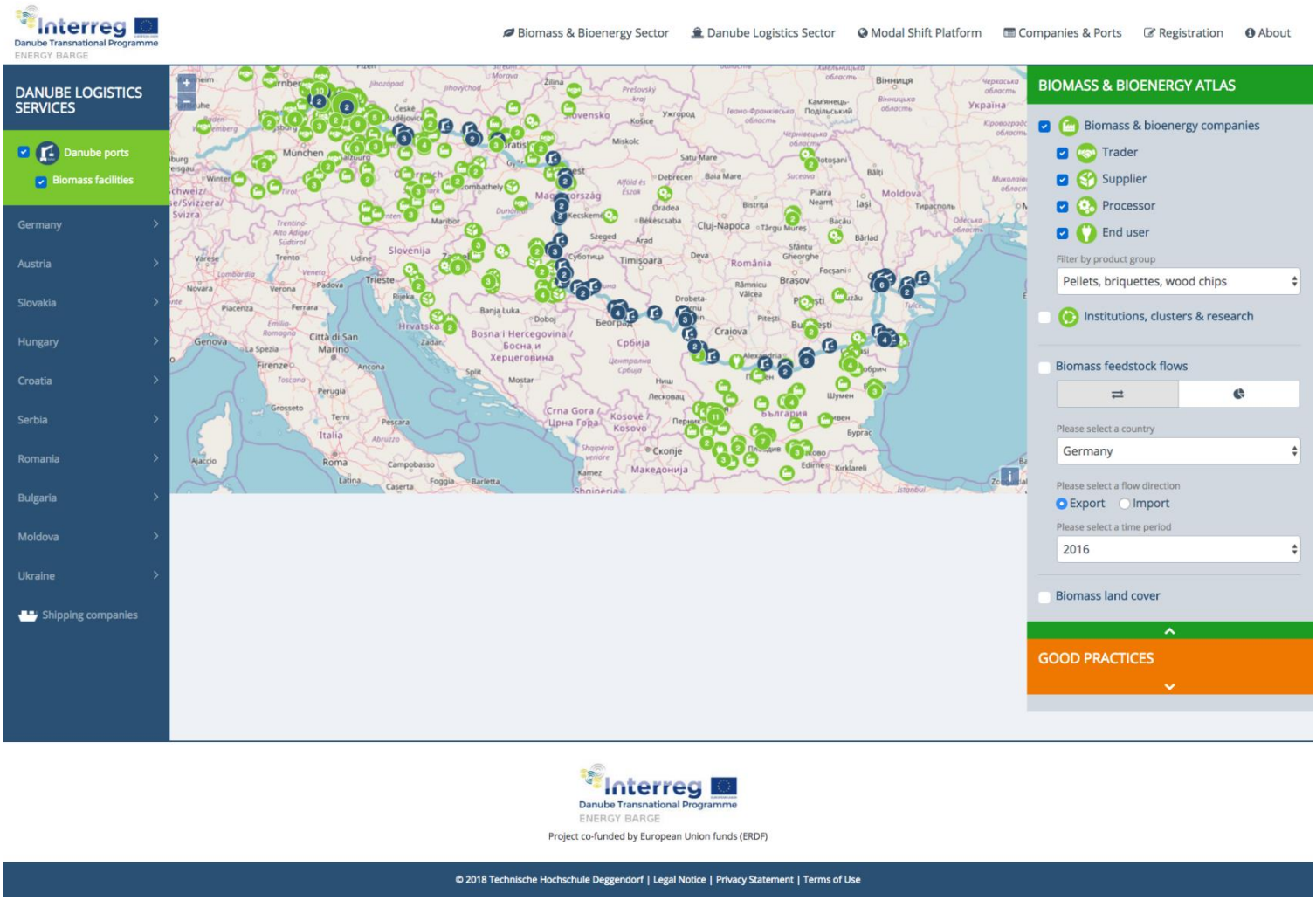


Figure 4: Atlas map view, minimum zoom, layer "biomass and bioenergy companies" covering all company types selected, product group "pellets" selected.

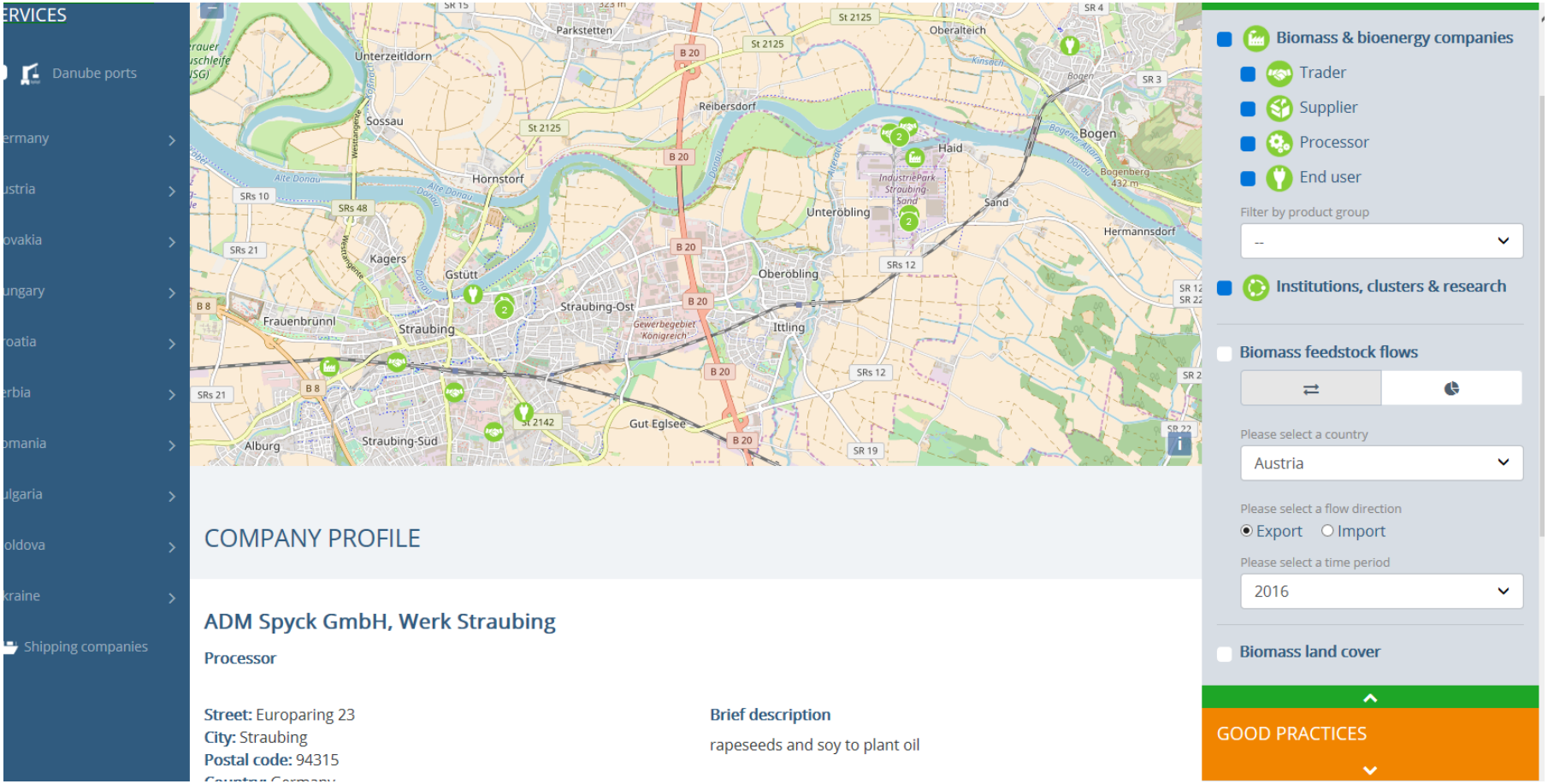


Figure 5: Atlas map view, zoom to city of Straubing, layer "biomass and bioenergy companies" covering all company types selected, "institutions" selected, company profile of ADM selected

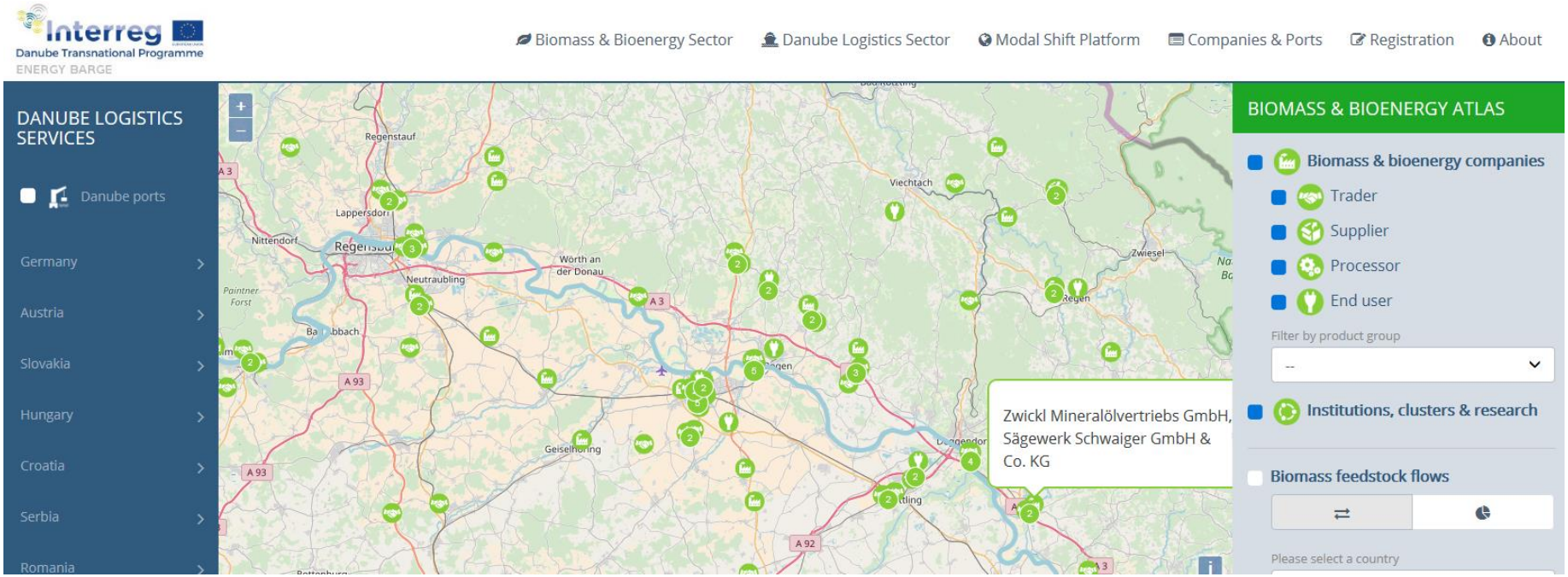


Figure 6: Atlas map view, zoom to Lower Bavarian Danube level, "biomass and bioenergy companies" covering all company types selected, "institutions" selected, Pop up info on conglomerate of two companies selected (Link to company profiles selectable in white box).

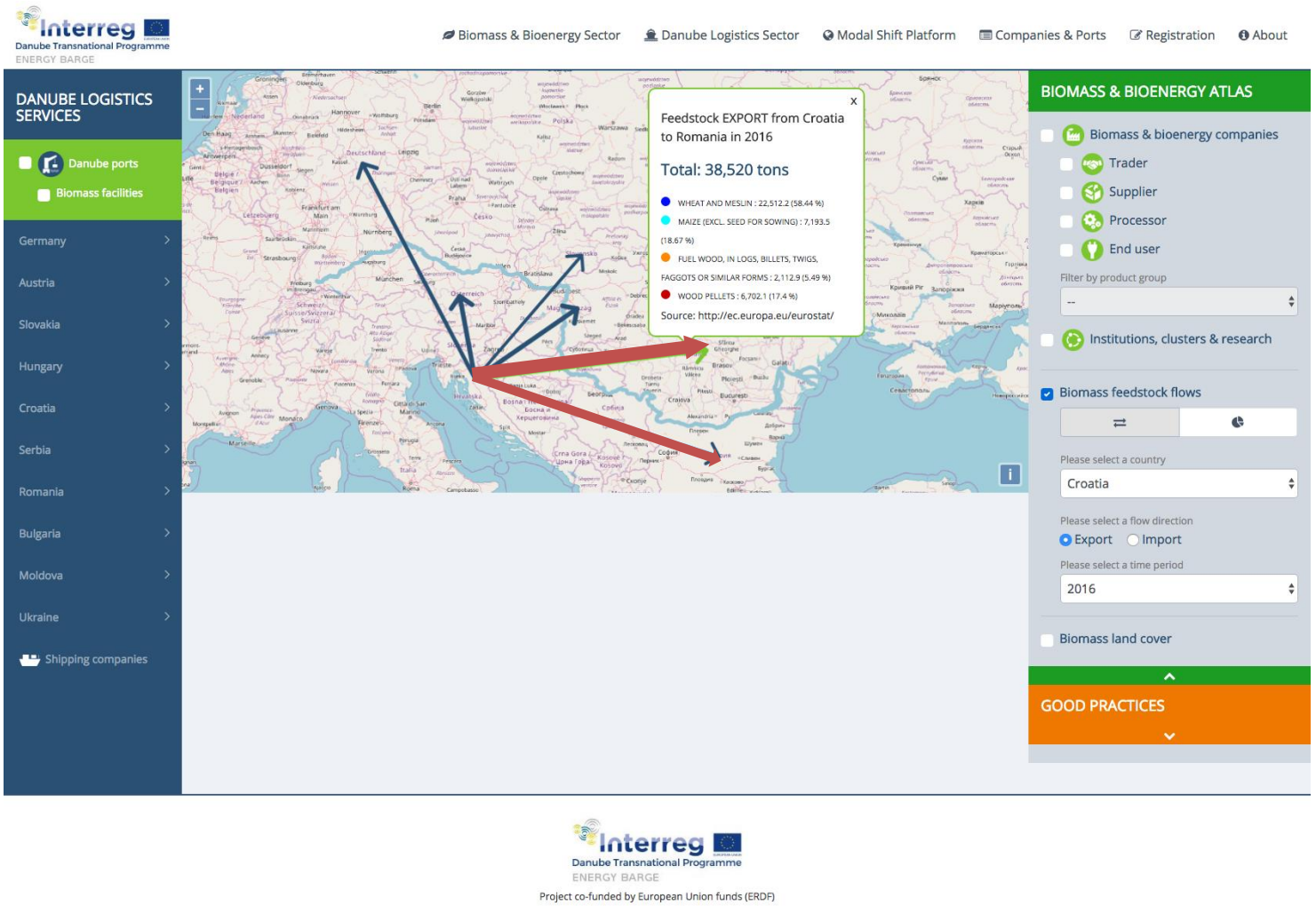
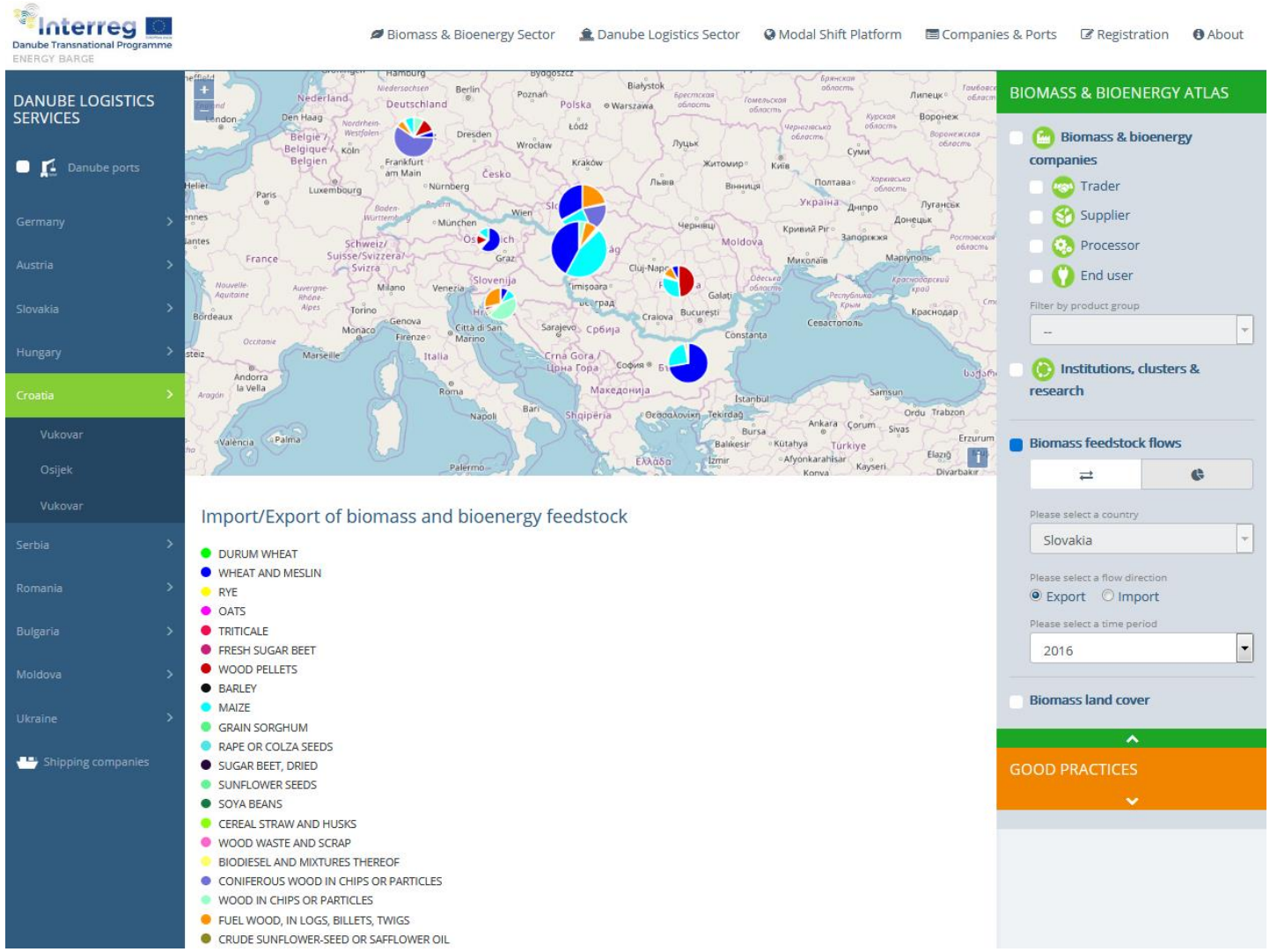


Figure 7: Atlas map view, minimum zoom, flow direction visualization, export of defined biomass from Croatia in 2016, detail selection: Romania.


Interreg
Danube Transnational Programme
ENERGY BARGE
Biomass & Bioenergy Sector
Danube Logistics Sector
Modal Shift Platform
Companies & Ports
Registration
About
DANUBE LOGISTICS SERVICES
Danube ports
Germany
Austria
Slovakia
Hungary
Croatia
Vukovar
Osijek
Vukovar
Serbia
Romania
Bulgaria
Moldova
Ukraine
Shipping companies
Import/Export of biomass and bioenergy feedstock
DURUM WHEAT
WHEAT AND MESLIN
RYE
OATS
TRITICALE
FRESH SUGAR BEET
WOOD PELLETS
BARLEY
MAIZE
GRAIN SORGHUM
RAPE OR COLZA SEEDS
SUGAR BEET, DRIED
SUNFLOWER SEEDS
SOYA BEANS
CEREAL STRAW AND HUSKS
WOOD WASTE AND SCRAP
BIODIESEL AND MIXTURES THEREOF
CONIFEROUS WOOD IN CHIPS OR PARTICLES
WOOD IN CHIPS OR PARTICLES
FUEL WOOD, IN LOGS, BILLETS, TWIGS
CRUDE SUNFLOWER-SEED OR SAFFLOWER OIL
BIOMASS & BIOENERGY ATLAS
Biomass & bioenergy companies
Trader
Supplier
Processor
End user
Filter by product group
Institutions, clusters & research
Biomass feedstock flows
Please select a country
Slovakia
Please select a flow direction
Export
Import
Please select a time period
2016
Biomass land cover
GOOD PRACTICES

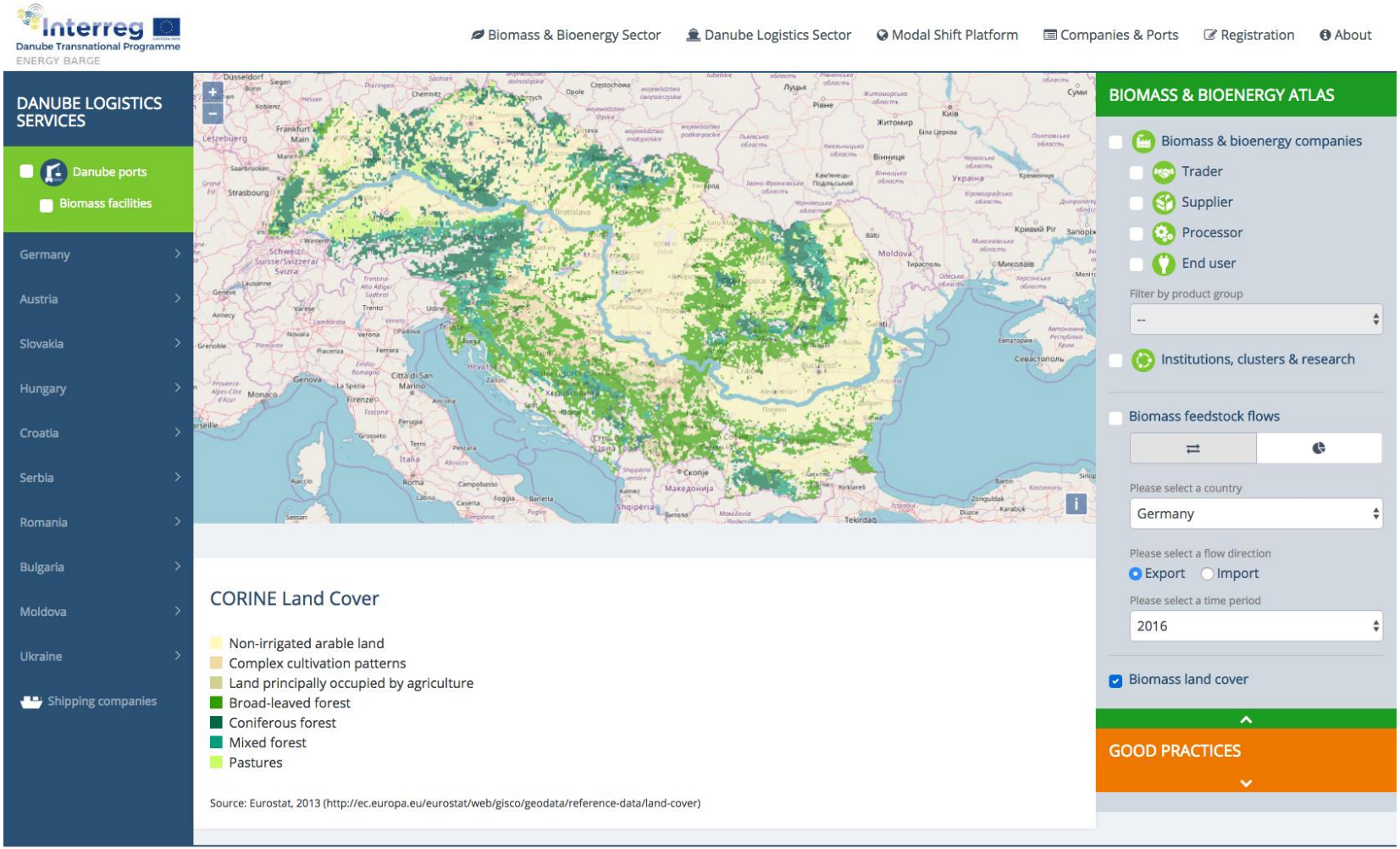


Figure 8: Map view, minimum zoom, biomass land cover based on selected CORINE criteria.

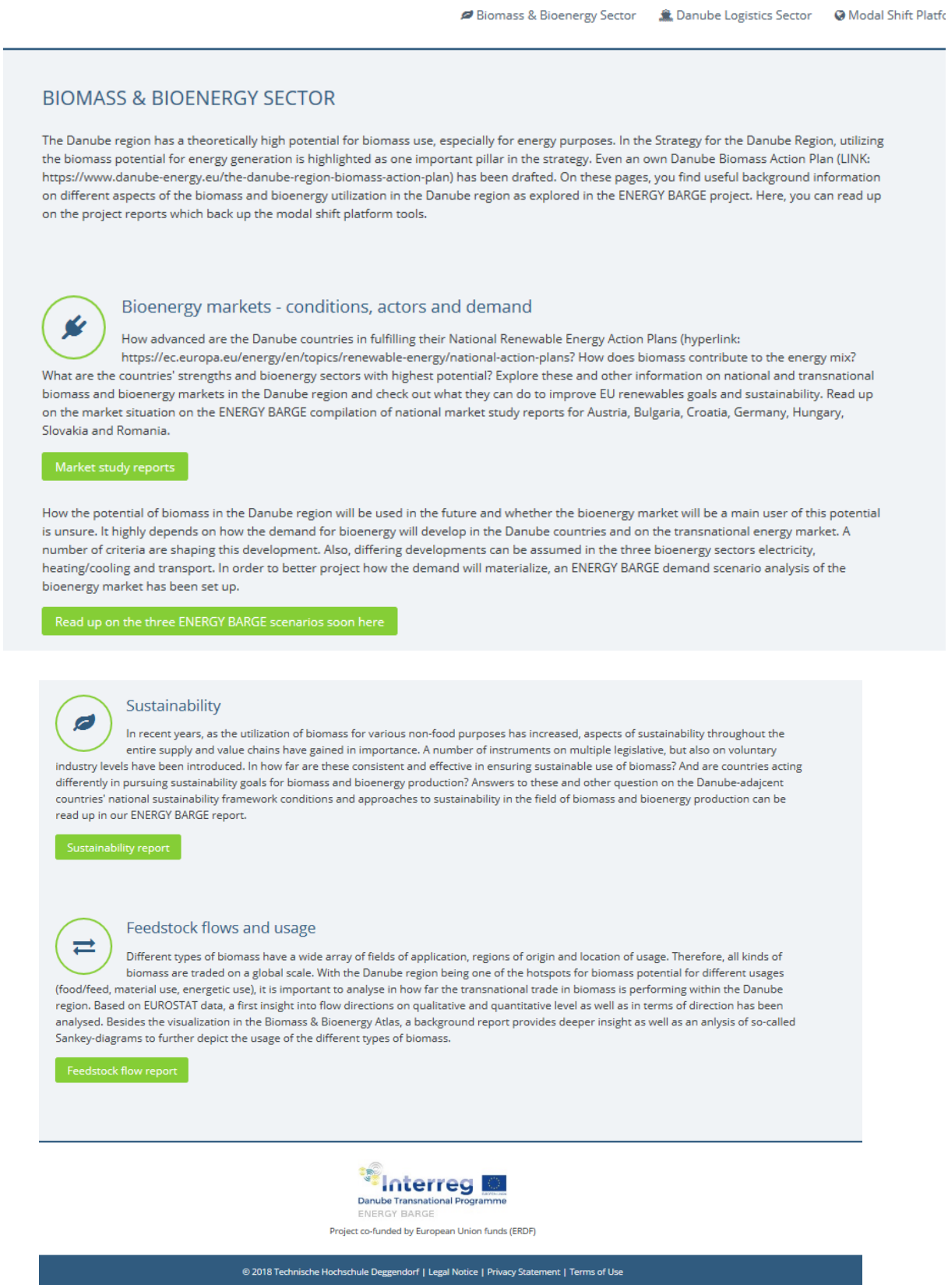
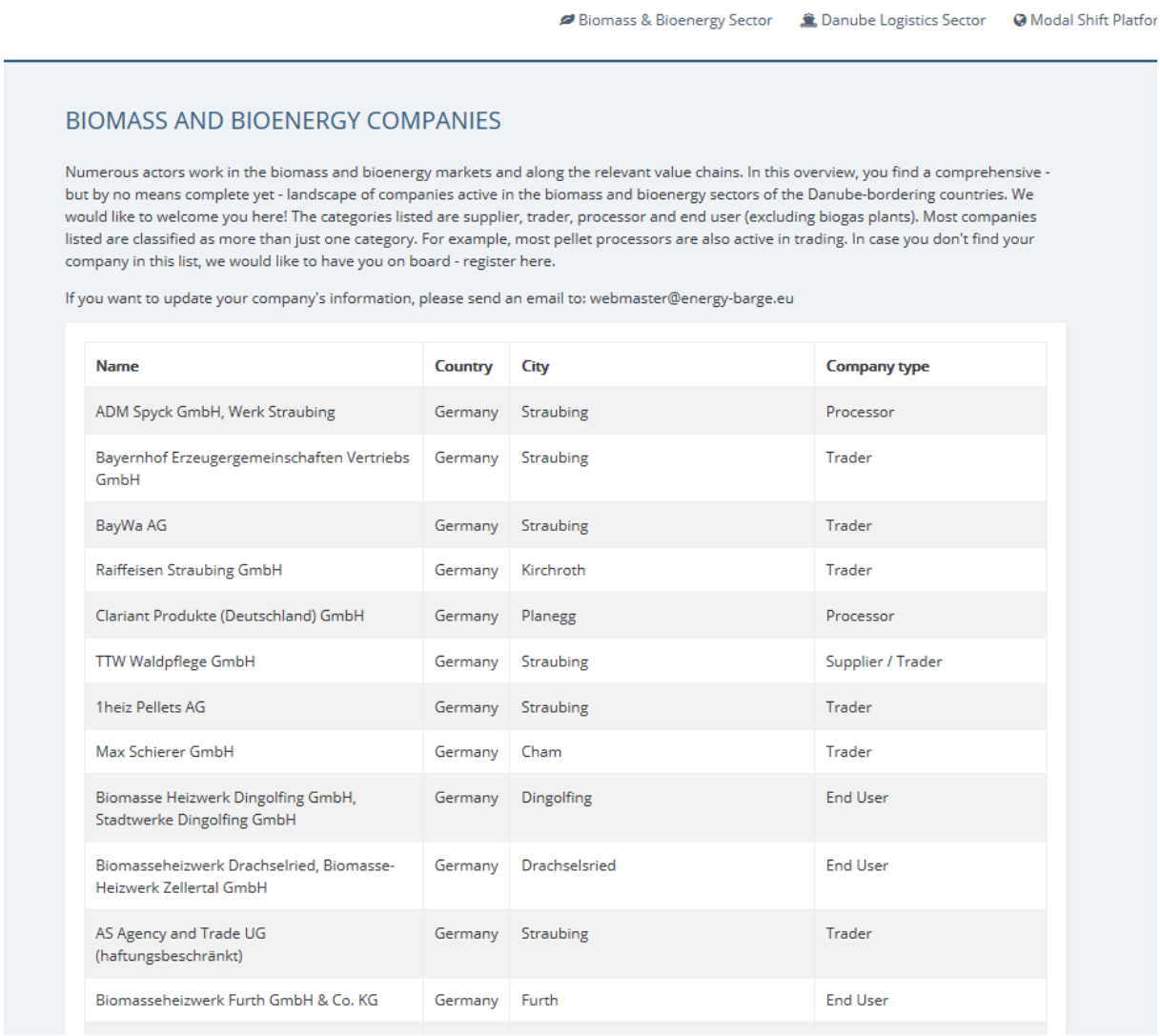


Figure 9: Subpage "Biomass and bioenergy sector" with supporting information and access to reports



Biomass & Bioenergy Sector Danube Logistics Sector Modal Shift Platfor

BIOMASS AND BIOENERGY COMPANIES

Numerous actors work in the biomass and bioenergy markets and along the relevant value chains. In this overview, you find a comprehensive - but by no means complete yet - landscape of companies active in the biomass and bioenergy sectors of the Danube-bordering countries. We would like to welcome you here! The categories listed are supplier, trader, processor and end user (excluding biogas plants). Most companies listed are classified as more than just one category. For example, most pellet processors are also active in trading. In case you don't find your company in this list, we would like to have you on board - register here.

If you want to update your company's information, please send an email to: webmaster@energy-barge.eu

Name	Country	City	Company type
ADM Spyck GmbH, Werk Straubing	Germany	Straubing	Processor
Bayernhof Erzeugergemeinschaften Vertriebs GmbH	Germany	Straubing	Trader
BayWa AG	Germany	Straubing	Trader
Raiffeisen Straubing GmbH	Germany	Kirchroth	Trader
Clariant Produkte (Deutschland) GmbH	Germany	Planegg	Processor
TTW Waldpflege GmbH	Germany	Straubing	Supplier / Trader
1heiz Pellets AG	Germany	Straubing	Trader
Max Schierer GmbH	Germany	Cham	Trader
Biomasse Heizwerk Dingolfing GmbH, Stadtwerke Dingolfing GmbH	Germany	Dingolfing	End User
Biomasseheizwerk Drachselried, Biomasse-Heizwerk Zellertal GmbH	Germany	Drachselsried	End User
AS Agency and Trade UG (haftungsbeschränkt)	Germany	Straubing	Trader
Biomasseheizwerk Furth GmbH & Co. KG	Germany	Furth	End User

Figure 10: Biomass and bioenergy company register: overview on all currently registered companies (548) (here: small section depicted)

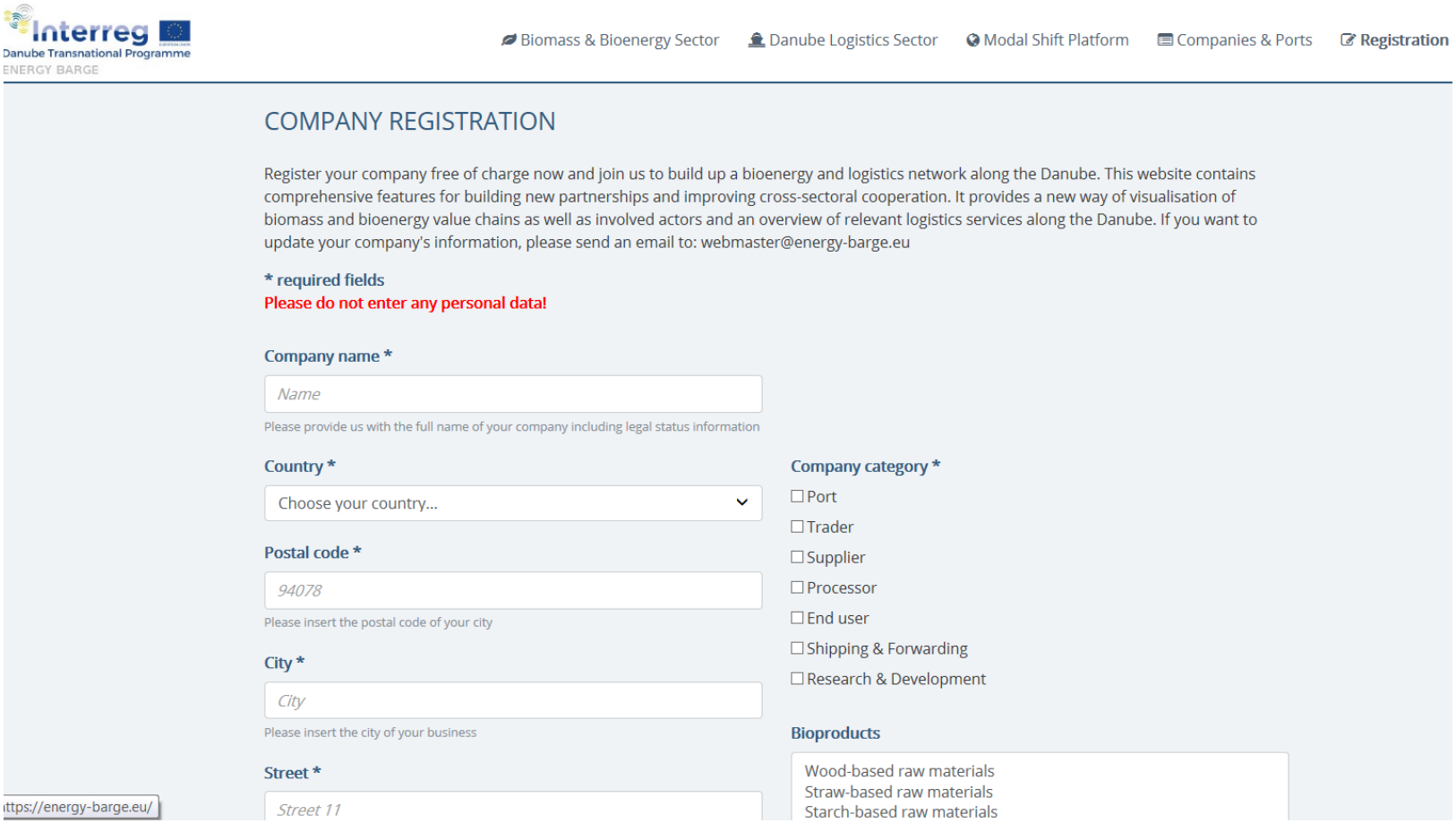


Figure 11: Company registration form

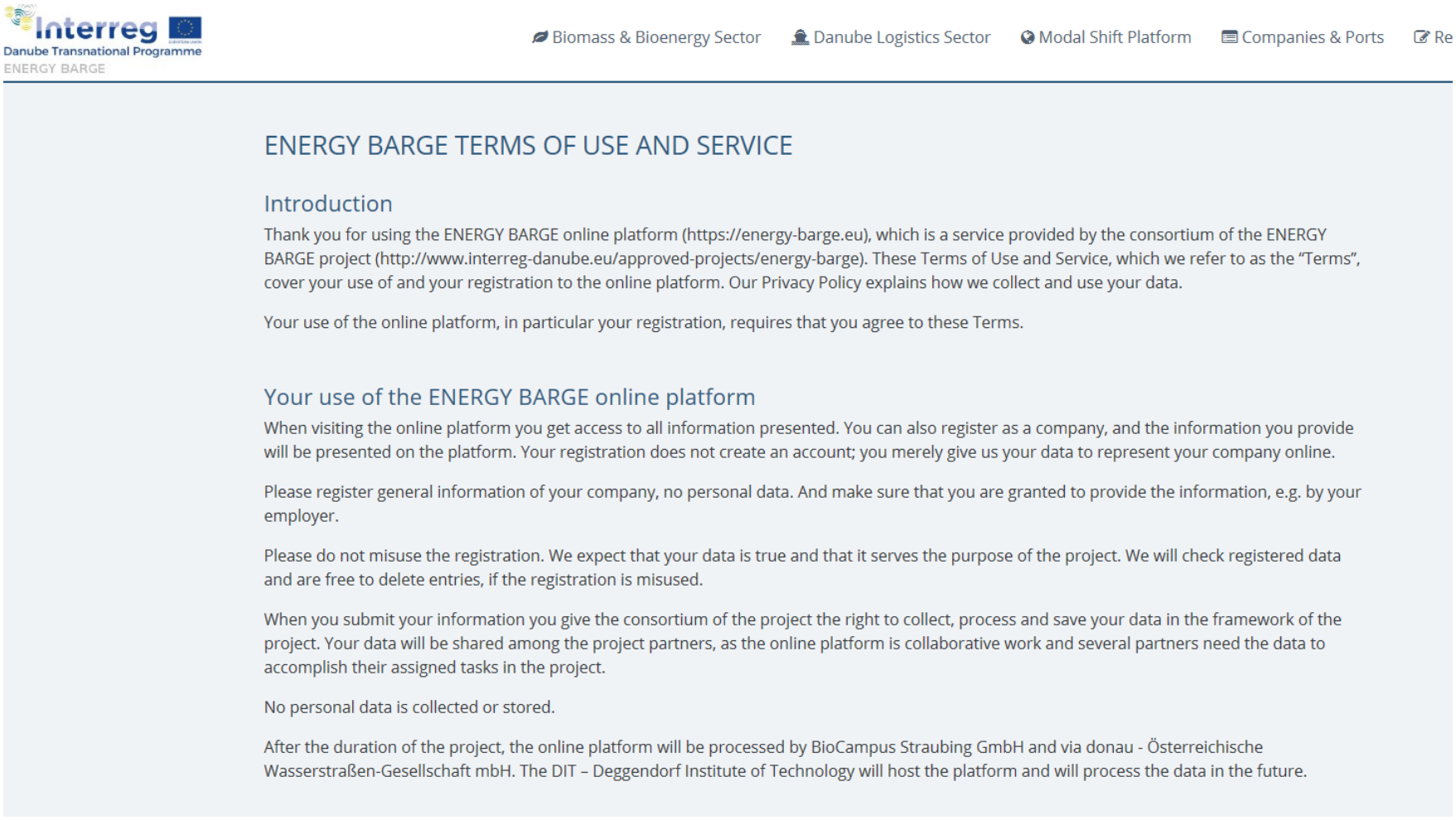


Figure 12: Section of the platform's terms and conditions

Interreg
Danube Transnational Programme
ENERGY BARGE

Contact

BioCampus Straubing GmbH
Ann-Kathrin Kaufmann

E-mail: ann-kathrin.kaufmann@biocampus-straubing.de

http://www.interreg-danube.eu/energy-barge

Project co-funded by European Union funds (ERDF)