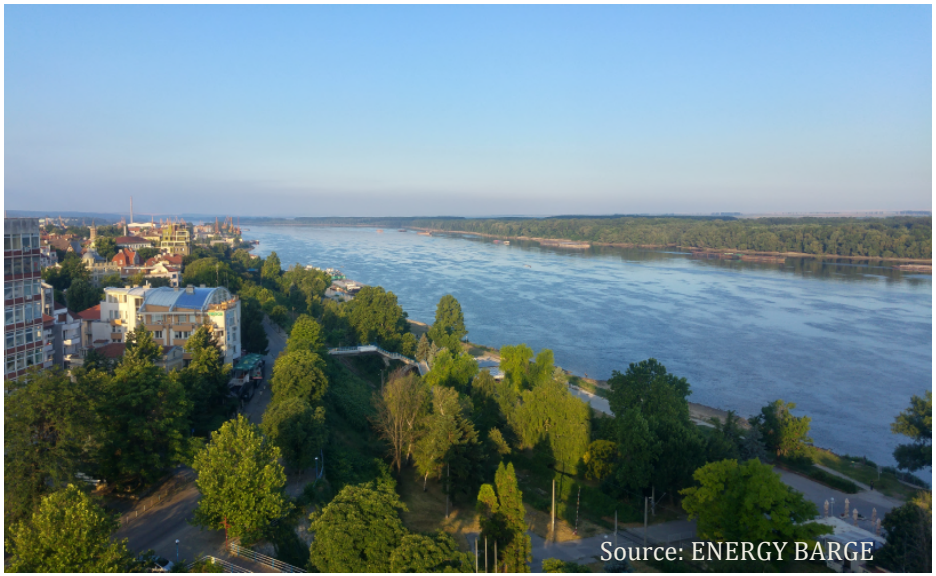
INFO BROCHURE

Transnational Policy Recommendations



Building a Green Energy and Logistics Belt

www.interreg-danube.eu/energy-barge

Project co-funded by European Union funds (ERDF)

Biomass in the Danube Region

From the Black Sea to Northern Bavaria, the Danube connects many culturally and economically diverse regions. Driven by strong agricultural and forestry sectors, the Danube region offers the chance to mobilize large amounts of renewable resources. This creates the ability for the region to make significant contributions to Europe's green energy sector. With a navigable river at the heart of this far-stretching region, inland waterway transport (IWT) establishes the perfect basis for the economically viable transportation of biomass, as well as processed energy products made from biomass.

During the ENERGY BARGE project the national production capacities of feedstock types and bioenergy products, as well as their areas of application were analysed in order to map the overall potential of the sector. Table 1 on the following page shows the results of this analysis and portrays the most promising feedstocks and bioenergy products for each country that was represented in the project consortium.

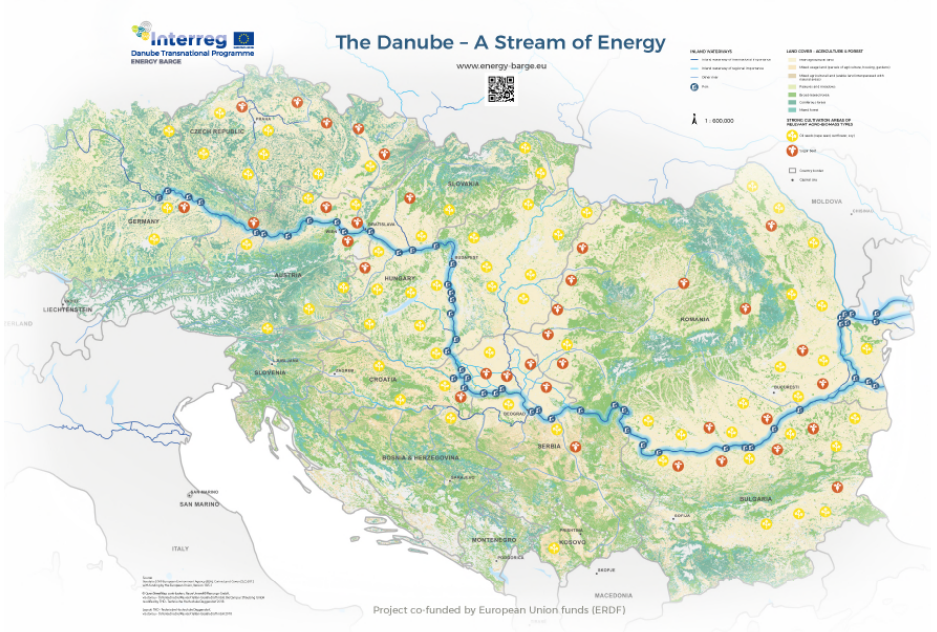


Figure 1: Map of the Danube region showing forest and agricultural areas.

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Table 1: Overview of the most promising biomass feedstock types, bioenergy products, and fields of application in each ENERGY BARGE project partner nation (based on: ENERGY BARGE D3.1.1)

Country	Main Feedstock Types	Bioenergy products	Applications
Austria	Residual forest wood, sawmill by-products, short rotation coppice	Wood chips, pellets, briquettes	heating, co-firing, micro-grids
Bulgaria	Residual forest wood, fire-wood, rapeseed, soy beans, grain straw, miscanthus	Wood chips, pellets, biodiesel, bioethanol	Heating, transportation, chemical industry
Croatia	Firewood, residual forest wood, wheat straw, corn stover	Pellets/briquettes	CHP, transportation
Germany	Residual forest wood, grain straw, manure	Liquid and solid biofuels	Heating, transportation, CHP
Hungary	Agricultural by-products, energy crops, organic wastes	Liquid and solid biofuels, bio gas	Local heat & power generation
Romania	Residual forest wood, fire-wood, waste, agricultural residues	Pellets, liquid biofuels	Heating, electricity, transportation
Slovakia	Residual forest wood, grain straw	Pellets, wood chips, lignocellulosic biofuels	Heating, transportation

The ENERGY BARGE project aims to advance the development of these potentials in green energy production and the subsequent logistics throughout the Danube region on a transnational basis. **The ultimate transnational goal is to promote the modal shift of biomass transport towards the Danube River.**

Essential to this goal are the ports, biomass providers, traders, and end-users in the Danube region. Yet, without a supportive policy framework the progress towards exploiting the full potential that green biomass logistics on the Danube has to offer may prove to be more strenuous than it should be. **Therefore, the ENERGY BARGE consortium set out to generate policy recommendations for all project partner countries located on the Danube river, in order to streamline policy actions throughout the region towards promoting IWT of biomass and biomass energy products, in a transnational scope.** This brochure presents the results of this process.

Austria

The upgrading of residues, co-products and waste to biofuels will be important in the upcoming years since it is seen as high potential for the future extension of the biomass base. In this context the co-production of electricity and/or material products such as biochar is of great interest in order to ensure the most efficient use of resources. Hence, future legislation and policies should support research and development in this area, increase public awareness on resource efficiency and aim to influence consumers towards valuing commercial goods with a prolonged product life. Policy-makers should stress the importance of regularly updated technology roadmaps and long-term monitoring of current events and trends.

To ensure the successful development of a sustainable bioeconomy **it is of utmost importance to establish transparency, continuity and predictability of legislation and policies.** This would significantly contribute to the long-term stabilisation of the sector.

Austria is leading in waterway management and able to offer a broad portfolio in IWT related services. On an international level Austrian policy-makers should therefore encourage and assist other Danube riparian countries to adhere to international agreements regarding fairway maintenance (e.g. European Agreement of Main Inland Waterways of International Importance (AGN)), continuously upgrade their port infra- and superstructure and foster harmonisation of administrative procedures.

In detail, **the maintenance of a strong waterway infrastructure is paramount** for IWT to pose a reliable mode of transportation for the development of a strong bioeconomy**.** This would allow for larger freight volumes per vessel and lower shipping costs and thus increase the overall competitiveness of IWT.

High reliability and performance of waterway and port infra- & superstructure must be supported transnationally. Additionally, lengthy and inflexible administrative processes are a significant competitive disadvantage for IWT.

Harmonizing administrative processes and eliminating administrative barriers in all Danube riparian countries must be a mid-term objective. This will ensure seamless transport chains and increase competitiveness to road and rail transport.

Bulgaria

Currently, no specific state policy regarding the production and consumption of energy from biomass is in place. It is therefore recommended that all responsible state actors (Ministry for Agriculture and Food, Ministry of Energy, Ministry of Finance, Ministry of Environment and Water and other affiliated agencies) elaborate a strategy for the use of biomass for energy production with a corresponding regulatory framework. The strategy should be accompanied by the development and implementation of specific measures in order to encourage biomass production and its use for energy production (e.g. financial or tax incentives). National policy should also have and active role in promoting modern technologies (e.g. through information campaigns and through financial incentives) in order to stimulate the transition towards more efficient heating installations for family homes. Furthermore, regulations for mandatory use of energy-efficient systems and technologies can be introduced. This should apply to businesses and private households alike.

The main obstacles along the biomass-for-energy supply chain in Bulgaria include: complicated logistics, poor infrastructure, outdated equipment and a lack of bioenergy producers, such as district heating and cogeneration plants. **Therefore the Bulgarian government needs to invest in the aforementioned areas considerably.**

Concerning the integration of IWT and ports involved in the relevant biomass supply chains the following measures are mandatory:

- Navigability of the Danube needs to be ensured. The responsible Executive Agency for Exploration and Maintenance of the Danube River must receive the funding and support it needs to carry out this obligation.
- Intermodal transhipment capacities need to be expanded.
- The Ministry of Transportation needs to set up specific rules, ensuring access and the transparency of services provided by ports in order to rule out competitive disadvantages.
- The extension of existing and the construction of new storages in ports should be funded or incentivised.

Croatia

Since wood biomass is predominant in Croatia, legislation and policies should focus on this type of biomass. In order to increase the energetic use of wood biomass, **it would be highly beneficial to promote and facilitate combined heat and power (CHP) projects**. Currently, CHP projects are granted subsidies for energy production during their planning stage. Subsidies are limited by a certain production quota. The granted subsidies currently are not bound to the completion of the project within a certain time frame. Enforcing a temporal limit on project completion would free up already assigned quotas and enable other projects to be realized in case the original projects are not making substantial progress. A more transparent and liberal wood market (currently offered by the nationally owned foresting company with long-term contracts and occasional auctions) would benefit processors with a more secure supply. In light of this project, a support for establishing a biomass collection centre and the roles for intermodal logistic services based on the Danube would also extend the market (both for raw material and final products) significantly.

Establishing, maintaining and improving the conditions for safe and reliable navigation on inland waterways are mandatory tasks of the state. This aspect needs to be analysed in particular with regard to the type of cargo and the expected increase in transport demand of both hazardous and all other types of cargo. The reliability of waterways is determined by the degree in which the waterway is able to meet the minimum requirements that must be fulfilled, in order to promote IWT as an economically viable mode of transportation. An increase in the share of river traffic in the transport services market can be achieved if this sector is integrated into the intermodal transport network. Certainly, it is one of the main prerequisites when considering raising the level of waterway reliability, construction of navigation safety facilities and in regard to investment in the modernization of existing port capacities, as well as for the construction of new port capacities. The launch of development cycles in Croatian river ports, the process of technological reconstruction of port facilities and supporting infrastructure and the connection of ports within main road and railway corridors, create preconditions for the development of the river traffic. A major role in this is also the system of river information services RIS, which forms the core of IT connectivity and electronic data exchange, backed up by other supporting online tools.

Germany

Germany's unique characteristic is that its Danube region not only provides an ample supply of biomass feedstock but also combines technologically advanced processing facilities with research institutions and other knowledge providers. **Yet, further research into sustainable biomass sourcing is needed to provide more economically viable methods and systems for resource mobilisation** (e.g. timber harvest residues, mobilization of wood from small private forests).

To ensure that IWT remains a viable and reliable option for biomass processors, the navigability of the Danube needs to be guaranteed even when considering extreme weather conditions (e.g. drought and ensuing low water levels). This starts at ensuring fairway conditions comparable to Austrian standards and extends to **providing ports with suitable technical equipment for lightering**. Specifically, the former lightering ports of Passau and Regensburg are currently not able to provide such services consistently. Funding programmes targeted at improving port infrastructure would allow ports to make the necessary investments, while also allowing biomass processors to secure their supply route via the Danube. Furthermore, as droughts and low water level periods are expected to become more common, the responsible waterway authorities must develop national resilience strategies and risk management tools for IWT and its stakeholders on a national and EU level.

To further promote the use of IWT, the different modes of transportation need to be compared based on their greenhouse gas emissions in relation to the amount of goods transported. When awarding public funds and subsidies, the more favourable modes of transportation should be primarily considered.

For the successful development of a biomass logistics sector in the Danube, the provision and distribution of reliable and accurate information is paramount. One of the experiences taken away from ENERGY BARGE was that information procurement proved to be a challenging task (e.g. biomass potentials, types, quantities and qualities of biomass and spatial data on biomass availability). In this field, authorities could step in as information providers and level the playing field for all stakeholders. Another opportunity to promote the exchange of information between actors and inform cargo owners regarding the benefits of IWT services, would be to establish forums like the ENERGY BARGE B2B meetings. Public authorities could act as facilitators.

Hungary

According to the current statement of the Deputy State Secretary for Agriculture, Hungary possesses a vast potential of unused biomass. **Without more active research and development work supported through the EU, this potential can be difficult to exploit in a way that generates higher added value for rural areas.**

It is important to note, without the introduction of E10 fuel, Hungary may unfortunately miss the opportunity to increase the use of biofuels in the period between 2021-2030 as the EU Renewable Energy Directive (RED II) freezes this at 2020 levels. Currently, the Hungarian Ministry of Innovation and Technology investigates the possibility of introducing E10 fuel. Concerning the use of biomass, this would be a welcomed decision. Feed materials and products from the national ethanol industry also could play an important role in the National Protein Feed Program.

The current subsidy system for energy production from biomass should be revised in order to take the environmental side effects of transportation of raw materials into account.

A strategy should be derived from priorities concerning biomass-based energy production units (district heating systems, combined heat and power systems) located close to ports.

Development of waterway connections (port and infrastructure) of state forestry companies as key suppliers of energy biomass should be considered as a strategic tool to promote the use of IWT for biomass transportation.

Elaborate a strategy which harmonises energy biomass consumption and production taking into consideration shipping distances and environmental impacts of transportation.

In the case of some major biomass-based energy producers, raw material supply is organised based on long distance road shipment, which results in increased emissions. Policy makers and authorities could control environment friendly energy biomass production and shipment via regulations and revision of subsidy systems.

Romania

During the project run-time it became clear that Romanian harbours possess a great potential for the further mobilisation of biomass for energy use. These potentials can be found mainly in forest biomass but also in agricultural biomass. To achieve this resource mobilization the following steps should be taken:

- Future policies and strategies must take the already existing technologies and types of biomass into account.
- Current Romanian legislation (Law No. 220/2008 for establishing the system to promote the production of energy from renewable energy sources) mainly focuses on the production of electricity from renewable energy sources. In order to utilise the full potential of biomass, the law must be expanded to encompass the promotion of heat production from bioenergy.
- In order to reliably and successfully establish combined heat and power production facilities, public/private partnership agreements should be pursued.
- Concerning forest biomass, clear regulations must be established that avoid competition for resources with other wood consuming industries (e.g. restricting the energetic use of forest biomass to certain diameter classes).
- Stakeholder engagement activities must receive funding in order to increase the demand for energy produced from biomass.

Developing ports as hubs for intermodal transport and processing of biomass can increase the use of IWT— especially for agriculture biomass. There is a large variety of biomass processing facilities, which are suitable for onsite location in ports. This would serve as an aid to optimise transport costs, while simultaneously achieving the goal of reducing greenhouse gas emissions. This solution will link feedstock sourcing with logistics and further processing via IWT.

Local administration can sustain the developments of industrial parks linked with port logistics. Port administration authorities should be decentralised in order to facilitate local initiatives.

Slovakia

In Slovakia, a substantial amount of the biomass used for energetic purposes is derived from wood. The swift implementation of EU directives and the introduction of incentives and subsidies for biomass use considering energy production was able to boost consumption in Slovakia.

In a move to ensure the sustainable use of biomass, the Slovak Parliament amended the legislation regarding renewable energy sources in order to clearly define biomass. Consequently, the use of non-residual forest wood for energetic purposes was outlawed. Two recommendations can be derived from this:

- Clear and precise legislation, supported by expert opinions is essential in order to setup clear rules with limited possibilities for future abuse. Taking into account experiences from other countries, stronger stakeholder involvement and consequent independent evaluation of legislation proposals is strongly recommended.
- Long term strategy and goals for renewable energy sources should be established. It should include national quantitative energy models; define precise strategic views in terms of targeted installed capacities and estimates of future costs in the form of subsidies.

Currently, the use of IWT for biomass transportation is very limited in Slovakia. Among the main reasons identified lie the relatively short total distance of navigable water ways (essentially limited to the Danube), the location of the Danube directly on the border (not ideal for domestic transportation) and the widely accepted view that biomass transport is not economically viable over longer distances. **Therefore research should be funded to identify options for the economically viable use of IWT and further potentials.**

Nonetheless, IWT should be considered as a more environmentally friendly mode of transportation. IWT should therefore become eligible for special environmental subsidies and/or support programmes.

The ENERGY BARGE Consensus

Throughout its lifetime, ENERGY BARGE offered many opportunities for stakeholders of the Danube logistics, biomass producer and biomass processor sectors to get in touch with one another and extensively discuss all relevant issues regarding policies and regulations throughout the region. This allowed certain ideas to be developed that are best tackled by a transnational approach involving the joint efforts of all Danube riparian states.

Concerning biomass feedstocks the Danube riparian states should cooperate to promote the use of residues, by-products and wastes while exploiting synergies and working on a transnational scale. Incentive programmes should be introduced to promote the mobilisation of these resources. In light of the renewed Renewable Energy Directive (RED II) this serves to contribute to the goal of using advanced biofuels, as the new RED plans to phase out 1st generation biofuels for transport. The shift from the old to the new RED has shown that during transition periods between strategic guidelines and directives a lot of uncertainties arise. These uncertainties are detrimental to the mid– and long-term planning of companies. Therefore policy-makers need to plan for ample transition periods, allowing for more secure economic planning and investment decisions. Another issue that could be identified was the still common practice of subsidising and incentivising the use of non-renewable resources. This practice needs to be stopped and harmonised across the EU. Instead, research and development of more efficient and sustainable biomass sourcing should be funded.

Regarding bioenergy logistics it is recommended to further simplify administrative processes in ports and reduce administrative barriers, which make IWT more complicated when compared to other modes of transport. Furthermore governmental bodies should step in as reliable providers of relevant information to businesses in the bioenergy and logistics sector along the Danube.

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