REKK
FOUNDATION FOR REGIONAL POLICY CO-OPERATION IN ENERGY AND INFRASTRUCTURE

DANUBE REGION strategy Energy

WWW.REKK.ORG

REKK POLICY BRIEF

07
2021

ANDRÁS VÉKONY, GÁBOR HORVÁTH

RENEWABLE TARGETS AND POLICIES IN THE TRANSPORT SECTOR OF THE DANUBE REGION

NATIONAL ENERGY AND CLIMATE PLANS IN THE DANUBE REGION

- The EU member countries of the Danube Region (DR) are committed to the RES-T target required by regulation, which is 14% by 2030. Despite the trend of steadily increasing GHG emissions in transportation, all DR member states project emission reductions by 2030 compared to 2018 in their WAM (with additional measures) scenarios. At the same time, energy consumption is also expected to decrease, except for Czechia, Hungary, and Romania, suggesting that the latter three countries are rather optimistic about being able to decouple demand (and energy consumption) growth and GHG emissions.

- Almost all EU countries encourage electric vehicle penetration through the development of charging networks, purchase subsidies and allowances for EVs. Likewise, biofuel mandates are highly widespread, and support for railway development is also considerable, such as development of bicycle infrastructure.

- Several areas and measures are still missing, and best practices should be further encouraged, e.g. only Austria and Slovenia include pedestrian infrastructure in plans for non-motorised transport modes; only Austria, Germany and Slovenia have implemented CO_2-based taxation and pricing; only Slovakia, Bulgaria and in Czechia have an active regulation for blending of advanced biofuels; only a few reviewed countries have implemented consumer awareness campaigns.

This policy brief is part of a series based on the study National Energy and Climate Plans of the Danube Region commissioned by the Ministry of Foreign Affairs and Trade of Hungary in 2020.
Other policy briefs cover the electricity (2021/04), natural gas (2021/05) and heating and cooling (2021/06).
The Danube Region is an EU regional cooperation strategy covering 14 countries that lie in the reservoir of the Danube, comprising EU Member States (AT, BG, CZ, parts of DE, HR, HU, RO, SK and SI) and Energy Community contracting parties (BA, MD, ME, RS, parts of UA). This policy brief focuses on the EU member countries of the Danube Region since the strategic documents of the non-EU countries are less detailed regarding sustainable transport development.

CURRENT SITUATION AND TARGETS

Transport is the only upward trending sector in emissions over the last two decades. While the EU28 lowered total GHG emission by 18.6% between 2000 and 2018 transport emissions grew by 2.4%, becoming the second largest at 24%. Growth in the Danube Region has been faster than the EU average, except for Germany, which is the only DR country to register a reduction. In the period DR sectoral emissions grew by only 6.8% but removing Germany it jumps to 52%.

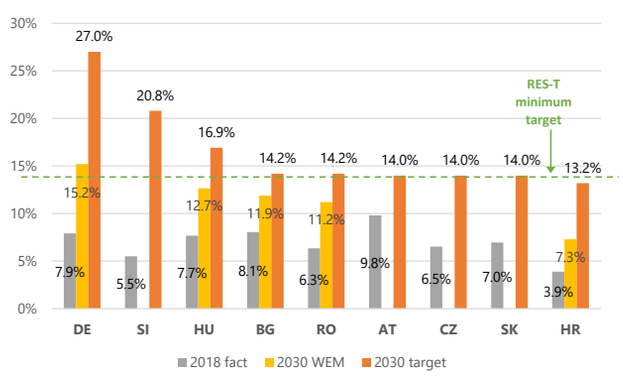
The transport sector does not have an EU-wide decarbonisation target, instead leaving individual member states to pursue a target related to the share of renewable energy within the total energy consumption of the sector (RES-T). RED II sets a minimum of 14% target for 2030 EU member states but using multipliers this can be met with a lower actual share.[1]

Figure 1 presents the 2030 targets (with additional measures or WAM) outlined in NECPs, the actual 2018 share, and the projected 2030 share (with existing measures or WEM, where available). Only three countries (DE, SI, HU) committed to a significantly higher RES-T share than the obligatory minimum. Bulgaria and Romania published a 14.2% target, while Austria, Czechia and Slovakia committed to the minimum. Croatia is the only country that set a lower target.[2]

Comparing the 2030 targets with the current (2018) RES-E shares, we cannot detect a strong connection, with the exception of Croatia, where the low target can be explained by the very low current RES-T. Austria had the highest share in 2018 (with high RES-E in the country) but still only committed to the minimum required share. From this aspect, the most ambitious country is Slovenia, where the target is almost a fourfold share in 2030 compared to 2018.

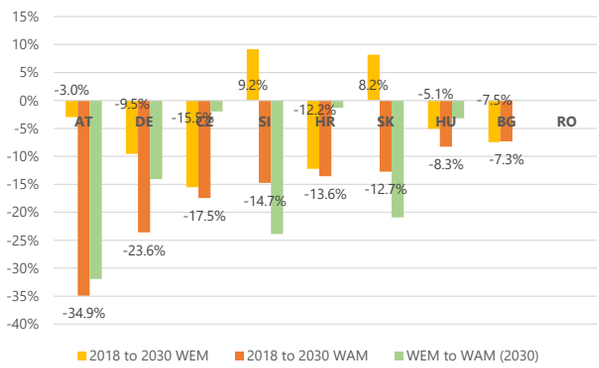
The fairly wide variance between the WEM and targets (WAM) suggest governments expect planned measures to have a substantial effect. Projected growth in the WEM scenario is between 47% (BG) and 90% (DE, HR) compared to 76-240% for WAM, meaning WAM delivers a 1.2-1.8 times faster development compared to WEM.

FIGURE 1. 2030 RENEWABLE ENERGY TARGETS IN THE TRANSPORT SECTOR, EU DR COUNTRIES



Source of data: Eurostat (for 2018 data), NECPs (for 2030 values)

FIGURE 2. EFFECTS OF THE PLANNED MEASURES ON GHG EMISSIONS IN THE TRANSPORT SECTOR, EU DR COUNTRIES



Source of data: Eurostat (for 2018 data), NECPs (for 2030 values)

Figure 2 presents the projected trends in GHG emissions from the transport sector. Most DR member states believe existing measures can reverse rising GHG emissions by 2030, with the exception of Slovenia and Slovakia that find additional measures necessary.

POLICIES AND MEASURES

Policies aiming to reduce GHG emissions can be categorised based on the following:

- **Fuel Switch:** To promote the switch from fossil fuels (mainly gasoline and diesel) to electricity, biofuels or other alternative fuels (e.g. hydrogen) with less environmental impact. Fostering the penetration of electric vehicles, increasing the share of biofuels, and electrification of railways also belong to this category.
- **Modal Shift:** To make more efficient and less emitting transport modes like public transportation, cycling and walking (non-motorized), and railway for freight transportation more competitive and attractive for users.
- **Efficiency Improvement:** Fuel switch and modal shift both lead to higher energy efficiency, however, it is also crucial to enhance the efficiency of the conventional transport modes and technologies.

These policy goals can be achieved with a variety of measures and combinations falling within four broad categories: infrastructure investments, financial incentives (subsidies, taxes and fees), regulatory obligations and campaigning / awareness raising.

1 If the share of biofuels produced from food and feed crops in a Member State is limited to a share lower than 7 %, the minimum share of 14% can be reduced accordingly, by a maximum of 7 percentage points (Article 26, 1 of RED II). The multiplier is 4 for RES in road vehicles and 1.5 times for rail transport, to encourage RES use in these areas (Article 27, 2 (b) of RED II).
2 As share of the food- and crop-based biofuels have a low share in Croatia, the country don't have to reach the 14% target (see previous footnote).

TABLE 1. MEASURES AND THEIR STATUS IN THE NECPS

Infrastructure investments	Financial incentives	Regulatory obligations	Information, awareness
EV charger network	Purchase subsidy for EVs	Green public procurement obligations	Sustainable transport (general)
Electrification of railways	Purchase subsidy for public transport vehicles	Biofuel mandates (general)	E-mobility
Railway development	Allowances (taxes, tolls, fees) for EVs	Promotion of advanced biofuels	Cycling
Bicycle infrastructure	CO2-based taxes, tolls and fees	Restriction on purchase and use of conventional vehicles	Eco-driving trainings
Pedestrian infrastructure	Subsidising rail transport	Restricted areas	

Not in target / No information; Proposed, but no targets, measures; Policy formulation / decision making; Implementation

The measures influence the targets in several ways. For example, emission-based taxation of passenger cars can accelerate the penetration of electric cars (Fuel Switch) but can also divert people to public transportation or non-motorised transport modes (Modal Shift), while incentivizing drivers to choose cars that consume and pollute less (Efficiency Improvement). By making environmentally friendly alternatives more price competitive, passengers and companies will make these choices economically. Additionally, direct obligations for renewable sources like biofuel mandates or green public procurements should also be an important part of the policy landscape.

The next section summarizes implemented and planned national measures in the assessed countries according to the above policy types. We use a slightly modified version of the policy cycle approach,[5] which evaluate the measures applying 4 basic categories:

1. Not in target/no information: The country does not mention anything related to the topic in its NECP.
2. Proposed but no targets or measures: The country identifies problems that require policy intervention but does not detail the following steps in the NECP.
3. Policy formulation / decision making: The country sets goals, identifies the steps and specifies detailed actions to achieve them in the NECP.
4. Implementation: Tasks are underway to be executed by the responsible entity.

It is important to highlight that this policy brief presents only a general picture of the measures which are specified in the more detailed study.

Table 1 above illustrates the current positions of DR EU countries for each field in terms of frequency and overall level of implementation.

Infrastructure investments

Five categories for infrastructure investments were developed according to affected modes: development of (i) electric vehicle (EV) chargers; the (ii) development and (iii) electrification of railway systems; (iv) bicycle and (v) pedestrian infrastructure.

The emergence of electric cars (and thus the reduction of transport emissions) depends largely on the development and perception of the **charging network**. As the previous table shows, most DR EU countries are in advanced stages of implementing and planning charging infrastructure. The most ambitious by 2030, Austria plans to achieve 100% network coverage at motorway rest stops and Germany aspires to reach 1 million charging points.

The development and the **electrification of railways** is also an area of focus where most countries are already taking active steps. Some of the countries primarily focus on the development of railway passenger transport (SK, RO), while others (AT, HU, CZ, DE, HR, SI) also take measures to increase the share of rail relative to road freight transport.

Most countries also see the potential for reducing emissions in the development of **cycling infrastructure**, which can replace several forms of motorized transport. Some like Czechia and Germany have complex national cycling development strategies, but only Slovenia and Austria have a strong focus on the development of **footpath infrastructure**.

Financial incentives

Most DR EU countries have implemented active **subsidy (purchase premium or bonus) programme for the purchase of EVs** (and in some cases for plug-in hybrids) with some including its gradual phase out in the long run. This usually targets individual private purchases, but some measures also cover business sector fleets.

Purchase subsidies for public transport vehicles aim to increase the number of more eco-friendly alternatives in each country. In some cases this equates to the purchase of electric buses (AT, HU, RO), in others replacing bus lines to eco-friendly alternatives like trolleys, trams, subways, and for some CNG (compressed natural gas) or hydrogen-based buses. While Austria procures electric buses to close out its diesel fleet, Hungary intends to procure Euro 6 diesels in the early years.

Like the above financial incentives, different types of **tax allowances** for EVs have become commonplace in the evaluated countries, including exemption (or reduction) from the registration fee and motor vehicle tax (AT, HU, DE, CZ, RO) and in some hydrogen and EVs for companies (DE, HU, AT). In addition to these tax allowances, countries and local governments are trying other forms, such as exemption from parking fees and tolls and entry to low-emission zones. Austria, Germany and Slovenia have envisaged and already apply taxes based on **vehicle CO_2 emissions**, which is a more sophisticated and suitable way of incentive taxation. If the EU ETS is expanded to cover transportation, carbon costs will have to be borne by users in other countries as well.

The **support of rail transportation** as an alternative to highly polluting transport modes is carried out by reducing taxes on train tickets and increasing airfare taxes, new toll policies (DE, SK) and increasing the share of rail freight (AT, HR).

Regulatory obligations

Another toolbox of actions are the regulatory obligations. The **green public procurement** obligations introduced or to be introduced are similar across all countries: either a ratio is set for newly acquired vehicles or a target for the whole fleet is set for different years. In most countries, the regulation applies to public service vehicles, but in Czechia it also extends to the purchase of public transport vehicles. Several countries (DE, SI, SK, CZ) have already executed public procurement specifically to lower the emissions of the vehicle fleet.

For **first-generation biofuels,** several countries are setting escalating blending mandates, though Germany is locking its share of first-generation biofuels in 2020 (5.3%) to 2030 under RED II. All countries seek to promote advanced biofuels but most are in the very preliminary stages of action and do not explicitly mention the related regulation of RED II.[6]

In order to reduce sectoral emissions, several countries plan for and apply regulations **restricting the purchase and use of conventional vehicles** (BG, RO, AT).

Low-emission zones are geographically defined areas that limit access of vehicles on the basis of their emissions in order to improve air quality. According to the NECPs, some of the countries (HR, BG) are only planning to establish and regulate these zones while others have already implemented measures (CZ, SK).

Information and awareness campaigns

Another way to reduce emissions is through various information campaigns that raise public awareness for a specific mode of transport or the concept of sustainable transport in general. In addition to campaigns, trainings that help to teach eco-friendly driving skills can also be included. These measures are less detailed than others but can have a large behavioural impact on the sector's emissions in the future. Only a few of the countries outlined plans for information campaigns promoting sustainable forms of transport, e-mobility, cycling and introduce programmes teaching eco-friendly driving forms.

RECOMMENDATIONS

Based on the overview of the NECPs, we identified the following areas and measures that appear sparingly but could be recommended for the other countries to incorporate in their policies:

- Incentivizing modal-shift to less CO_2-intensive transport modes should be more essential part of the plans.
- The development plans for non-motorised transport modes could also cover pedestrian infrastructure.
- CO_2-based taxation and pricing (tolls and fees) should replace tax allowance and subsidy systems.
- Implement support schemes for advanced biofuels and related blending requirements.
- Finally, consumer awareness campaigns should be widespread and fundamental to sustainable mobility strategies.

András Vékony joined REKK as a senior research associate in October 2017. His main fields of specialization are market and competition policy analyses, climate policies in the transport sector, and indicator methodology design. He studied Economics at the Corvinus University of Budapest and graduated in 2009, majoring in market analysis. Before joining REKK he spent 8 years at the Hungarian Competition Authority, where he worked on assessing mergers, conducts of dominant firms and complex cooperations among companies, mainly in the telecommunication, energy, postal, transportation and water utility markets.

Gábor Horváth joined the Regional Centre for Energy Policy Research (REKK) as a research associate in September 2019. He completed his MA degree in economics at Eötvös Loránd University in 2020 and his bachelor degree at Corvinus University of Budapest in Business Administration and Management in 2016. During his university studies he was also a member of Rajk László College for Advanced Studies, a college of Corvinus University of Budapest. Before joining REKK he was working as a data analyst and research assistant at various projects.

REKK FOUNDATION

The goal of the REKK Foundation is to contribute to the formation of sustainable energy systems in Central Europe, both from a business and environmental perspective. Its mission statement is to provide a platform for open-ended, European-wide dialogue between government and business actors, infrastructure operators, energy producers and traders, regulators and consumers, professional journalists and other interested private entities. The Foundation will develop policy briefs and issue papers with forward-looking proposals concerning challenges posed by energy and infrastructure systems and organize regional forums allowing stakeholders to become familiar with the latest technological and regulatory developments within the industry.

Interreg
EUROPEAN UNION
Danube Transnational Programme

EUROPEAN UNION
Project co-funded by European Union funds.
This project is supported by the Danube Transnational Programme funded under the European Regional Development Fund and co-funded by Hungary