Modalities to foster use of renewable energy sources in the transport sector by the Energy Community Contracting Parties

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David Meskhishvili, Ann Inasaridze: CENN
# Study factsheet

<table>
<thead>
<tr>
<th><strong>Contracting Entity:</strong></th>
<th>Energy Community</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration:</strong></td>
<td>December 2019 – November 2020</td>
</tr>
<tr>
<td><strong>Study team:</strong></td>
<td>LBST, E4tech, SEEC, CENN</td>
</tr>
<tr>
<td><strong>Objective:</strong></td>
<td>Reviewing the current status of renewable energies in transport (RES-T) in the Contracting Parties (CPs) and developing roadmaps for each of the Contracting Parties for increasing the RES-T share to a level compliant with the Renewable Energy Directive recast of 2018 (RED II) by 2030</td>
</tr>
</tbody>
</table>
Study team

- **LBST**
  - Project lead
  - Techno-economic, regulatory & policy expertise in renewable fuels
  - Focus on electricity and hydrogen
  - Regional focus on UA, MD

- **E4tech**
  - Techno-economic, regulatory & policy expertise in alternative fuels
  - Focus on biofuels

- **SEEC**
  - Regional focus on Balkan (AL, BA, XK, ME, MK, RS)

- **CENN** (subcontractor)
  - Regional focus on GE
Study scope

**Scope:**
- Review the **current status** of use of renewable energies in transport by the Energy Community Contracting Parties
- **2030 projections** for each Contracting Party in a business as usual scenario and in a target compliance scenario
- Description of **main characteristics of different types of biofuels, and potential of renewable energy sources** for transport in each Contracting Party
- Review of **good practices from EU MSs and beyond** that show a successful track record of increasing RES in the transport sector
- **Roadmap to 2030** for each Contracting Party, outlining priority actions related to legal framework, incentives, strategy and policies to increase use of renewable energies in transport, assuming that the target will be set as for EU Member States
- **Recommendations** to each Contracting Party on how to increase the renewable energy share in transport by 2030

**Out of scope:**
- Cost analyses
- Benefit analyses
- Detailed outlines of policies
Interaction with Contracting Parties

- The consortium has exchanged with the Contracting Parties on the basis of a questionnaire on data and information related to all aspects of the project:
  1) Data on transport and energy for past statistics and future perspectives
  2) Potential of renewable energies; current status of pathways in each Contracting Party
  3) Relevant legislation, ongoing legislative procedures; background information
- The Contracting Parties have provided major input to the study; other input was gathered by the study team through desktop research and stakeholder exchanges
- Exchanges have taken place by phone/webconference and by E-mail
- A consultation with the Contracting Parties was carried out on the draft results on the regulatory status quo and roadmaps for achieving the 2030 RES-T target
- Feedback received has been taken into account for the final results
- Final results including recommendations were presented to each CP in a stakeholder workshop
- The Final Report has been submitted to the Energy Community
- In spite of difficulties and challenges because of COVID-19, the study findings are deemed robust
# Table of Contents

1. Status quo of RES-T, and 2030 projections, for all Contracting Parties
2. Regulatory status quo in the CPs
3. RES-T options
4. Roadmap for the CPs
5. Conclusions and Recommendations for the CPs
1. Status quo of RES-T and 2030 projections

In all Contracting Parties
### Final energy consumption in transport by fuel in 2018

**Absolute**
- Oil and petroleum products are dominant fuels
- UA: electricity (rails, trolleybus, tram, etc.)
- GE: natural gas (road)
- UA, AL: non-compliant biofuels

**Per capita**
- Significant differences between CPs
- Alternative fuels are very low; highest per capita is natural gas in GE, then non-compliant biofuels in AL*, then electricity in UA

* Biofuels consumption data for Albania are taken from the Energy Balances of Eurostat (European Commission), which are based on official data submissions by Albania. However, other official sources of Albania provide lower data; e.g. the National Renewable Energy Action Plan (NREAP) of Albania includes significantly lower biofuels consumption data.
Renewable energy consumption in transport by fuel in 2018

- **Absolute**
  - Biofuels are not compliant with RED
  - Renewable electricity in rail in UA, RS, GE
  - Renewable electricity in road in MD
  - Renewable electricity in other in UA

- **Per capita**
  - Non-compliant biofuels in AL, UA
  - Renewable electricity in rail, road, other in GE, ME, RS, UA, BA, MD
RED II: fuels, sub-targets / caps for biofuels

RED II rests on three pillars for RES-T:
- **Biofuels**
- **Electricity**
- **Hydrogen** (more generally: RFNBOs)

**RFNBO**: ‘renewable liquid and gaseous transport fuels of non-biological origin’ means liquid or gaseous fuels which are used in the transport sector other than biofuels or biogas, the energy content of which is derived from renewable sources other than biomass.

Articles 25-27 of the RED II set several sub-targets and caps related to the transport target:
- **At least 3.5% from advanced biofuels** (after double counting; Annex IXA)
- **Maximum 3.4% from Annex IXB feedstocks** (after double counting)
- **Maximum 7% from food and feed crops**. If in 2020, the share of transport energy from these feedstocks is less than 1% in a Member State, the cap is 2%.
- **Phase out of all fuels from high indirect land-use change (iLUC) feedstocks by 2030** (currently, only palm oil)

For all CPs except Albania, the
- **cap for crop-based biofuels is anticipated to be 2% (7% for Albania), and**
- **overall 2030 transport target is assumed to be 9% (14% for Albania)**
2030 projections: absolute energy consumption (physical)

- Business as usual scenario
  - non-compliant biofuels (AL, UA)
  - RES electricity, notably in rail, increases following the anticipated increases of renewable electricity in the national power mix

- Target compliance scenario
  - Starting point: business as usual
  - Adopt selected RES-T options for 2030
  - Adjust energy consumption based on higher efficiency of battery-electric and hydrogen fuel cell-electric vehicles
2030 projections: per-capita energy consumption (physical)

- Business as usual scenario

- Target compliance scenario
Compliant biofuels make significant contributions in all CPs
- Crop-based are capped
- Advanced have minimum requirement
- Annex IX B are capped
RES methane in CPs where CNG vehicles and refuelling stations are established today (notably GE)
Electricity in rail where electrified rail is available and developed until 2030, and where the national electricity mix has high RES share
RES electricity in road is still limited in 2030
RES hydrogen with minor contributions in 2030
2. Regulatory Status Quo

For RES-T in the Contracting Parties
The existing **regulatory status quo varies considerably** between CPs:

- **RES-T obligations on fuel suppliers** have been adopted only recently in some CPs, are yet to come into force in some CPs, are not enforced in some CPs, or have not been adopted yet.
- **Sustainability requirements for biofuels** have been adopted only recently in some CPs, are yet to come into force in some CPs, or have not been adopted yet.

**Complementary policies** (e.g. financial incentives for the purchase of electric vehicles) are in place in some CPs; however, existing policies are often limited and fragmented, and overall strategies are often missing.

- **RES II provisions** have not been implemented yet.
# Key policies: example Serbia

<table>
<thead>
<tr>
<th>Policy</th>
<th>In force</th>
<th>Adopted</th>
<th>Draft</th>
<th>Not available</th>
<th>Adjustment to RED II</th>
<th>Comments</th>
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<td>Obligation for renewable fuels in transport</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Road</td>
<td>1.1.2021</td>
<td>2019</td>
<td></td>
<td></td>
<td>Required</td>
<td>Regulation on the share of biofuels on the market (Official Gazette of RS no. 71/2019)</td>
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<td>Rail</td>
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<td>2019</td>
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<td></td>
<td>Required</td>
<td>Obligation is related to transport in general Rulebook on the calculation of the share of renewable energy sources (Official Gazette of RS no. 37/2020)</td>
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<td>(Domestic) navigation</td>
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<td>Required</td>
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<tr>
<td>(Domestic) aviation</td>
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<td>2019</td>
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<td>Regulation on biofuel sustainability criteria (Official Gazette of RS no. 89/2019)</td>
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<td>Rulebook on technical and other requirements for biofuels and bioliquids (Official Gazette of RS no. 73/2019)</td>
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<td>Policy for increasing RES share in electricity for transport and/or</td>
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<td></td>
<td></td>
<td></td>
<td>Draft in internal development</td>
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<td>building up dedicated RES capacity for transport</td>
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<td>Transport fuels covered in National Energy and Climate Plan (NECP)</td>
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## Complementary policies: example Serbia

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<th>Policy</th>
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<th>Not available</th>
<th>Adjustment to RED II</th>
<th>Comments</th>
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<td>Tax on the use of motor vehicles is not paid by the owners of electric vehicles and hybrid vehicles</td>
<td>yes</td>
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<td>The Law on Taxes on the Use, Holding and Carrying of Goods</td>
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<td>Subsidized purchase of new vehicles that have exclusively electric drive, as well as vehicles with hybrid drive</td>
<td>yes</td>
<td>2020</td>
<td></td>
<td></td>
<td></td>
<td>The Regulation on the conditions and manner of implementation of subsidized purchase of new vehicles that have exclusively electric drive, as well as vehicles with hybrid drive</td>
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<tr>
<td>Subsidized purchase of new vehicles for the needs of renovation of the fleet of taxi transport as public transport</td>
<td>yes</td>
<td>2019</td>
<td></td>
<td></td>
<td></td>
<td>The Regulation on conditions and manner of conducting subsidized purchase of passenger vehicles for the needs of renovation of the fleet of taxi transport as public transport</td>
</tr>
</tbody>
</table>
3. RES-T options

For 2030 target compliance
Overview of Options

- Biofuels and liquid RFNBOs
  1. Liquid crop-based biofuels in road transport
  2. Liquid Biofuels (based on Annex IX B feedstocks: UCO, animal fats) for road transport
  3. Liquid advanced Biofuels (based on Annex IX A feedstocks) for road transport
  4. Liquid RFNBOs in road transport
  5. Renewable methane in road transport
  6. Renewable liquid fuels in shipping
  7. Renewable liquid fuels in aviation
  8. Renewable liquid fuels in rail

- Electricity
  9. Rail electrification
  10. Electric public transport (bus, trolleybus, tram, metro)
  11. Electric road vehicles (passenger cars and trucks)

- Hydrogen
  12. Hydrogen in rail
  13. Hydrogen bus and coach (urban bus, long distance coaches)
  14. Hydrogen road vehicles (passenger cars and trucks)
  15. Hydrogen in refineries
1: Liquid crop-based biofuels in road transport

Drivers for growth

Crop-based biofuels are currently the most widely available and generally the cheapest alternative fuel in the EU and globally. Nevertheless, they are still generally more expensive than fossil diesel and gasoline, so policy is required to support their use. The majority of crop-based biofuels used globally today are ethanol and FAME biodiesel.

Policy framework

Central key policies:
- Blending mandate / GHG reduction obligation – Requires legislation defining all aspects of the mandate / obligation including who is obligated, penalty for non-compliance, where is the duty point, what is the target obligation / GHG reduction, buy-out price, caps or sub-targets for particular fuels or feedstocks etc.
- Sustainability framework – this should be implemented alongside the blend mandate, to ensure that biofuels make high GHG savings and do not cause other environmental impacts such as on biodiversity. The sustainability requirements in the RED II should act as the framework for biofuel sustainability legislation, including provision to limit the supply of crop-based biofuels and phase out high-ILUC biofuels by 2030. Certification (national or voluntary schemes) must be established.

Complementary policies:
- Grants / subsidies to fuel producers to build up domestic biofuel production in each CP
- Information to retailers and consumers on switching and vehicle compatibility
- A unit within the relevant government ministry must be designated responsible for: implementing, reviewing and updating policy; ensuring sustainability certification of fuels; administration of the scheme; data collection and reporting

Dedicated vehicles

Ethanol can be blended up to 5%vol in gasoline (E5) and fatty acid methyl ester (FAME) can be blended up to 7%vol in diesel (B7) with no modifications required to vehicles. Given the 2% cap, use of crop-based biofuels will not exceed these blend walls.

Dedicated infrastructure

E5 and B7 blends do not require dedicated infrastructure. Check materials for compatibility; follow protocols for first filling of storage tanks; additional blending facilities and tanks may be required.

Contribution 2030 (CP-specific)

Up to 2% for all CPs apart from Albania which can use up to 7%

Co-benefits

- Domestic fuel production could support fuel producers and agricultural sector in each CP
11: Electric road vehicles (passenger cars and trucks)

Drivers for growth

- Increased renewable electricity share in national electricity mix and dedicated renewable capacities for road transport contribute to the RES-T target. Electrifying road transport (vehicles, infrastructure) allows using (renewable) electricity and reducing conventional fuels. Establishing charging infrastructure (government and private sector) is crucial to vehicle fleet growth.

Policy framework

Central key policies: Develop dedicated Electric Vehicle Strategy
- Increase RES share in electricity in general in existing policy instruments
- Amend existing policies to incentivise development of dedicated RES electricity capacities for road transport
- Increase number of electric road vehicles (set 2030 targets) by financial incentives (tax/ custom reductions/ exemptions, investment support) on vehicles, services, components for domestic production; counter financing by higher duties on conventional
- Dedicated public and fleet (fast) charging infrastructure based on build-up strategy; financial incentives for infrastructure operators (e.g. reduction/exemption of VAT, custom, taxes etc. for construction/ operation); clear legal framework for infrastructure operators

Complementary policies:
- Communication: Increase public awareness for electric public transport
- Municipal lighthouse projects, financial support programmes to fleet operators (taxi, delivery services etc.), public procurement
- Training programmes for repair/maintenance of vehicles, infrastructure (academic, professional)
- Zero/low emission zones in polluted city centres, limitation of old (unsafe, polluting) vehicles; free parking, use of bus lanes, etc.

Dedicated vehicles

- Dedicated vehicles (BEV) required; passenger cars and light duty vehicles commercially available; no suitable electric vehicle solutions for long haul freight transport; electric medium/ heavy duty trucks suitable for distribution purposes.

Dedicated infrastructure

- Dedicated public electricity (fast) charging infrastructure and dedicated charging infrastructure for vehicles fleets is required.

Contribution 2030 (CP-specific)

- 0.07% - 0.6%

- Decarbonisation and pollutant emission reduction from road transport (notably in cities, but also in rural areas)
- Reducing dependence on fossil energy imports
- Development of national manufacturing capacities for electric vehicles, charging infrastructure and components
Potential RES-T contributions from all options for all CPs

- Potential RES-T contributions from all options range from 9.2% to 13.8% (15.3% for Albania)
- The absolute renewable energy consumption corresponding to these share varies strongly because of the different sizes of the CPs from 25 ktoe to 787 ktoe

<table>
<thead>
<tr>
<th></th>
<th>Albania</th>
<th>Bosnia and Herzegovina</th>
<th>Georgia</th>
<th>Kosovo*</th>
<th>Moldova</th>
<th>Montenegro</th>
<th>North Macedonia</th>
<th>Serbia</th>
<th>Ukraine</th>
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<tbody>
<tr>
<td>share</td>
<td>15.3%</td>
<td>9.9%</td>
<td>13.7%</td>
<td>9.73%</td>
<td>9.2%</td>
<td>13.1%</td>
<td>10.5%</td>
<td>11.2%</td>
<td>13.8%</td>
</tr>
<tr>
<td>amount (ktoe)</td>
<td>111</td>
<td>129</td>
<td>180</td>
<td>32</td>
<td>49</td>
<td>25</td>
<td>52</td>
<td>148</td>
<td>787</td>
</tr>
</tbody>
</table>
Options: Results

- All CPs have a number of options to achieve the 2030 RES-T target of 9% (14% for Albania)
- In many CPs, overachievement of the target is possible, and could open opportunities for export
- Of the 9% (14% for Albania), crop-based biofuels are capped at 2% (7% for Albania), while 7% need to be achieved by other renewable fuels
  - Biofuels are anticipated to contribute most to the 2030 target
  - Electricity use in rail can make relevant contributions in some CPs, while it is lower (down to zero) in other CPs
  - Electric road vehicles have notable potential, which is anticipated to be used towards 2030 with a dynamic growth potential beyond 2030 to allow for a major RES-T share by 2050
  - Hydrogen and battery-electric vehicles are complementary as hydrogen fuel cell vehicles enable longer driving distances, and are suitable for cars and heavy-duty transport alike; dynamic growth beyond 2030 is anticipated
Potential RES-T contributions from all options: e.g. Ukraine

- A RES-T share of **13.8% in 2030** can be achieved as a combination of all options
- Further limited potentials exist in renewable liquid fuels in shipping, aviation and rail
- **Biofuels** and **electric rail** potentially contribute most in 2030
- **Electric and hydrogen vehicles** can already contribute by 2030, and have a strong growth potential thereafter

### Contribution to RES-T target (%) incl. multiple counting

<table>
<thead>
<tr>
<th>Option</th>
<th>Contribution to RES-T target (%)</th>
<th>Amount of renewable fuel used (ktoe)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Crop-based biofuels in road transport</td>
<td>2.0%</td>
<td>188.6</td>
</tr>
<tr>
<td>2. Liquid fuels produced from Annex IX B feedstocks in road transport</td>
<td>3.4%</td>
<td>160.3</td>
</tr>
<tr>
<td>3. Liquid advanced Biofuels (based on Annex IX A feedstocks) in road transport</td>
<td>2.3%</td>
<td>110.4</td>
</tr>
<tr>
<td>4. Liquid RFNBOs in road transport</td>
<td>0.03%</td>
<td>2.90</td>
</tr>
<tr>
<td>5. Renewable methane in road transport</td>
<td>1.2%</td>
<td>54.6</td>
</tr>
<tr>
<td>6. Renewable liquid fuels in shipping</td>
<td>0.0%</td>
<td>0.00</td>
</tr>
<tr>
<td>7. Renewable liquid fuels in aviation</td>
<td>0.0%</td>
<td>0.00</td>
</tr>
<tr>
<td>8. Renewable liquid fuels in rail</td>
<td>0.0%</td>
<td>0.00</td>
</tr>
<tr>
<td>9. Rail electrification</td>
<td>3.45%</td>
<td>217.0</td>
</tr>
<tr>
<td>10. Electric public transport (bus, trolleybus, tram, metro)</td>
<td>1.12%</td>
<td>42.23</td>
</tr>
<tr>
<td>11. Electric road vehicles (passenger cars and trucks)</td>
<td>0.19%</td>
<td>4.55</td>
</tr>
<tr>
<td>12. Hydrogen in rail</td>
<td>0.01%</td>
<td>1.11</td>
</tr>
<tr>
<td>13. Hydrogen bus and coach (urban bus, long distance coaches)</td>
<td>0.006%</td>
<td>0.60</td>
</tr>
<tr>
<td>14. Hydrogen road vehicles (passenger cars and trucks)</td>
<td>0.05%</td>
<td>4.55</td>
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<tr>
<td>15. Hydrogen in refineries</td>
<td>0.0%</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13.8%</strong></td>
<td><strong>787</strong></td>
</tr>
</tbody>
</table>
2030 scenarios: Business as Usual vs. Target Compliance
g
example: Ukraine

Fossil and renewable fuels excluding multipliers

2030 projections based on:
https://timesukraine.tokni.com/
4. Roadmaps for CPs

For 2030 target compliance
## Typical Roadmap – Overview

<table>
<thead>
<tr>
<th>Key policies</th>
<th>2020-2025</th>
<th>2025-2030</th>
<th>2030+</th>
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<tbody>
<tr>
<td>Obligation towards economic operators for renewable fuels in transport (1-5, 10-15)</td>
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<tr>
<td>Adjust 2030 RES-T target and detailed provisions to RED II (1-15)</td>
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<tr>
<td>Sustainability framework for all RES fuels (1-15) incl. certification</td>
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<tr>
<td>Increase RES in electricity and for transport (4, 9-14)</td>
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<tr>
<td>Electric &amp; H₂ Transport Strategy (9-14)</td>
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<tr>
<td>Increase electric &amp; hydrogen public transport, road &amp; rail vehicles (9-14)</td>
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<tr>
<td>Public &amp; private electric charging &amp; hydrogen refuelling infrastructure (9-14)</td>
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<tr>
<td>NECP (1-15)</td>
<td>NECP</td>
<td>NECP</td>
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</table>

### Summary of options

1. Crop-based biofuels in road transport
2. Annex IXB-based biofuels in road
3. Advanced biofuels (IX A) in road
4. Liquid RFNBOs in road transport
5. Renewable methane in road transport
6. Renewable liquid fuels in shipping
7. Renewable liquid fuels in aviation
8. Renewable liquid fuels in rail
9. Rail electrification
10. Electric public transport (bus, tram etc)
11. Electric road vehicles (cars, trucks)
12. Hydrogen in rail
13. Hydrogen bus and coach
14. Hydrogen road vehicles (cars, trucks)
15. Hydrogen in refineries

### Complementary policies

- Communication, Information for consumers, commerce and industry (1-15)
- Assign administrative responsibilities in government, enhance inter-ministerial co-operation on RES-T (1-15)
- Municipal lighthouse projects for zero emission transport (10-11, 13-14)
- Professional training for repair/maintenance of electric / H₂ vehicles & infrastructure; academic training (9-14)
- Improve technical inspections of vehicles to eliminate old / technically unsafe vehicles (1-14)
- Zero/low emission zones in polluted city centres (10-11, 13-14)
- Financial support programmes to fleet operators (9-14)
- Grants / subsidies to fuel producers (1-15)
- NECP (1-15)
- NECP
- NECP
- NECP
- NECP
### Typical Roadmap – Biofuels and liquid RFNBOs

<table>
<thead>
<tr>
<th>2020-2025</th>
<th>2025-2030</th>
<th>2030+</th>
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<tr>
<td><strong>Key policies</strong></td>
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<td>NECP (1-8)</td>
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<td>Obligation towards economic operators for renewable fuels in transport (1-8)</td>
<td>Revise and adjust strategies &amp; policies to achieve 2030 target (1-8)</td>
<td>Revise and adjust strategies &amp; policies for 2030-2040 (1-8)</td>
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<td>Adjust 2030 RES-T target and detailed provisions to RED II (1-8)</td>
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<td>Sustainability framework for all RES fuels (1-8) incl. certification by end 2021</td>
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<td><strong>Complementary policies</strong></td>
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<tr>
<td>Communication, Information for consumers, commerce and industry (1-8)</td>
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<td>Assign administrative responsibilities in government, enhance inter-ministerial co-operation on RES-T (1-8)</td>
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<tr>
<td>Grants / subsidies to fuel producers (1-8)</td>
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</table>

### Summary of options

1. Crop-based biofuels in road transport
2. Annex IXB-based biofuels in road
3. Advanced biofuels (IX A) in road
4. Liquid RFNBOs in road transport
5. Renewable methane in road transport
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8. Renewable liquid fuels in rail
9. Rail electrification
10. Electric public transport (bus, tram etc)
11. Electric road vehicles (cars, trucks)
12. Hydrogen in rail
13. Hydrogen bus and coach
14. Hydrogen road vehicles (cars, trucks)
15. Hydrogen in refineries

### Key policies

- **NECP (1-8)**: NECP
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### Complementary policies

- Communication, Information for consumers, commerce and industry (1-8)
- Assign administrative responsibilities in government, enhance inter-ministerial co-operation on RES-T (1-8)
- Improve technical inspections of vehicles to eliminate old / technically unsafe vehicles (1-8)
- Grants / subsidies to fuel producers (1-8)
## Typical Roadmap – Electricity in transport

<table>
<thead>
<tr>
<th>Key policies</th>
<th>2020-2025</th>
<th>2025-2030</th>
<th>2030+</th>
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<tbody>
<tr>
<td>Policies for electricity in transport (9-11)</td>
<td></td>
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<tr>
<td>Additionality framework for RES electricity in transport (9-11)</td>
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<tr>
<td>Increase RES in electricity and for transport (9-11)</td>
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<tr>
<td>Electric Transport Strategy (9-11)</td>
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<td>Increase electric public transport, road &amp; rail vehicles (9-11)</td>
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<tr>
<td>Public &amp; private electric charging infrastructure: incentives, permitting (9-11)</td>
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### NECP (9-11)

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### Complementary policies

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<td>Assign administrative responsibilities in government, enhance inter-ministerial co-operation on RES-T (9-11)</td>
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<tr>
<td>Municipal lighthouse projects for zero emission transport (10-11)</td>
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<td>Professional training for repair/maintenance of electric vehicles &amp; infrastructure; academic training (9-11)</td>
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</table>
**Typical Roadmap – Hydrogen**

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<td><strong>Key policies</strong></td>
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<tr>
<td>Obligation for hydrogen in transport (12-15)</td>
<td>Revise and adjust strategies &amp; policies to achieve 2030 target (1-15)</td>
<td>Revise and adjust strategies &amp; policies for 2030-2040 (1-15)</td>
</tr>
<tr>
<td>Additionality framework for RES hydrogen (12-15) incl. certification</td>
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<tr>
<td>Increase RES in electricity and for hydrogen for transport (12-15)</td>
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<tr>
<td>Hydrogen Transport Strategy (12-15)</td>
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<tr>
<td>Increase hydrogen public transport, road &amp; rail vehicles (12-14)</td>
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<td>Public &amp; private hydrogen refuelling infrastructure: incentives, permitting (12-14)</td>
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<tr>
<td><strong>NECP (1-15)</strong></td>
<td><strong>NECP</strong></td>
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| **Complementary policies** |
| Communication, Information for consumers, commerce and industry (12-15) |
| Assign administrative responsibilities in government, enhance inter-ministerial co-operation on RES-T (12-15) |
| Municipal lighthouse projects for zero emission transport (13-14) |
| Professional training for repair/maintenance of electric / H₂ vehicles & infrastructure; academic training (12-14) |
| Improve technical inspections of vehicles to eliminate old / technically unsafe vehicles (12-14) |
| Zero/low emission zones in polluted city centres (13-14) |
| Financial support programmes to fleet operators (12-14) |
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**Summary of options**

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5. Conclusions & Recommendations

For 2030 RES-T target compliance
Conclusions

- None of the CPs achieves the 10% RES-T target for 2020
- All CPs have **a number of options** to achieve the 2030 RES-T target of 9% (14% for Albania)
- In many CPs, **overachievement of the target** is possible, and could open opportunities for export
- The existing **regulatory status quo varies considerably** between CPs; RES II provisions have not been implemented yet
- Of the 9%, crop-based biofuels are capped at 2% (7% for Albania), while 7% need to be achieved by other renewable fuels
  - **Biofuels** are anticipated to contribute most to the 2030 target
  - **Electricity use in rail** can make relevant contributions in some CPs, while it is lower (down to zero) in other CPs
  - **Electric road vehicles** have notable potential, which is anticipated to be used towards 2030 with a dynamic growth potential beyond 2030 to allow for a major RES-T share by 2050
  - **Hydrogen and battery-electric vehicles** are complementary as hydrogen fuel cell vehicles enable longer driving distances, and are suitable for cars and heavy-duty transport alike; dynamic growth beyond 2030 is anticipated
- **Additional benefits** of achieving the 2030 RES-T target include the reduction of fossil energy import dependence, additional national value creation, new or enhanced national value chains with related economic benefits and possible job creation, additional contributions to the national climate targets
- Even with target achievement, the anticipated consumption growth in most CPs will result in increased fossil fuel imports relative to 2018. Therefore **even higher ambitions** could be beneficial in economic and environmental terms
Recommendations

- As a proven policy tool, all CPs should adopt a **2030 target** for renewable energies in transport based on RED II
- All elements of the regulatory framework should be **based on RED II**, and should be in place by the **end of 2022**
- Where legislation is already in place setting obligations for certain quantities of biofuels on the market, defining sustainability criteria and establishing certification, **enforcement is needed**
- **Additional key policy elements** needed to achieve 2030 RES-T targets include:
  - Checking and adjusting taxation systems to provide incentives for renewable fuels as well as electric and hydrogen vehicles, and disincentives for fossil fuels
  - strategy and support mechanisms for electricity in transport
  - strategy and support mechanisms for hydrogen in transport
- **Complementary policies** are recommended to be established in order to ensure target achievement and maximum benefits to the economies in the CPs
- **Co-benefits with other policy areas** should be actively developed. This includes renewable electricity, air quality improvements in urban areas and other environmental and health issues as well as economic benefits
- Furthermore, **co-operation with other Contracting Parties**, and more generally with other countries, allows leveraging synergies
- Policies should be revised and possibly adjusted **around 2025** based on a policy and results evaluation
- The biannual progress reports and the regular revisions of the **National Energy and Climate Plans** are the appropriate instrument for monitoring successful implementation and development towards the 2030 target
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