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EU Transport GHG: Routes to 2050?

Regulation for vehicles and energy carriers

Regulation of energy carriers

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Partners

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Overview presentation

- Current GHG-related regulation of energy carriers
- Different options for energy regulation
- GHG mitigation measures that are promoted with these policies
- GHG regulation of energy carriers for other modes
- Conclusions for future GHG policy

Regulation of energy carriers: current GHG related policies (1)

- Fuel Quality Directive (2009/30/EC)
 - To ensure technical compatibility of fuels with vehicles
 - To reduce the environmental impact of transport fuels
 - CO₂ reduction target for road transport fuels, for 2010-2020.
 - To be met with biofuels or by reducing flaring and venting
 - Enables higher biofuel blends in standard diesel and gasoline
 - Defines sustainability standards and CO₂ calculation methodology for biofuels
 - Minimum GHG savings of biofuels required
 - Indirect land use change effects of biofuels not yet included
 - Methodology for fossil fuels and electricity and monitoring to be developed

Regulation of energy carriers: current GHG related policies (2)

- Renewable Energy Directive (2009/28/EC)
 - 10% renewable energy target for road transport fuels, for 2020
 - Biofuels from waste and residues count double
 - Renewable electricity included, average national or EU levels
 - Defines sustainability standards for biofuels (as in FQD)
 - Sets minimum GHG savings standard for biofuels
 - Methodology is defined, but indirect land use change effects of biofuels to be included

Different types of regulation of energy carriers

1. Regulation of the type of energy carriers on the market (RED)
2. Regulation of CO₂ emissions, from well to wheel (FQD)
3. Regulation to stimulate market introduction of new energy carriers
 - availability
4. Fuel quality standards
 - compatibility with vehicles, emissions
5. Safety standards
6. Sustainability criteria
7. Electric transport: Regulation of electricity sector

1. Regulation of the type of energy carriers or energy sources

- Mandatory targets of renewable energy (general), or of specific energy sources or carriers
 - RED
- Can accelerate market introduction of low-carbon fuels that are not (yet) competitive
- Cost to governments low, costs to energy providers/consumers can vary
- Requires accurate estimates of developments in low carbon energy availability and cost
- Future options:
 - Methodological and monitoring improvements,
 - Increase of target >2020

2. Regulation of CO₂ emissions, from well to wheel

- Mandatory targets of WTW CO₂ reduction of fuels (general), or of specific energy sources or carriers
 - FQD
- Can accelerate implementation of CO₂ mitigation measures that are not (yet) competitive
 - More cost efficient CO₂ reduction than RE target
- Cost to governments low, costs to energy providers/consumers can vary
- Future options:
 - Methodological and monitoring improvements,
 - More stringent targets >2020

3. Regulation to stimulate market introduction of new energy carriers - availability

- Regulation to increase biofuels availability introduced in FQD
- Future options:
 - Regulation of electric charging point or battery swap station availability
 - Further expansion of biofuels availability
 - Similar policies for hydrogen (LT)

4. Fuel quality and 5. Safety standards

- Ensures compatibility with vehicles and safety
- Requirement for future market share increases of alternative energy carriers
 - Regulation needs to be in place well in advance
 - Updated regularly
- CEN and ISO
 - European Committee for Standardisation
 - International Organization for Standardization
- Likely issues for the future:
 - Electric road transport and charging, battery safety, future biofuels, higher biofuel blends, hydrogen

6. Sustainability criteria

- Defined for biofuels, in the RED and FQD
- Considered essential to prevent negative environmental and social impact of these policies
- Methodology to be further developed in the coming years
 - Indirect land use change to be included
- Future options:
 - Methodological and monitoring improvements
 - Further tightening of the standards
 - Criteria for other energy carriers (e.g., fossil)

7. Regulations for specific energy carriers

Electric transport: Regulation of electricity production sector

- RED: Electricity will have to contribute to the 20% RE target
 - Specific target not specified, Member States develop national action plans
- EU ETS
 - Cap on CO₂ emissions

Future developments:

- CO₂ cap in ETS > 2020
- RED target > 2020
- Member State policies

GHG mitigation measures promoted with these policies

- Speed up of shift to low-carbon fuels and energy carriers
 - Sustainable biofuels, with low GHG emissions
 - Electricity, in particular renewable electricity
 - Hydrogen, in particular from a renewable energy source
- CO₂ regulation: Implementation of CO₂ mitigation options over the fuel chains
- Sustainability regulation: Reduce negative side effects

GHG regulation of energy carriers for other modes

Can GHG regulation of energy carriers be extended to other modes?

- Yes, if
 - GHG mitigation options exist
 - There is limited risk of relocation of bunkering

Can renewable energy regulation be extended to other modes?

- Yes, if
 - Renewable energy options exist
 - There is limited risk of relocation of bunkering

Conclusions for future GHG policy (1)

- RED and FQD provide good basis for the future
 - Can promote low carbon energy options that are not competitive
 - Costs to governments are low
- Methodologies and monitoring need to be developed further
 - GHG emissions of indirect land use
 - GHG emissions monitoring of fossil fuels and electric transport
- Sustainability criteria need to be developed further
- Renewable energy and GHG reduction targets can be further increased after 2020

Conclusions for future GHG policy (2)

- GHG regulation: direct incentive for GHG mitigation
 - Renewable energy regulation enables more government control on energy transition
- Other modes could be included in the future
 - If low-carbon energy carriers exist
 - If options for relocation of fuel bunkering are limited
- Continuous development of fuel quality standards and safety regulations essential in shift to low carbon fuels
 - Compatibility with vehicle technology - link with vehicle regulation



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Questions, suggestions or comments??

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