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TECHNISCHE UNIVERSITÄT WIEN
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Energy Economics Group

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The EU 2030 Framework for renewables –

effective effort sharing through public benchmarks

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NOTE

Subject: European Council (23 and 24 October 2014)
Conclusions on 2030 Climate and Energy Policy Framework

*An **EU target of at least 27% is set for the share of renewable** energy consumed in the EU in 2030. **This target will be binding at EU level**. It will be fulfilled through Member States contributions **guided by the need to deliver collectively the EU target** without preventing Member States from setting their own more ambitious national targets and supporting them, in line with the state aid guidelines, …*

How to share the effort?

… top-down vs. bottom-up approaches …

- It is currently not clear how individual EU member states can or should contribute to the EU-wide 2030 target for renewables.
- In principle, the EU-wide target can be allocated to smaller regional or national entities either via a **top-down** (EC acts) or **bottom-up** (MSs pledge) approach.

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Benchmarks as a way forward

- To better guide the pledging procedure, **the European Commission should provide a first benchmark** on regional or national targets.
- **EU member states or regions could then put pledges forward** specifying a higher or a lower target than proposed in the benchmark.
- Major benefits of combining national or regional pledges with an initial top-down benchmark include **a first quantitative indication for a potential national or regional target** than can help structuring the pledging process.
- In addition, **extremely low pledges may be avoided** by publicly comparing the pledged target with the benchmarking.

→ *For these reasons, we encourage* ***combining national or regional pledges with a top-down benchmark****.*

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The allocation logic of the 2020 target as a first benchmark idea …

The allocation logic of the 2020 target is laid down in Directive 2009/28/EC. It combines …

- a **flat-rate increase**, where each member state has to increase its share of renewables by a fixed number of percentage points,
- with **an increase based on the economic strength** of a member state, measured in terms of GDP per capita,
- as well as **efforts made in the past**.

Other aspects such as the *potential availability of renewable resources* and *related costs* are not taken into account though.

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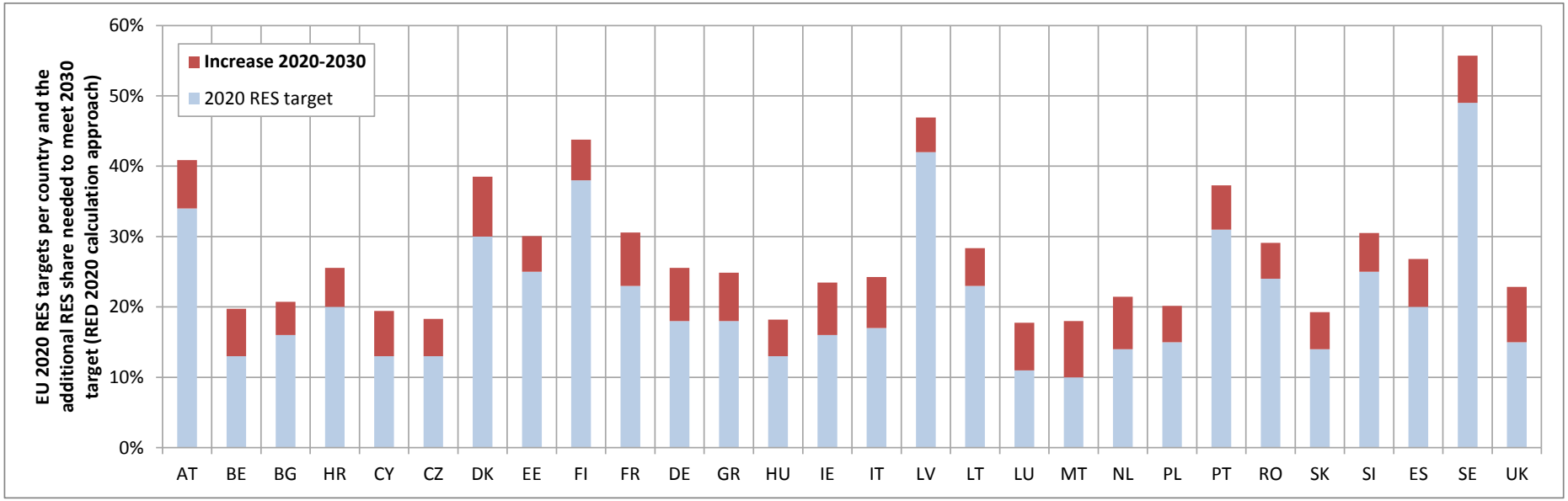
The 2020 allocation method



- In terms of *increase compared to 2020*: **moderate spread** between different MS
- Most ambitious: Denmark (+8.5%), Malta (+8.0%) and the UK (+7.9%).
- Moderate GDP expectations for the Baltic States and several MS specifically in the Southern and Eastern part of Europe → only 5% to 6% increase (Bulgaria: 4.7%)

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Five *alternative* options to define benchmarks

- **pure flat-rate** … a flat-rate increase equally across all member states,
- **GDP-based (default)**,
- **GDP-based (modified)**,

  … reflecting the **economic strength** of an EU member state, with and w/o consideration of energy intensity

- **potentials-based** … considering the potential availability of renewable energy resources and related costs,
- **combined approach** … combination of flat-rate and potential-based

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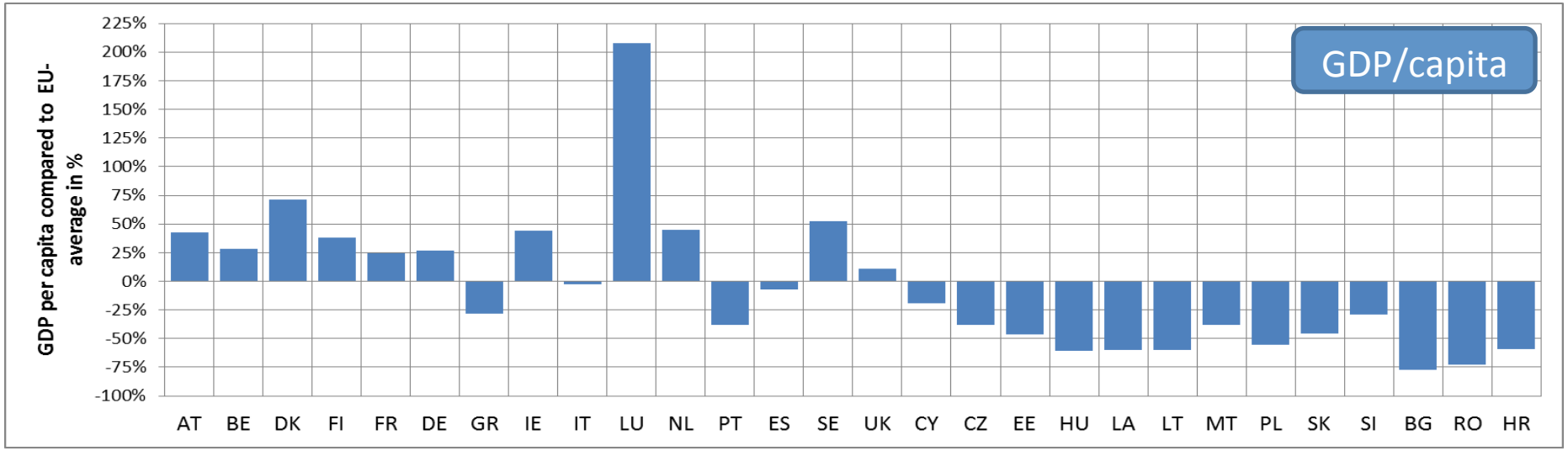
Default GDP-based benchmark



- In the *default* GDP-based benchmark, the **additionally needed production from renewables** to meet the 2030 target of 27% for the EU at large will be **distributed** to MS **according to their GDP share** in the total GDP of the EU.
- **To express as renewables sh**are, the outcome has to be **divided by the GFEC** of the respective MS.
- Supposed to factor in the *economic strength of MS* and therefore indicate **stronger contributions for MS with a higher than average GDP per capita**.

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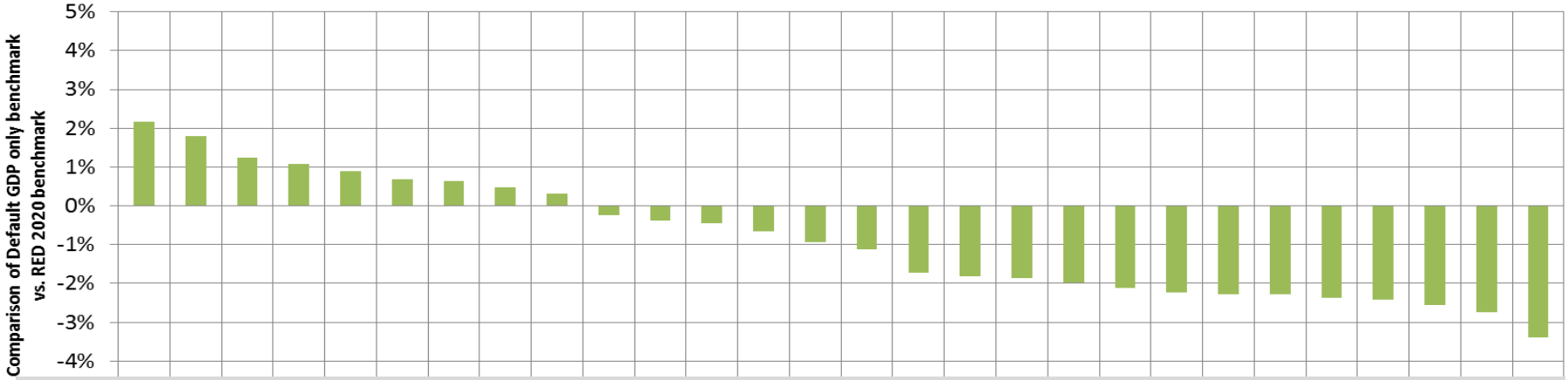
Default GDP-based benchmark



in %	DK	DE	UK	NL	FR	MT	AT	GR	IT	BE	FI	LU	IE	CY	PT	HR	SE	CZ	ES	LT	SI	RO	SK	PL	HU	EE	BG	LV
2020 method	8.5	7.5	7.9	7.4	7.6	8.0	6.9	6.9	7.3	6.7	5.8	6.8	7.5	6.4	6.3	5.6	6.7	5.3	6.8	5.4	5.5	5.1	5.3	5.2	5.2	5.1	4.7	4.9
Default GDP	10.7	9.3	9.1	8.5	8.5	8.7	7.5	7.3	7.6	6.5	5.4	6.3	6.8	5.5	5.2	3.8	4.9	3.5	4.8	3.2	3.3	2.8	3.0	2.8	2.8	2.5	2.0	1.5

- **Leads to a higher spread between MS**: E.g. Denmark (+10.7%) vs. Latvia (+1.5%)
- **Does not always yield the expected and desired result**: E.g. Finland, Sweden, and Luxembourg with a GDP/capita >50% above EU-average whereas their GDP-based benchmark is significantly less ambitious compared to the 2020 method.

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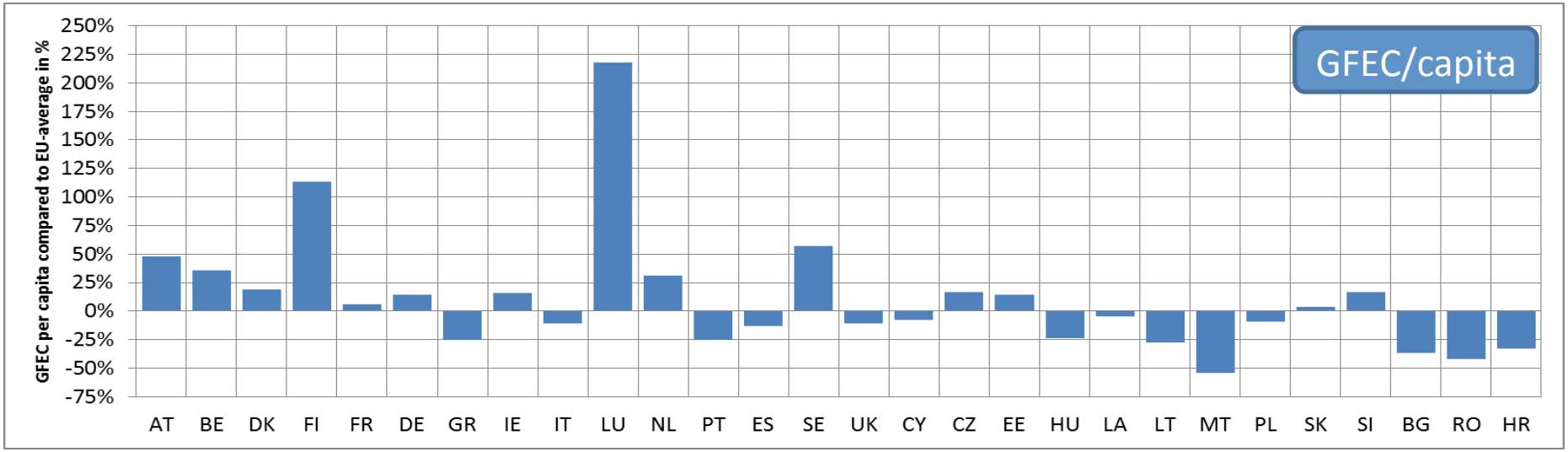
Default GDP-based benchmark

- **Why?** "Flat rate" reflects **G**ross **F**inal **E**nergy **C**onsumption (**GFEC**)/capita, here ignored!
- **→ If GFEC index > GDP index → lower benchmark than in a pure flat-rate benchmark (or using the 2020 allocation method).**



→ This benchmark represents a combination of energy-intensity-based & GDP-based indicators.

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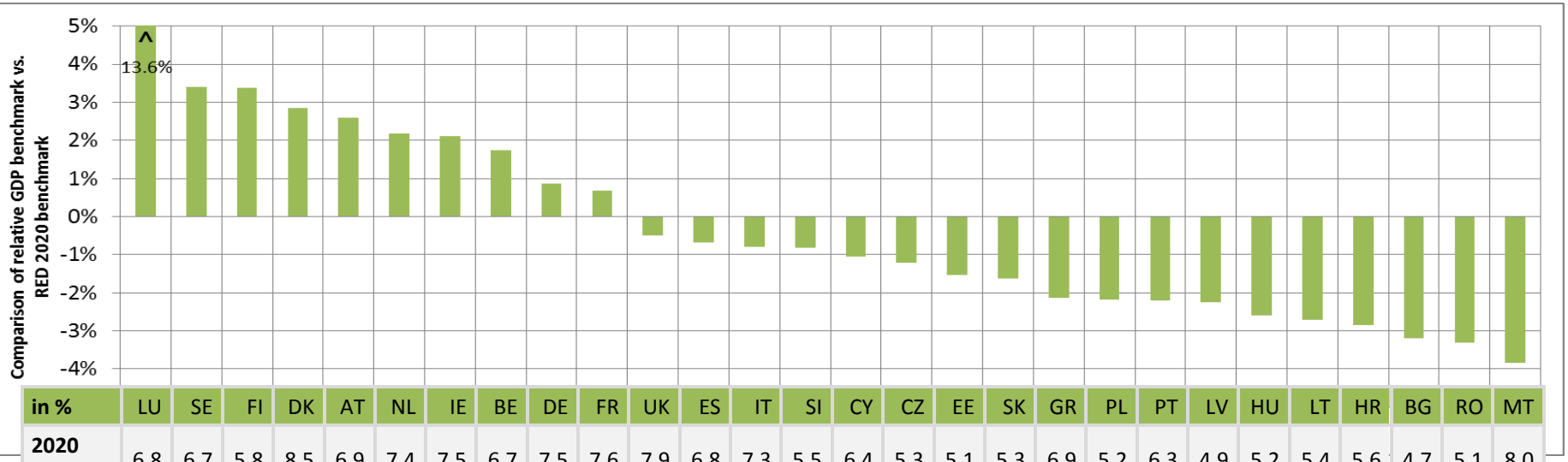
Modified GDP-based benchmark

- Here the **flat-rate of 7%** would be directly **weighted with the GDP/capita** …



in %	LU	SE	FI	DK	AT	NL	IE	BE	DE	FR	UK	ES	IT	SI	CY	CZ	EE	SK	GR	PL	PT	LV	HU	LT	HR	BG	RO	MT
2020 method	6.8	6.7	5.8	8.5	6.9	7.4	7.5	6.7	7.5	7.6	7.9	6.8	7.3	5.5	6.4	5.3	5.1	5.3	6.9	5.2	6.3	4.9	5.2	5.4	5.6	4.7	5.1	8.0
Modified GDP	20.4	10.1	9.1	11.4	9.5	9.6	9.6	8.5	8.4	8.3	7.3	6.2	6.5	4.7	5.4	4.1	3.5	3.6	4.7	3.0	4.1	2.7	2.6	2.7	2.7	1.5	1.8	4.1

- **Opens up the spread** between the benchmark results of the different MS even stronger than the default GDP-based approach.
- → Benchmarks range from **1.5% for Bulgaria** to **20.4% for Luxembourg**.

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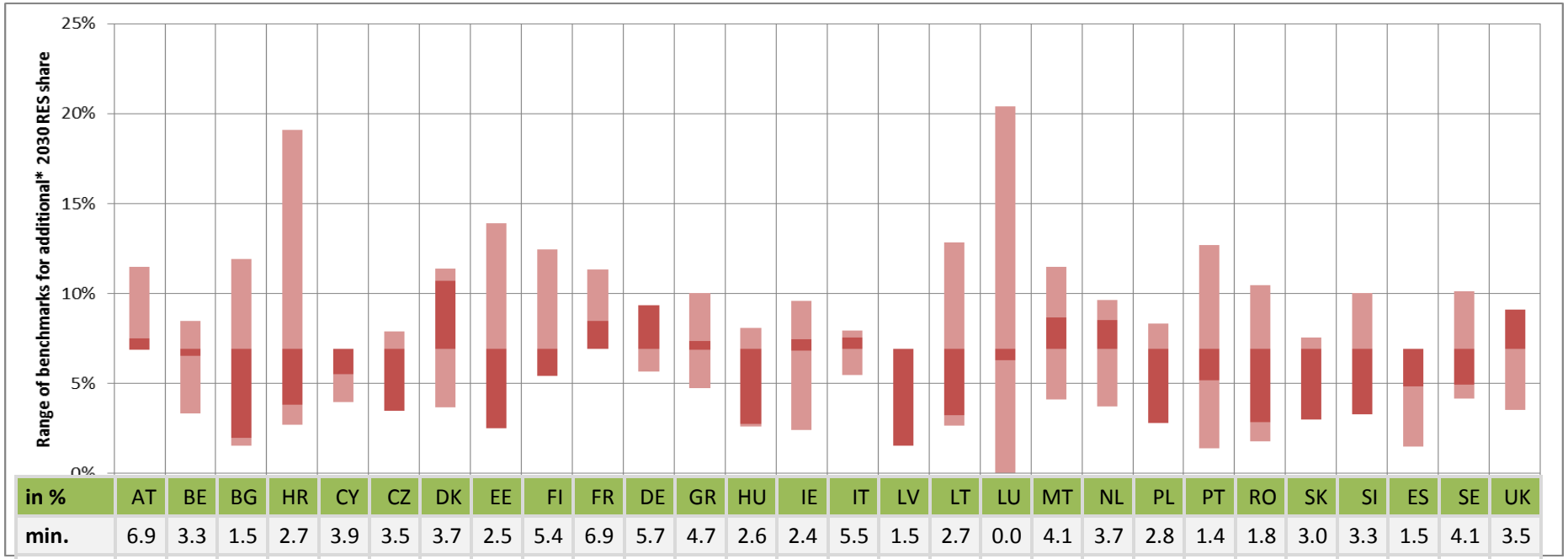
Overview on assessed benchmark options



in %	AT	BE	BG	HR	CY	CZ	DK	EE	FI	FR	DE	GR	HU	IE	IT	LV	LT	LU	MT	NL	PL	PT	RO	SK	SI	ES	SE	UK
min.	6.9	3.3	1.5	2.7	3.9	3.5	3.7	2.5	5.4	6.9	5.7	4.7	2.6	2.4	5.5	1.5	2.7	0.0	4.1	3.7	2.8	1.4	1.8	3.0	3.3	1.5	4.1	3.5
max.	11.5	8.5	11.9	19.1	6.9	7.9	11.4	13.9	12.5	11.3	9.3	10.0	8.1	9.6	7.9	6.9	12.8	20.4	11.5	9.6	8.3	12.7	10.4	7.6	10.0	6.9	10.1	9.1

- Overview of the **range of results of the different methods**:
  - The **dark red** bar shows benchmark stemming from the 2020 allocation method, the flat-rate and the default GDP approach → … indicate already known approaches
  - The **light red** bars show the results of the modified GPD, the potentials-based and the combined flat-rate and potentials-based approach. .

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Conclusions

- For certain countries like Cyprus and Italy: narrow range
  → benchmarks do not change very much
  – whatever method is applied.
- For other countries, like Luxembourg, Bulgaria, Croatia and Portugal: a wide range of different benchmark possibilities.
  - E.g. in Luxembourg, the upper limit of the range stems from the high GDP per capita, while the lower limit of the range stems from the low potential for renewable resources.
  - For Bulgaria, Croatia and Portugal it is the other way around.

- Most countries with significant low-cost potentials for renewable energies are not economically strong → face challenges financing the respective renewable energy deployment

  → Possible solution: strengthen the cooperation between member states by a *stronger emphasis on the use of cooperation mechanisms* or by *introducing regional targets* or *benchmarks*.

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Regional targets as a way forward?

- One common target for a defined region consisting of several MS.
- If self-imposed commitments fall short of meeting the overall 2030 target, the European Commission has to react to that problem → **regional targets might be an alternative way to reach a consensus** between the MS.
- Additionally, **regional targets** would also **have the advantage** that **countries need to cooperate**
  - for developing **joint renewable strategies**, and
  - for **planning of accompanying, coherent infrastructure development**

→ **reduce the overall costs** for deploying renewables.

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Thanks for your attention!

Issue Paper No. 4:
The EU 2030 Framework for renewables
– **effective effort sharing through public benchmarks**

Interested in further background information?

→ **www.towards2030.eu**

Interested in the dialogue process?

→ **http://platform.towards2030.eu**

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