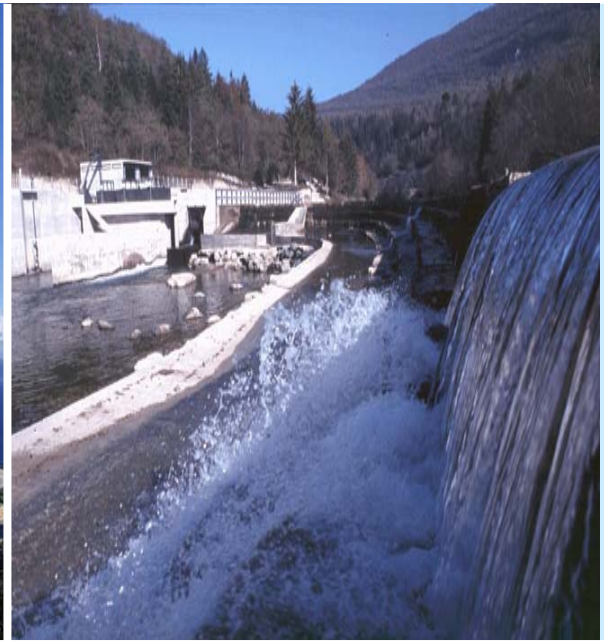
European Commission



Communication on Support Schemes for electricity from renewable energy sources

External Costs of energy and their internalisation in Europe

Beatriz Yordi
DG Energy and Transport

External costs and support systems for renewable energy




Best solution: Create a level playing field

- ☒ Internalise external costs of all energy sources
- ☒ Abolish energy-related subsidies
- ☒ Finish the internal energy market

2nd best solution: Compensate renewables

- ☑ Use support systems in order to compensate renewables for avoided external costs & external benefits (environment, innovation, employment, growth)

Principles of the Renewables Directive 2001/77/EC

Main objective: Promotion of electricity from renewable energy sources

- Quantified national targets for consumption of electricity from renewable sources of energy
- National support schemes plus, if necessary, a harmonised support system
- Simplification of national administrative procedures for authorisation
- Guaranteed access to transmission and distribution of electricity from renewable energy sources

Where are we?

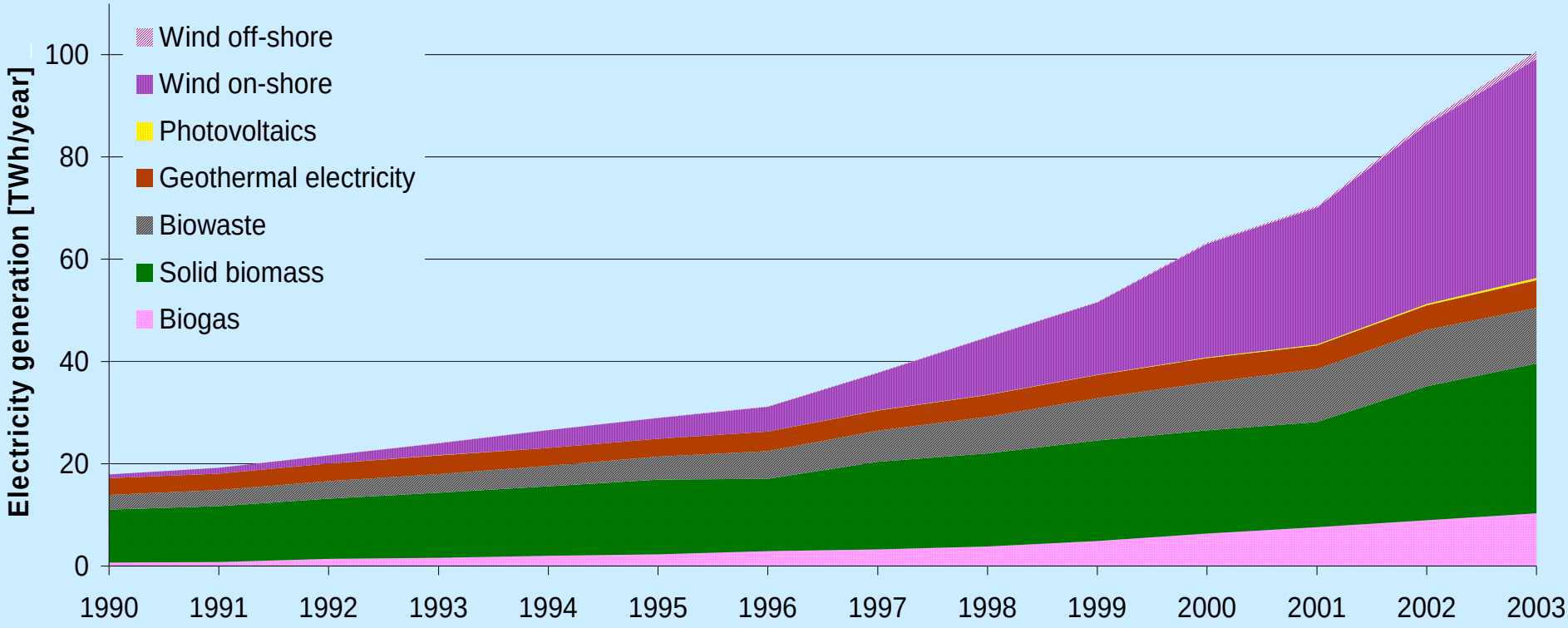
Setting of national targets

- ✓ All EU25 Member States have adopted national targets, in line with the reference values listed in Annex I of Directive 2001/77/EC. The New EU10 targets are published in the Accession Treaty in April 2003.
- ✓ Targets have been also agreed with Bulgaria and Romania:
  - -Bulgaria from current 6% to 11% by 2010.
  - -Romania from current 28% to 33% by 2010

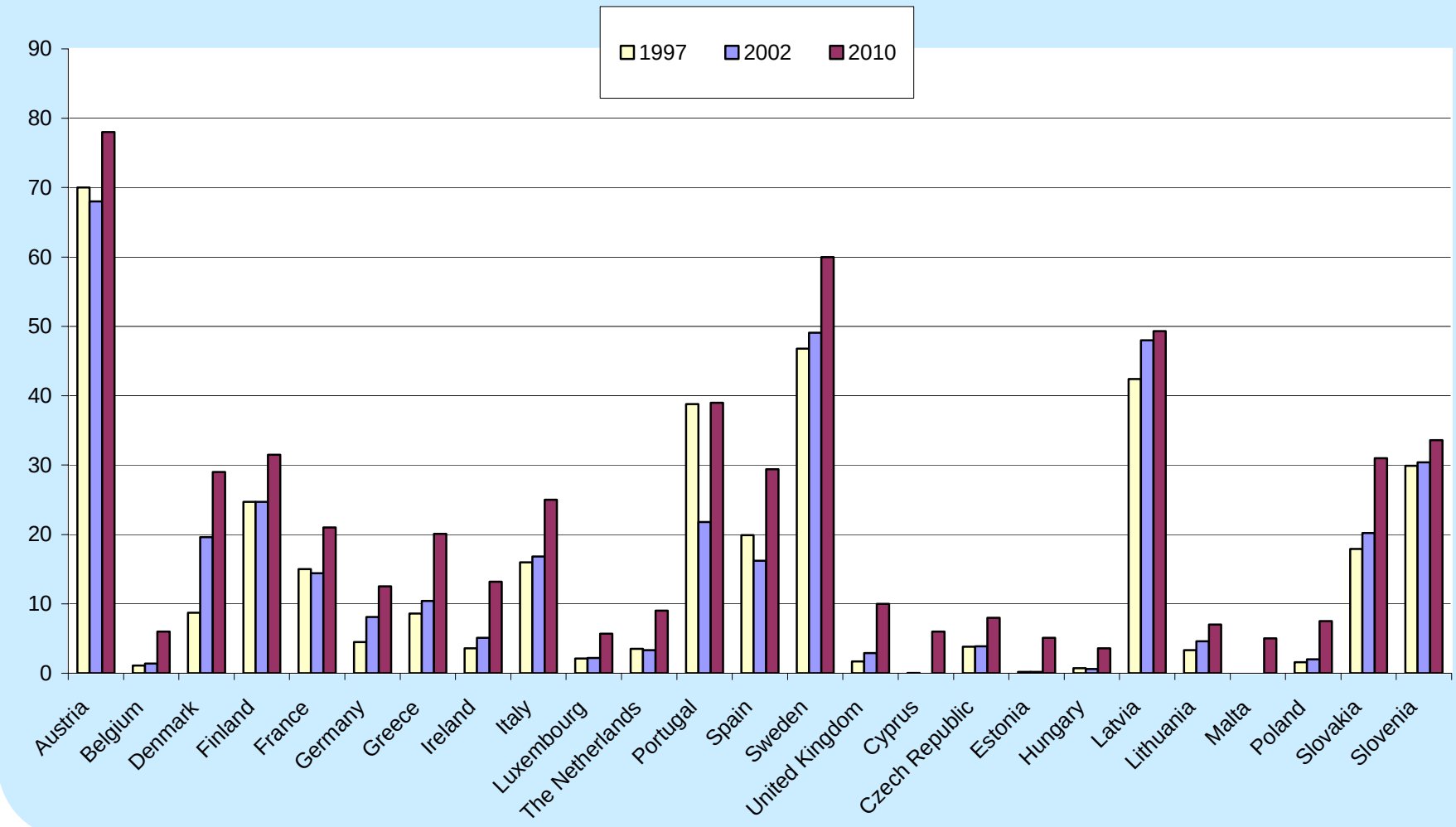
The 2010 target

- ✓ If EU-25 Member States (+BL+RO) meet these national targets, the 2010 target of 21% at 2010 will be achieved.

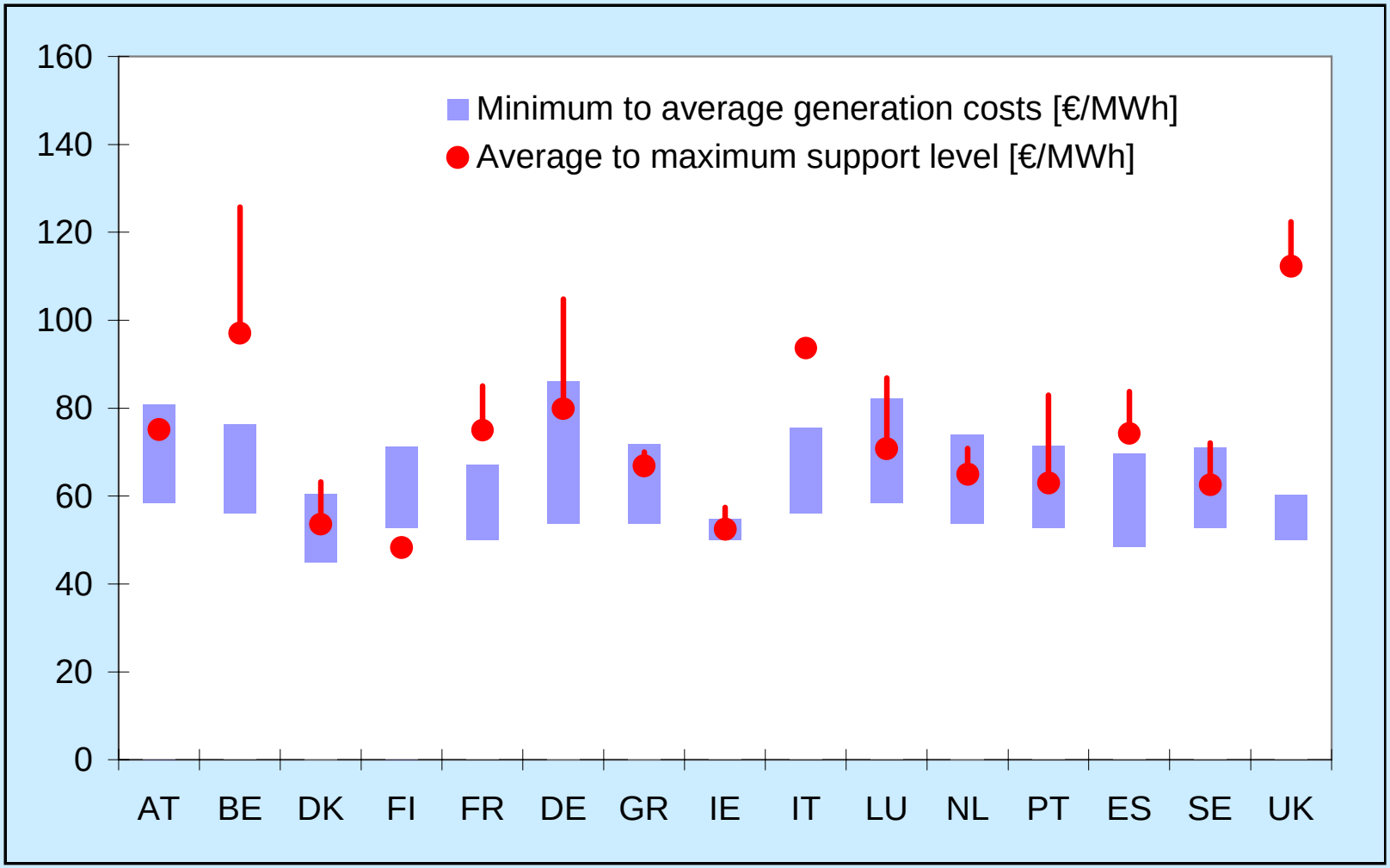
Production of ‘new’ RES-E (without hydropower) in 2003 is equivalent to the combined overall electricity production in Portugal, Denmark and Slovenia



Share of green electricity in the Member States' consumption of electricity compared to the national targets for 2010



Price ranges for direct support of wind onshore in EU-15 member states compared to the long term marginal generation costs



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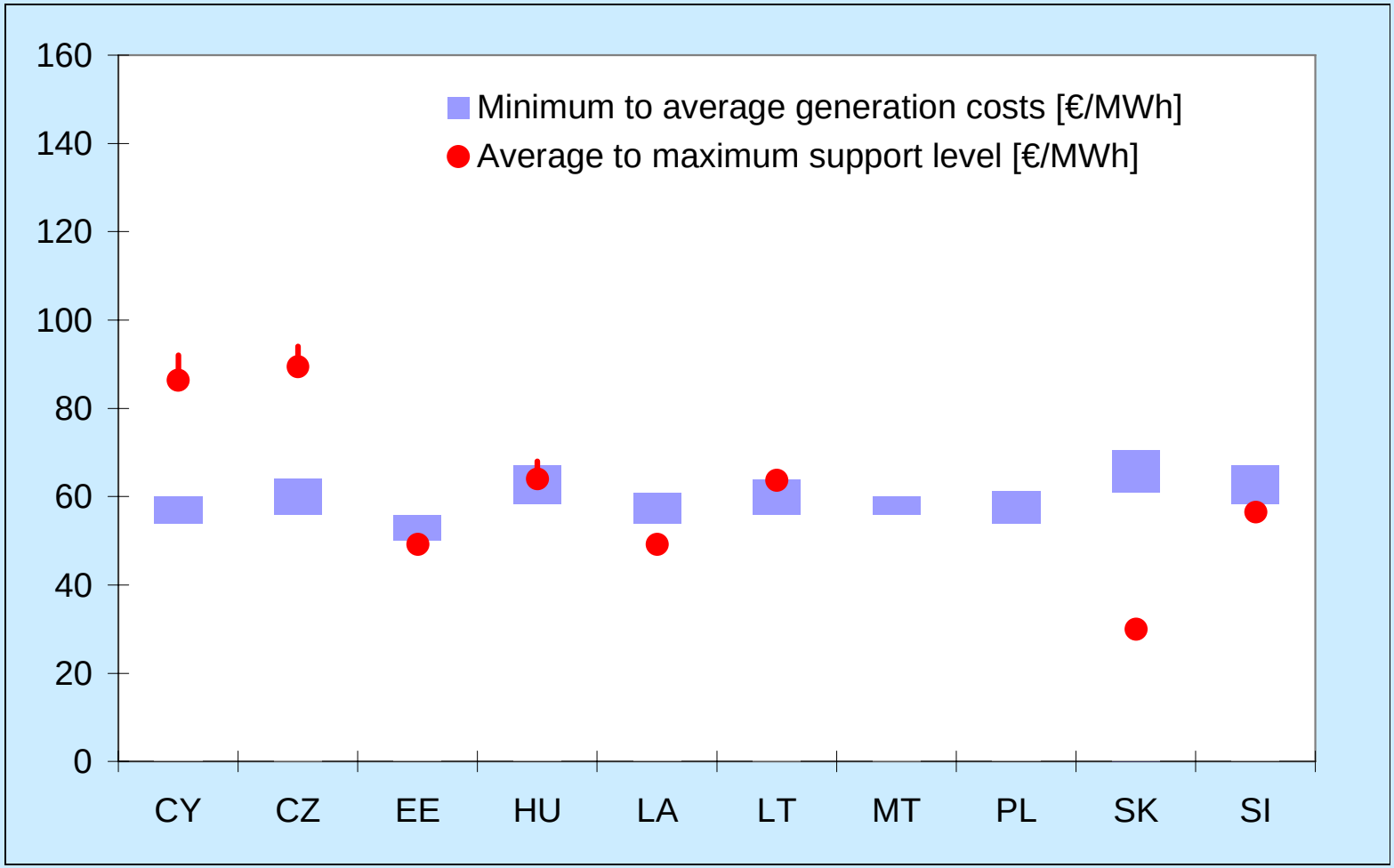
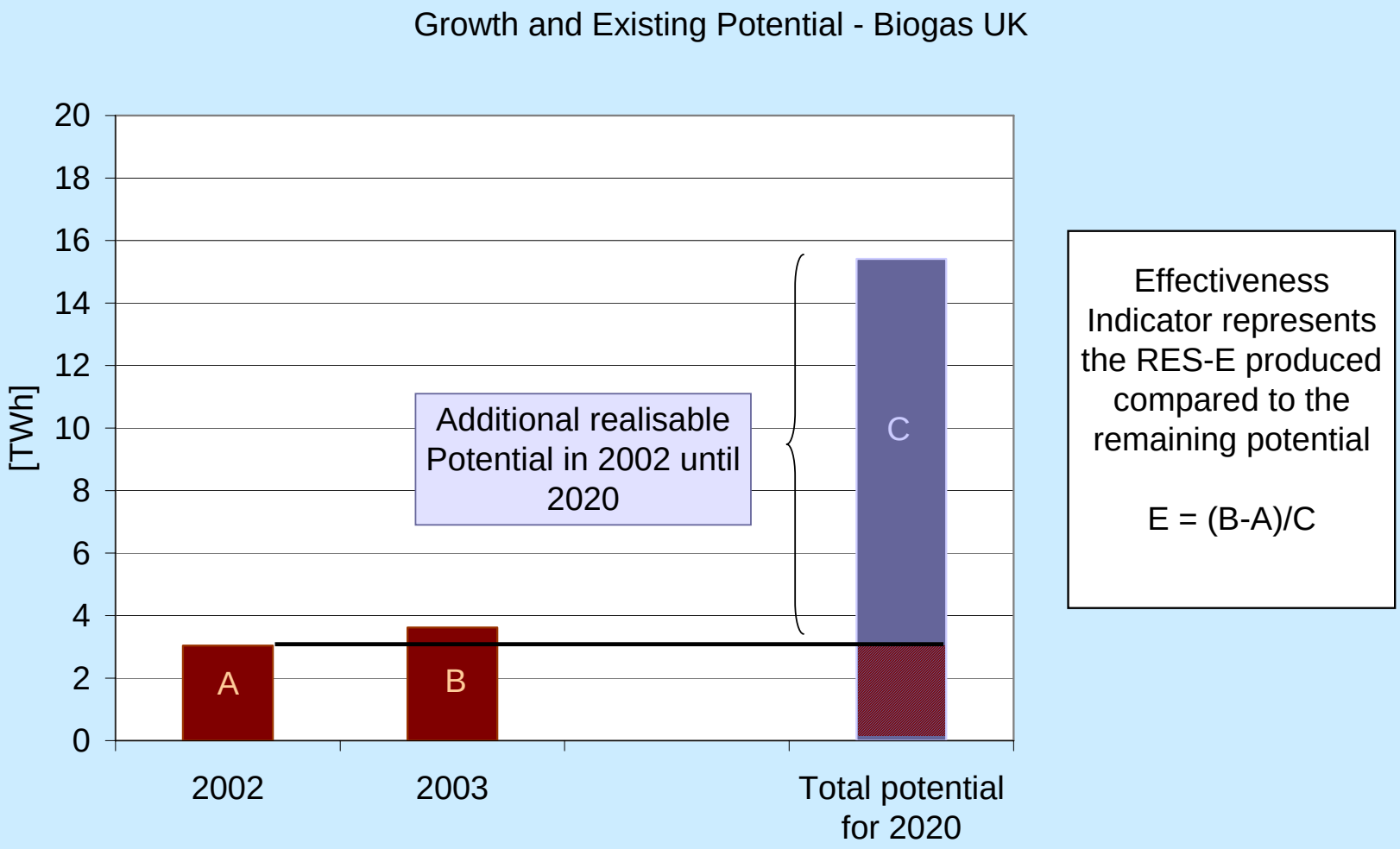


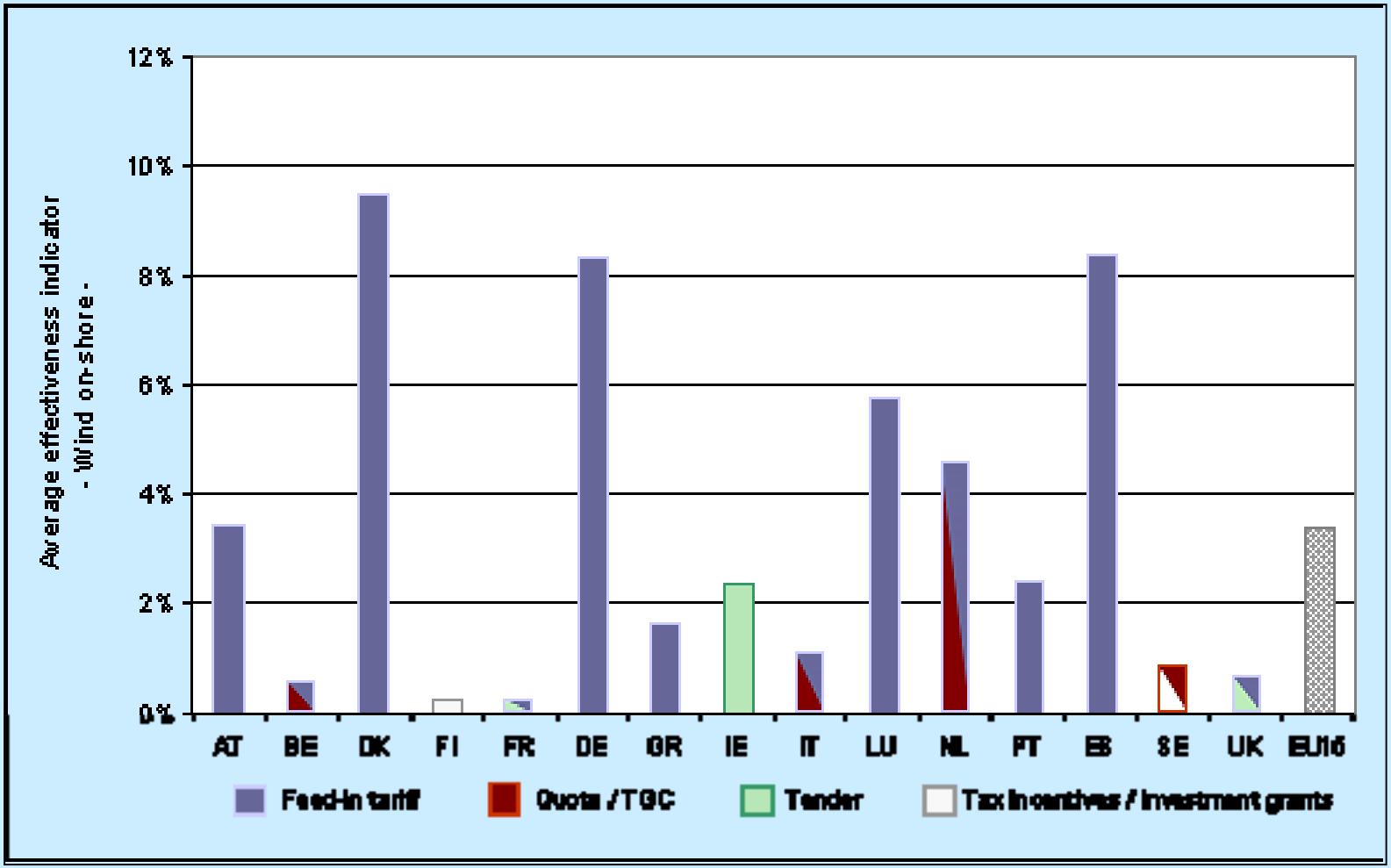
2003 effectiveness indicator – example biogas in UK



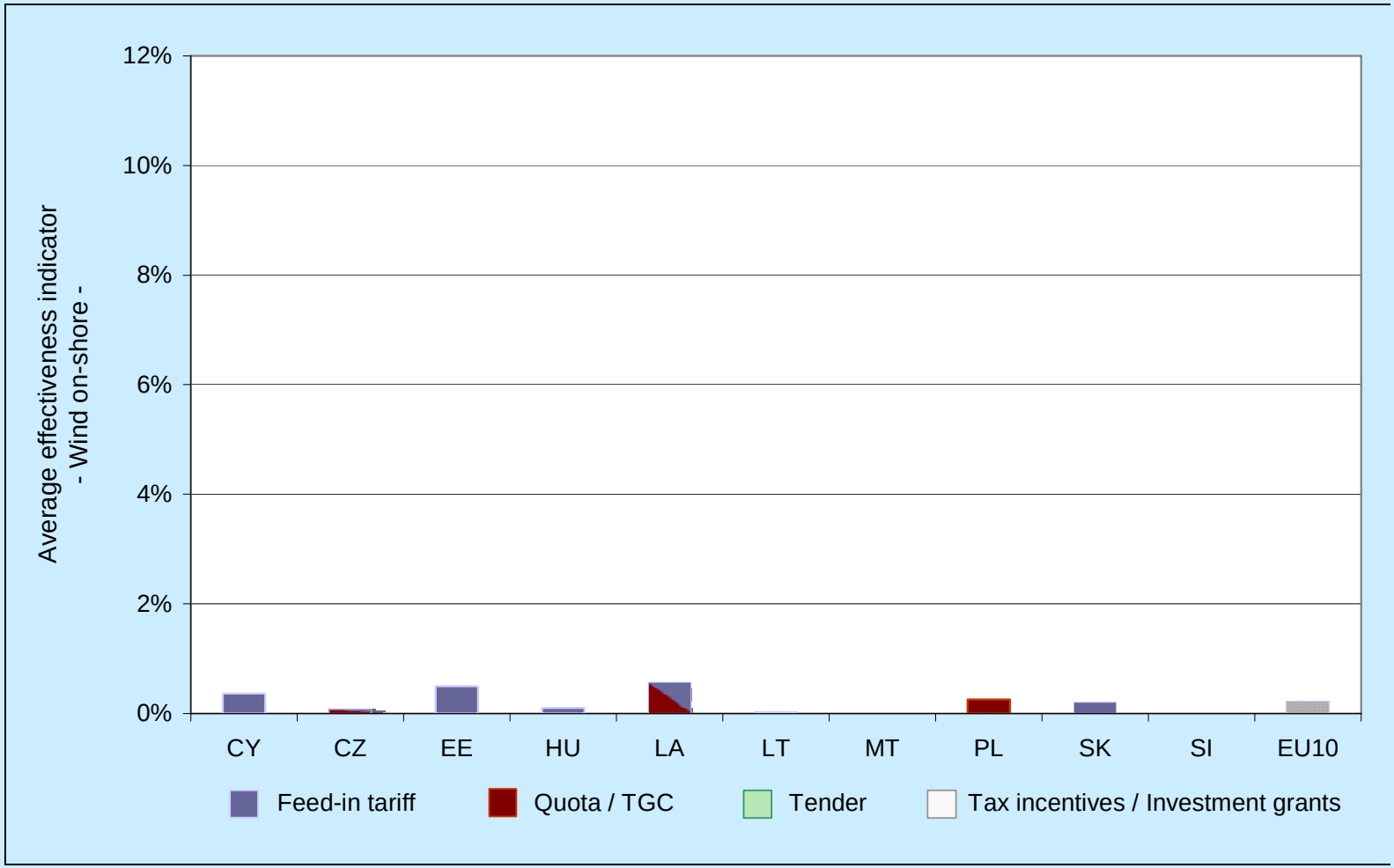
Effectiveness Indicator represents the RES-E produced compared to the remaining potential

E = (B-A)/C

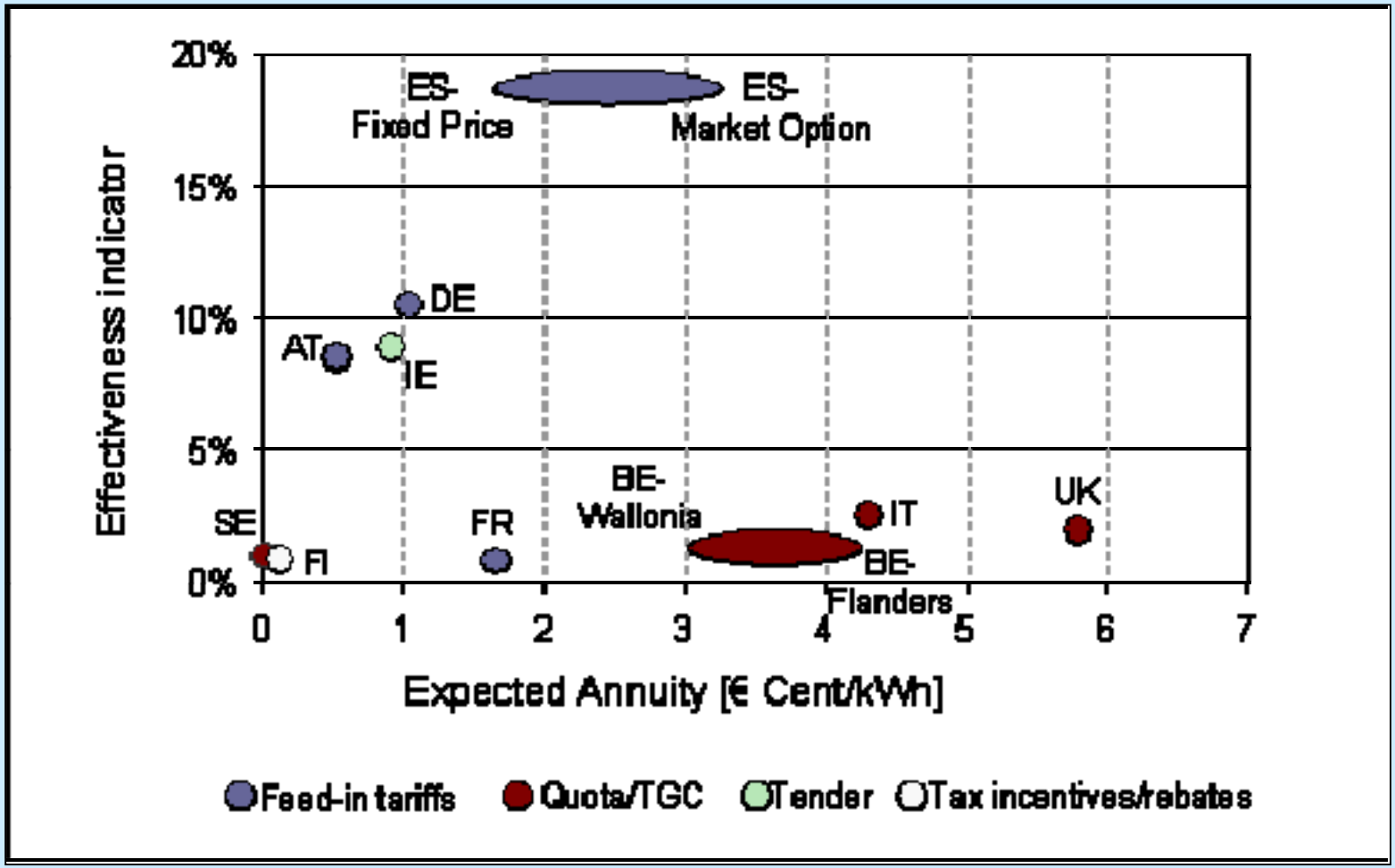
Effectiveness indicator for wind onshore electricity in the period 1998-2004 EU-15.



Effectiveness indicator for wind onshore electricity in the period 1998-2004 EU-10



Historically observed efficiency of support for Wind: effectiveness indicator in relation to the annuity of expected profit



Evaluation of support schemes

Main conclusions

- Feed-in tariffs have been **more effective and more efficient** than quota systems
- High prices for tradable green certificates due to higher risk cost and immature certificate markets?
- Harmonisation would be premature, more experience needs to be gained, especially with quota systems
- Administrative and grid barriers need to be addressed

Recommendations to Member States

Optimise the support system

- Adapt the support level to the generation costs
  - Half of the Member States give not enough support to ensure deployment of RES-E
- Increase stability
  - instability increases risk cost
  - avoid stop-and-go nature of the support
- Reduce investment risk
  - especially green certificate markets need a high liquidity

Recommendations to Member States

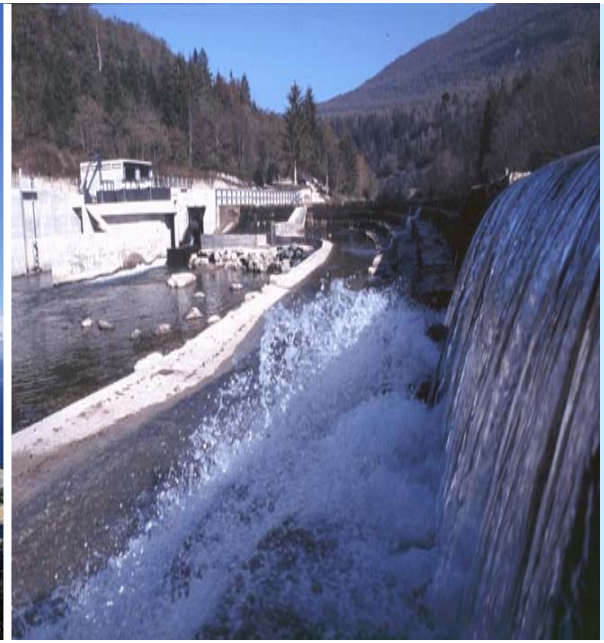
Optimise the framework conditions

- Reduce administrative barriers
  - reduce administrative requirements
  - use clear guidelines, one-stop-authorisation agencies and pre-planning mechanisms
- Ensure fair grid access
  - grid access conditions must be transparent and non-discriminatory
  - grid infrastructure should be improved to accommodate RES-E, associated costs should be covered by grid operator

Support for renewables

What's next?

- 2020 targets (overall and/or by sectors)
- Communication on the share of RES-E by 2006
- Directive proposal on Heating & Cooling
- Review of the biofuels Directive



Thank you for your attention!

Support for renewables

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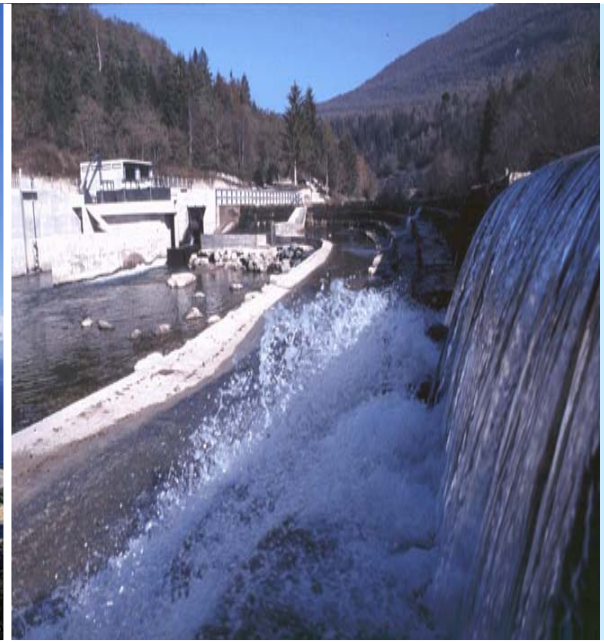
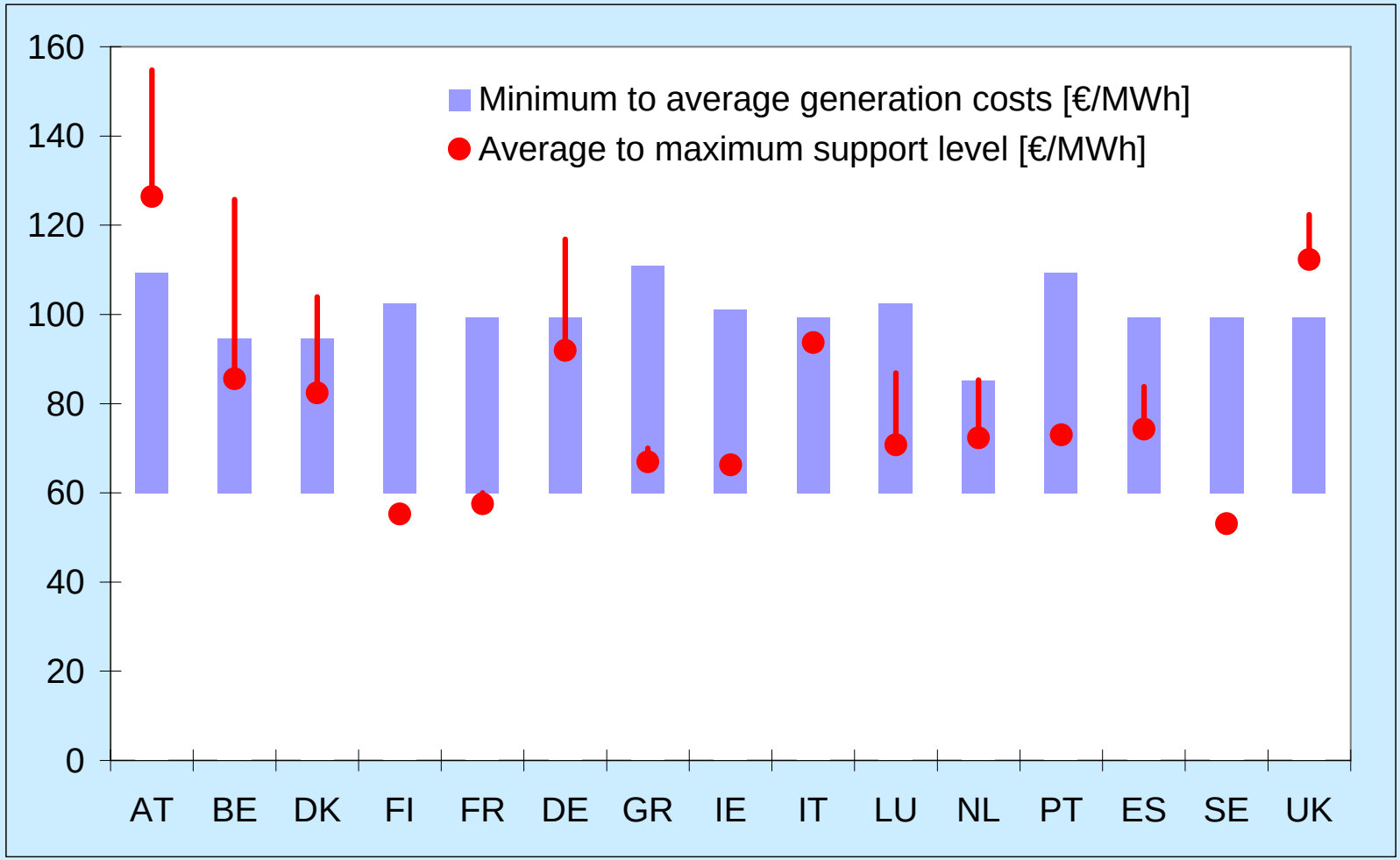
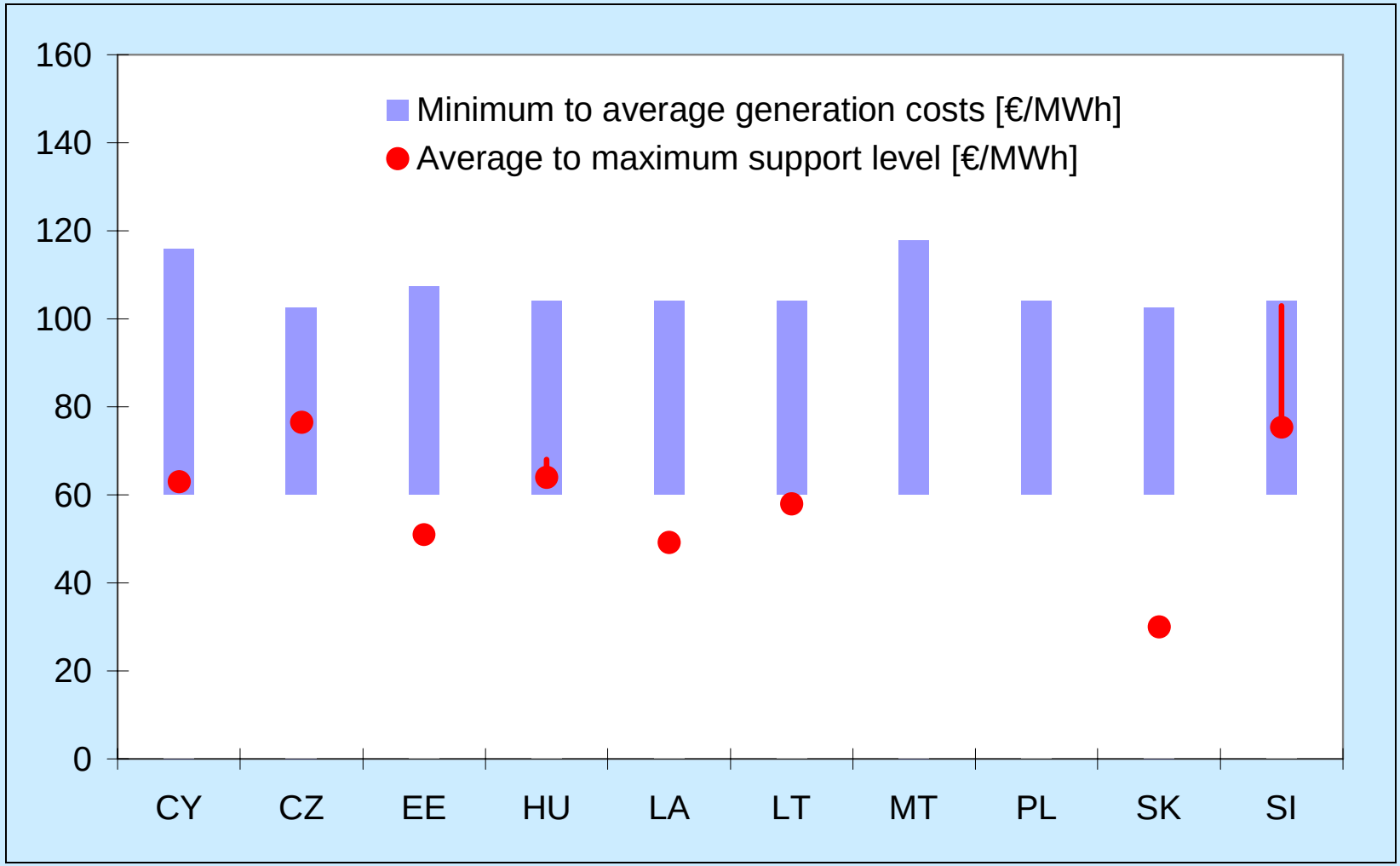


Thank you for your attention!

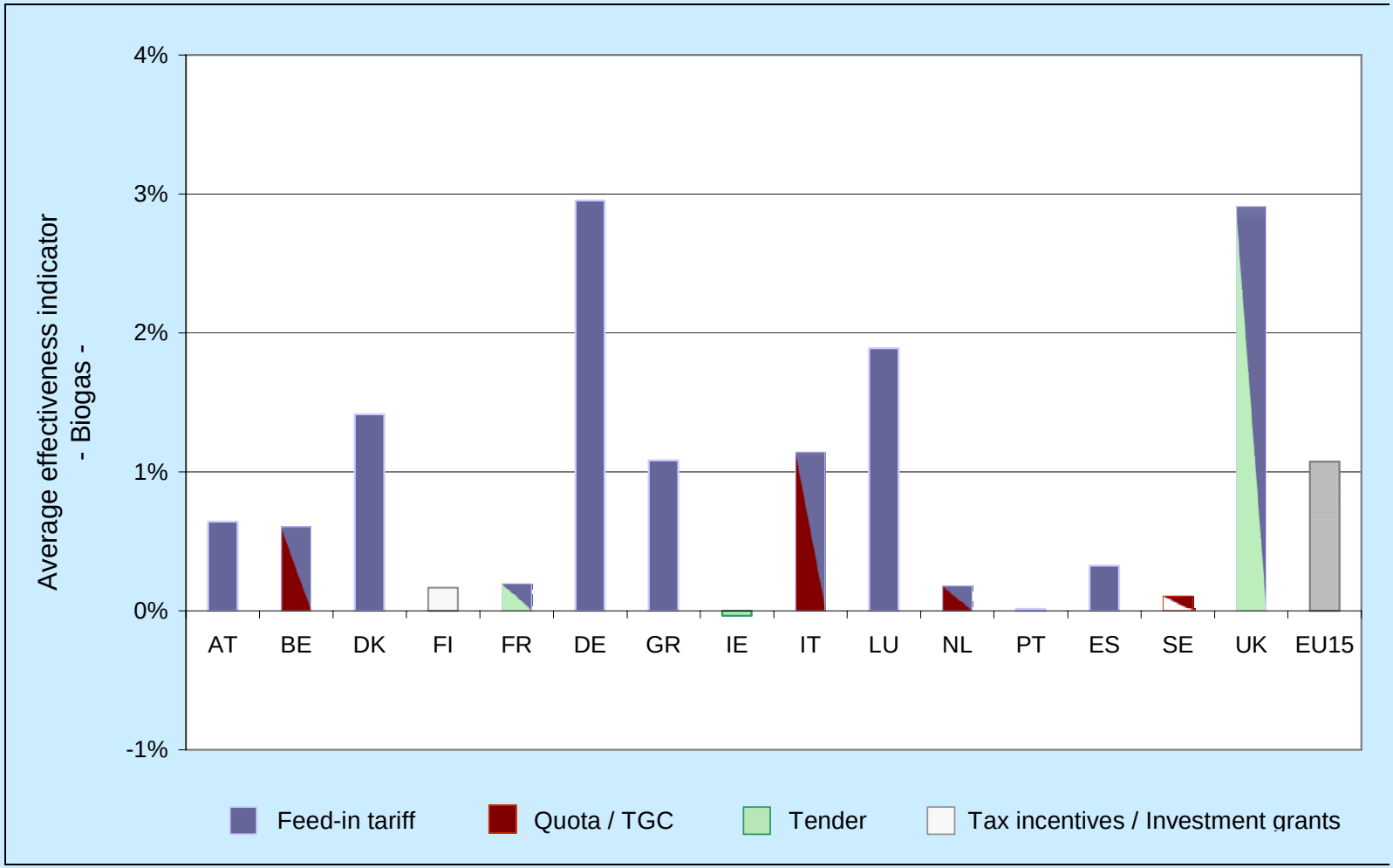
Price ranges for direct support of agricultural biogas in EU-15 member states compared to the long-term marginal generation costs.



Price ranges for supported agricultural biogas in EU-10 member states compared to the long-term marginal generation costs.



Effectiveness indicator for biogas electricity in the period 1998-2003.



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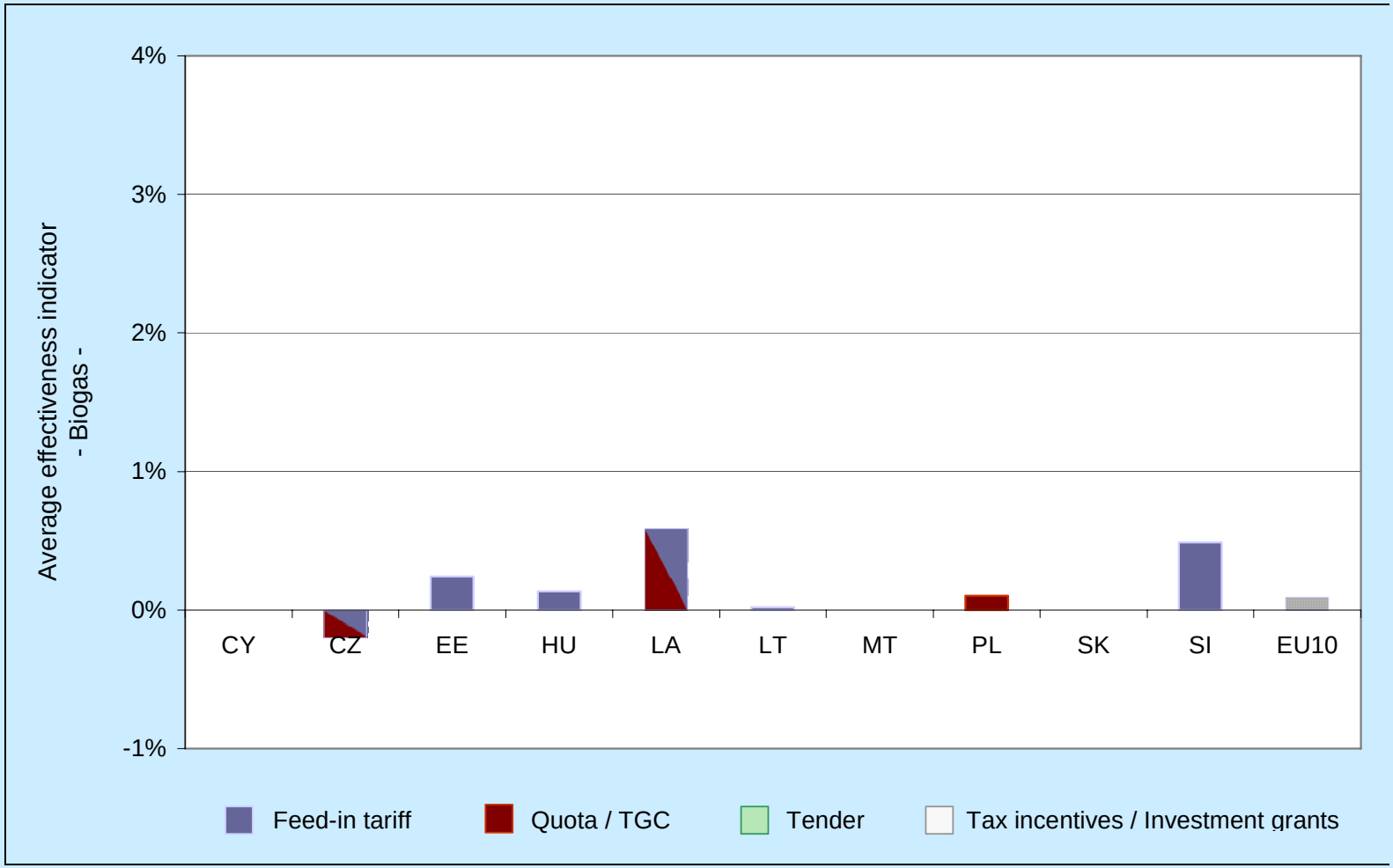
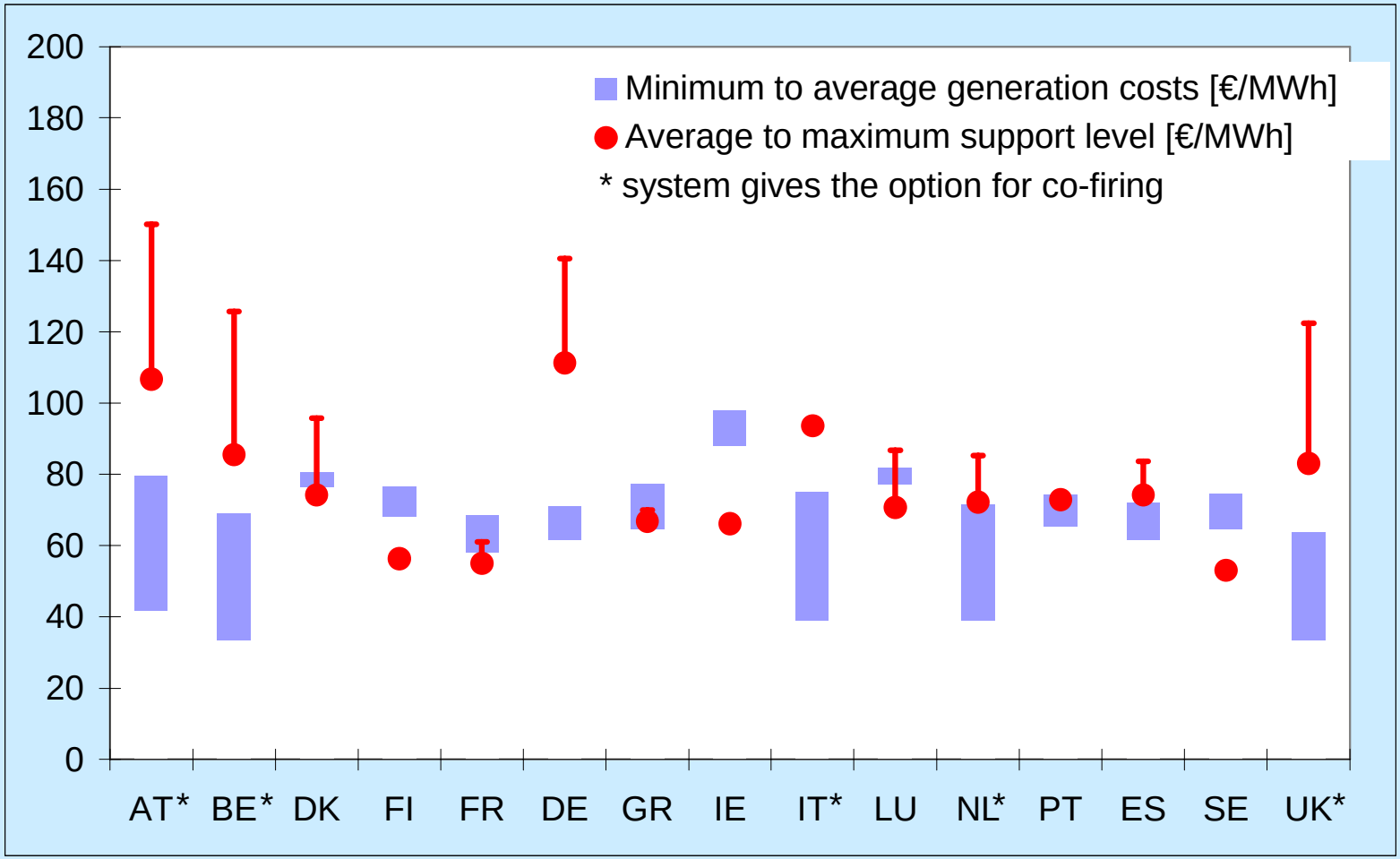


Price ranges for supported biomass electricity production from forestry residues in EU-15 member states compared to the long-term marginal generation costs.



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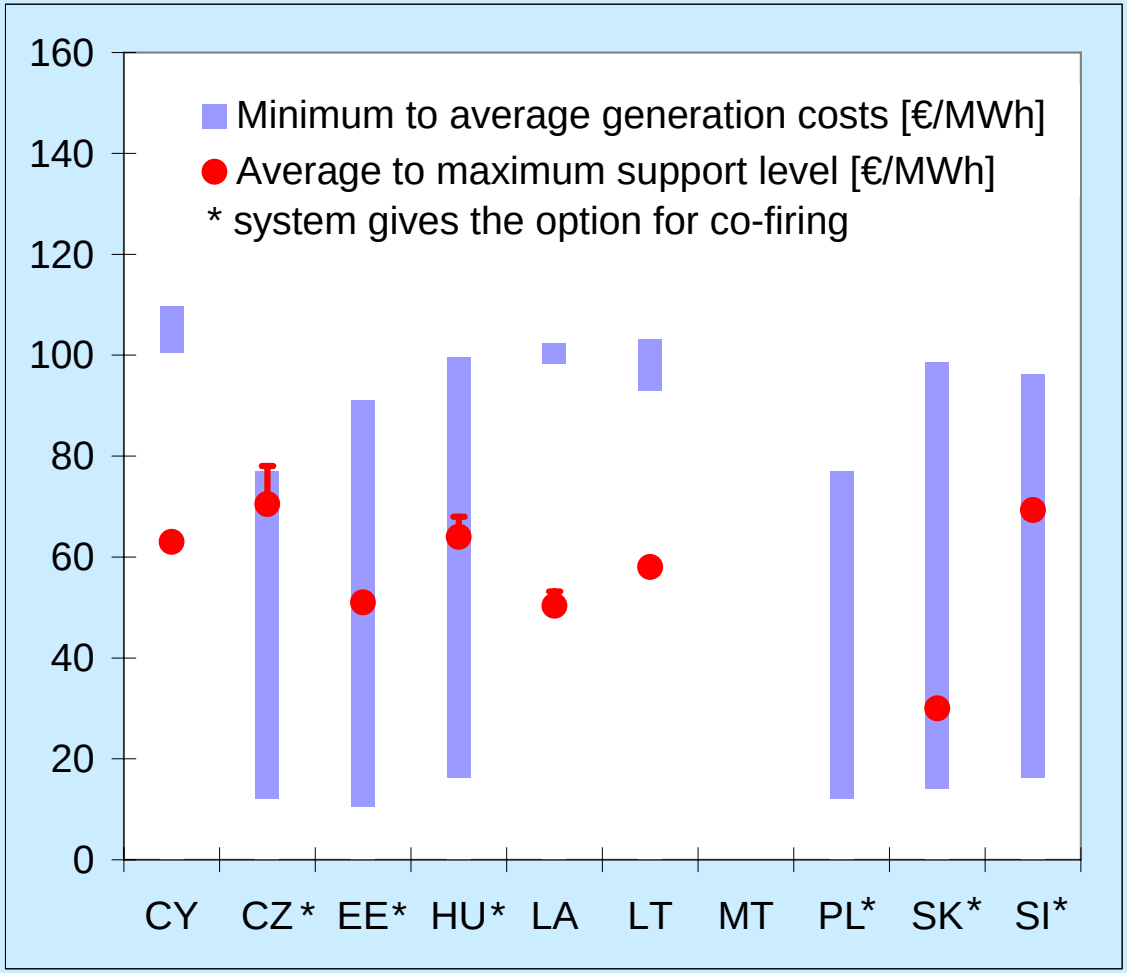

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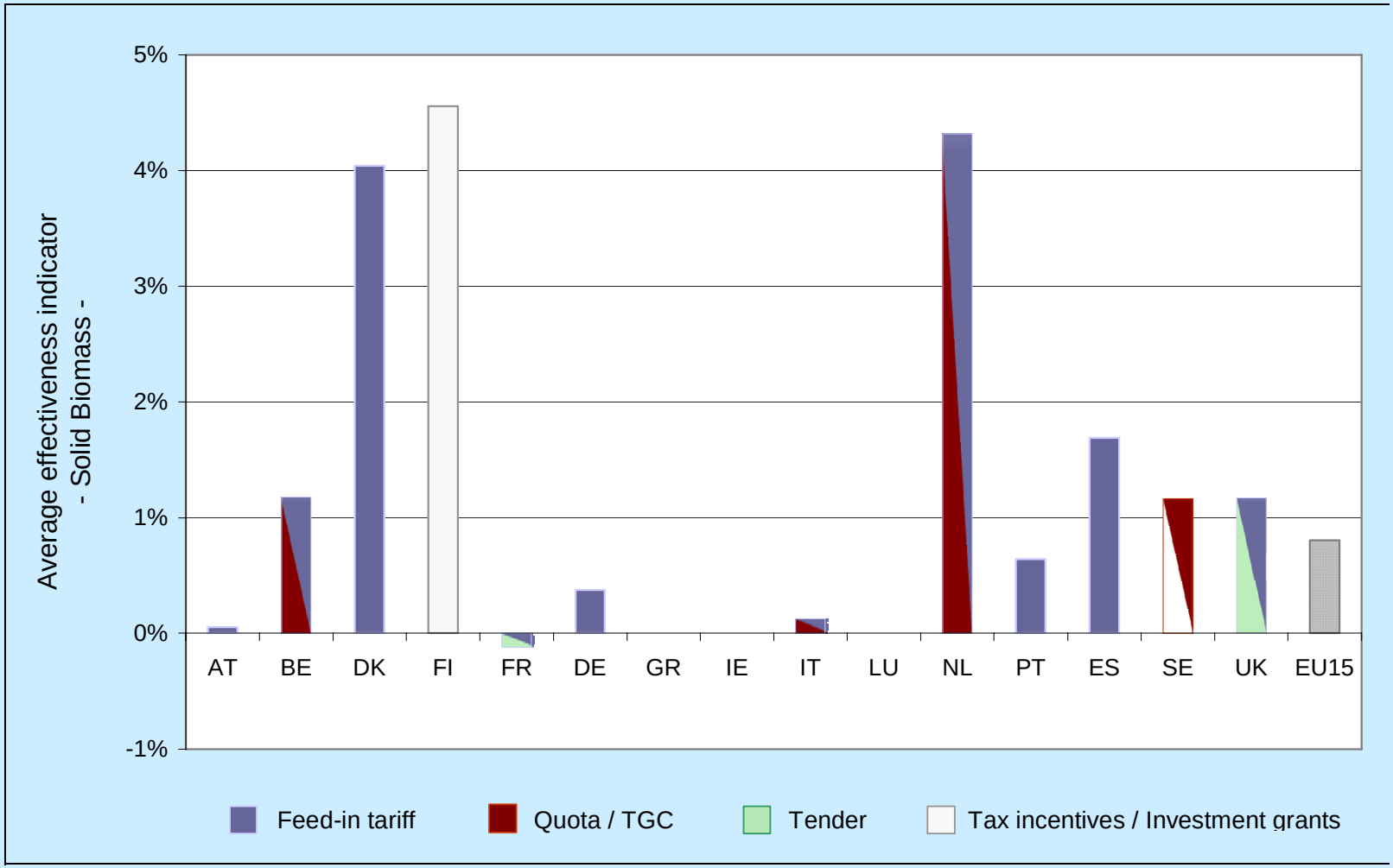

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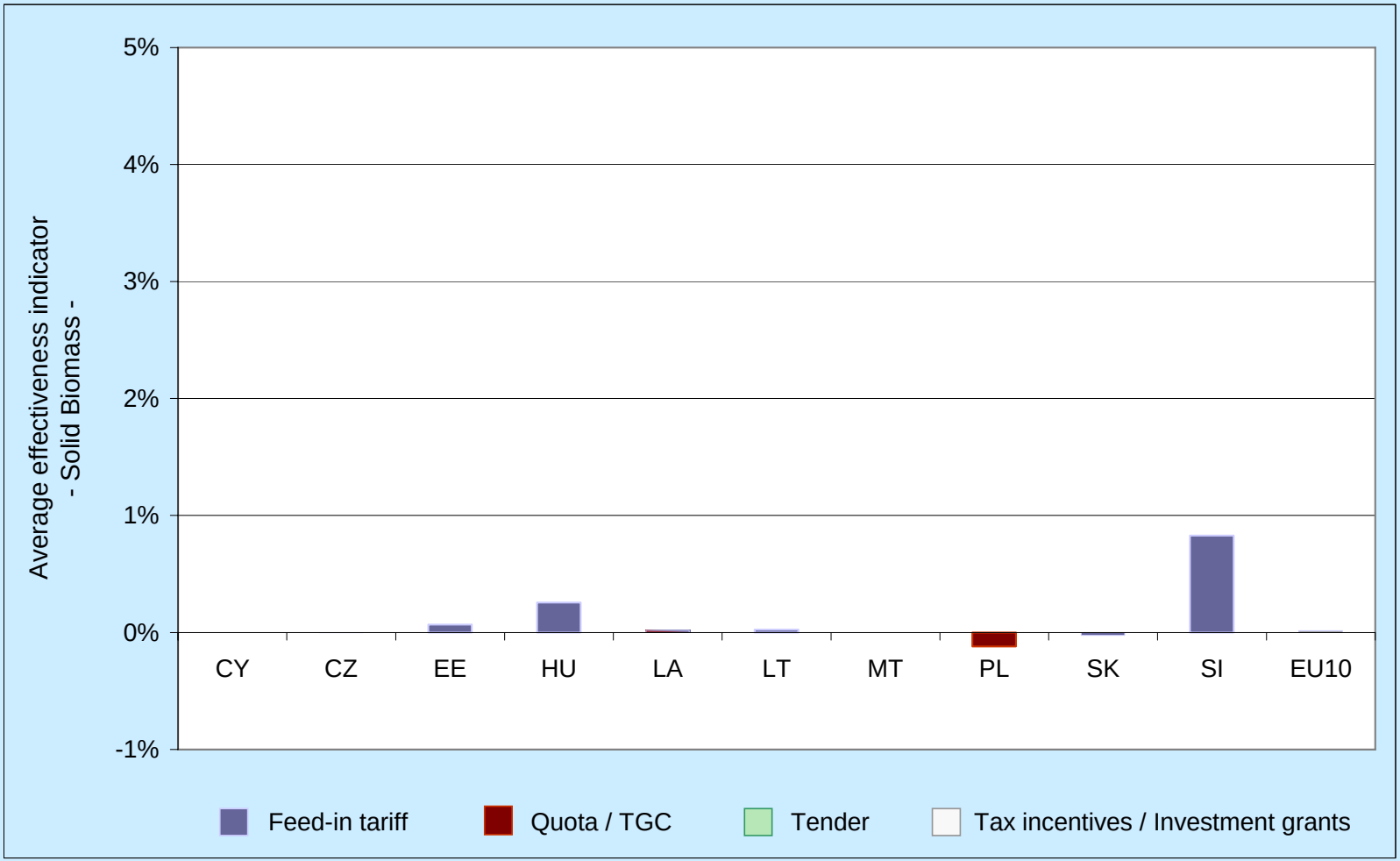
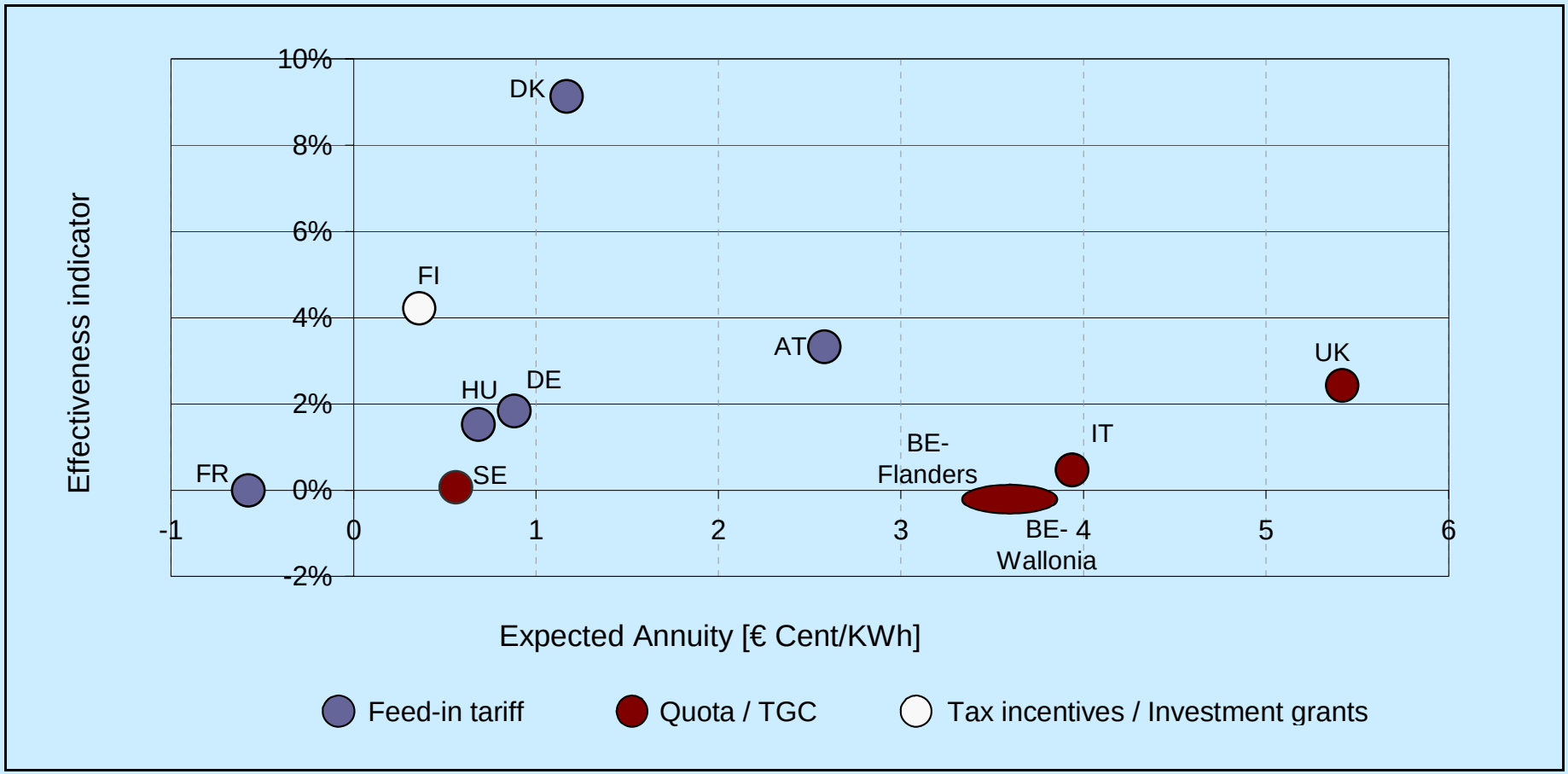
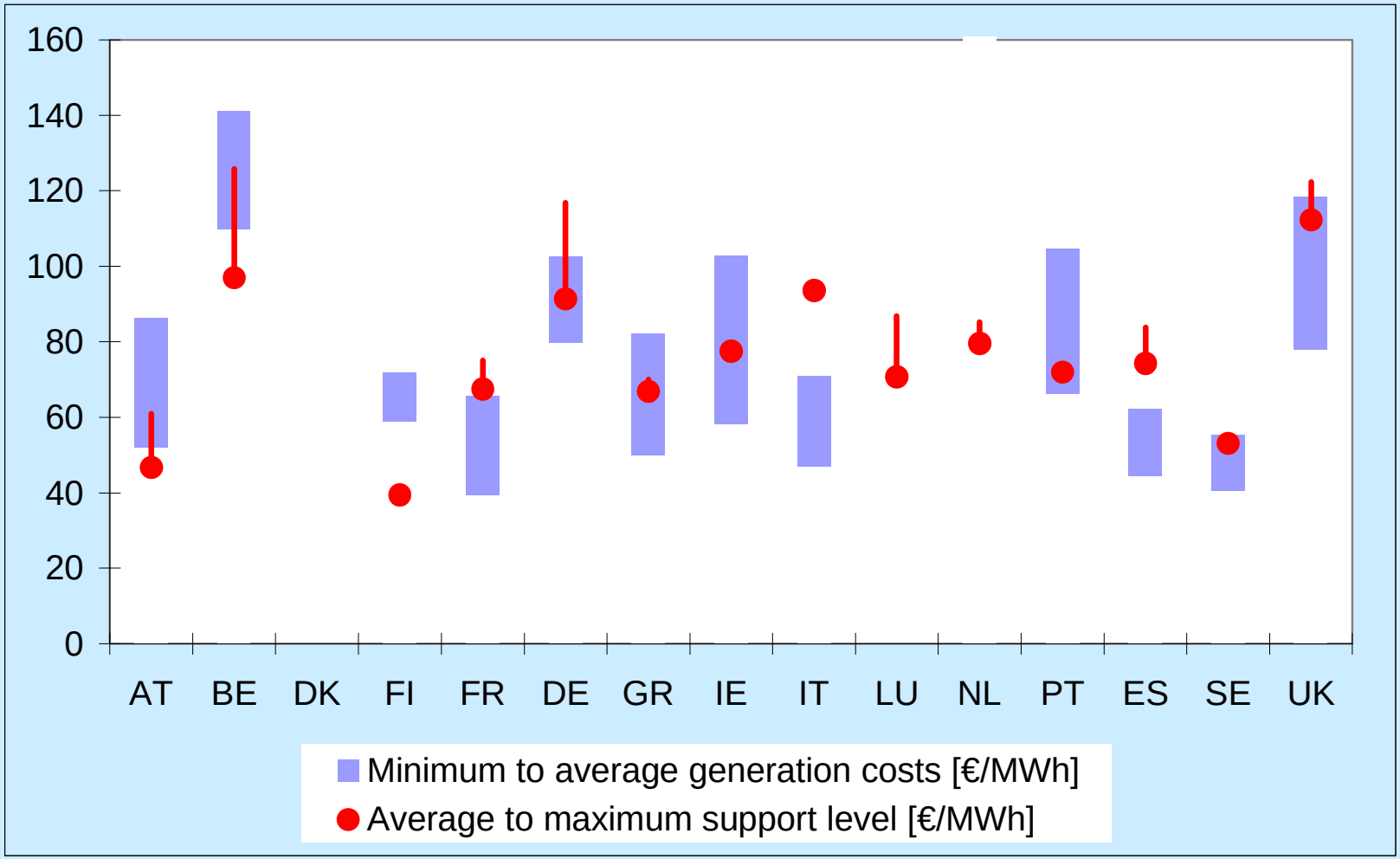


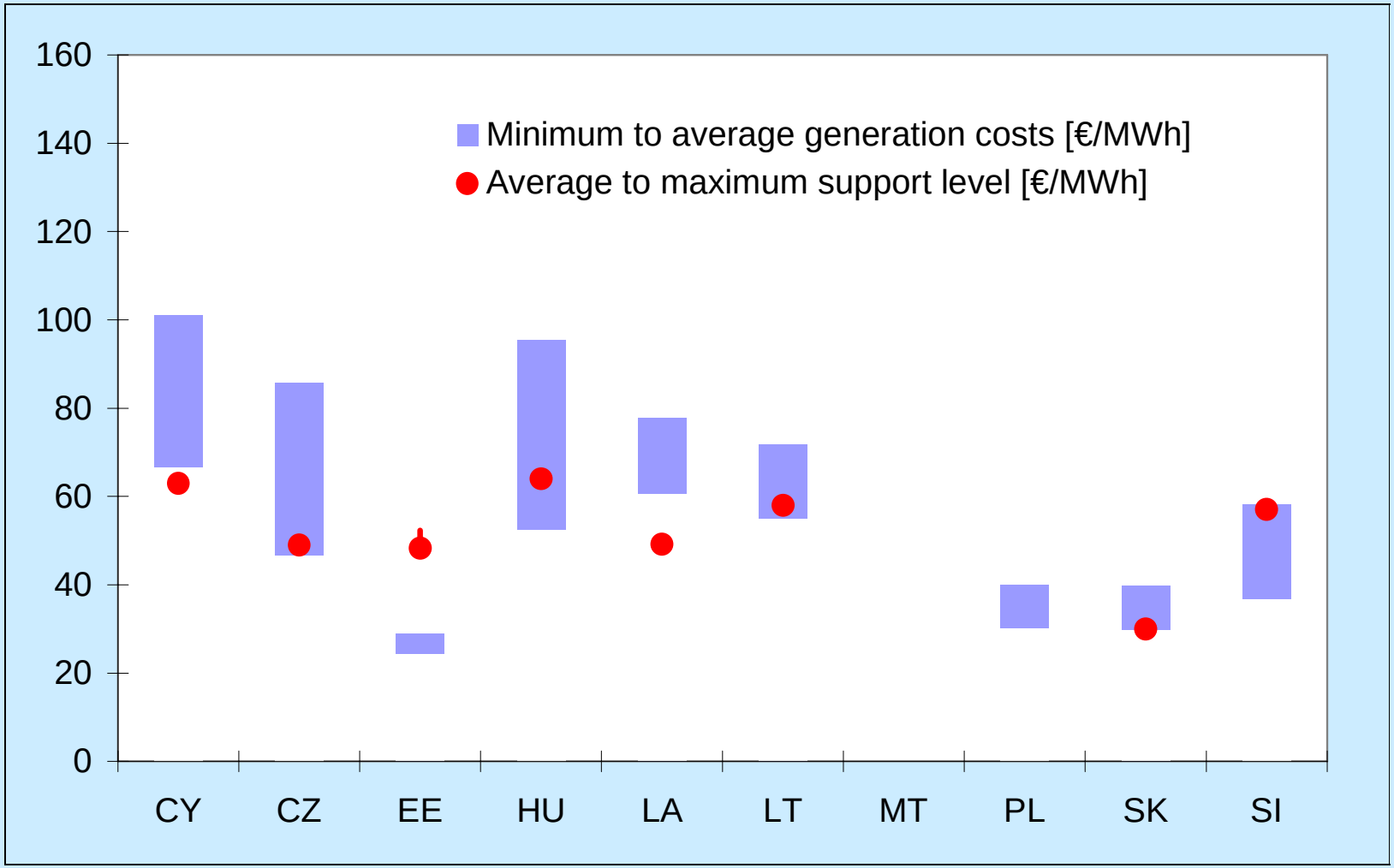
Historically observed efficiency of support: effectiveness indicator in relation to the expected annuity. BIOMASS



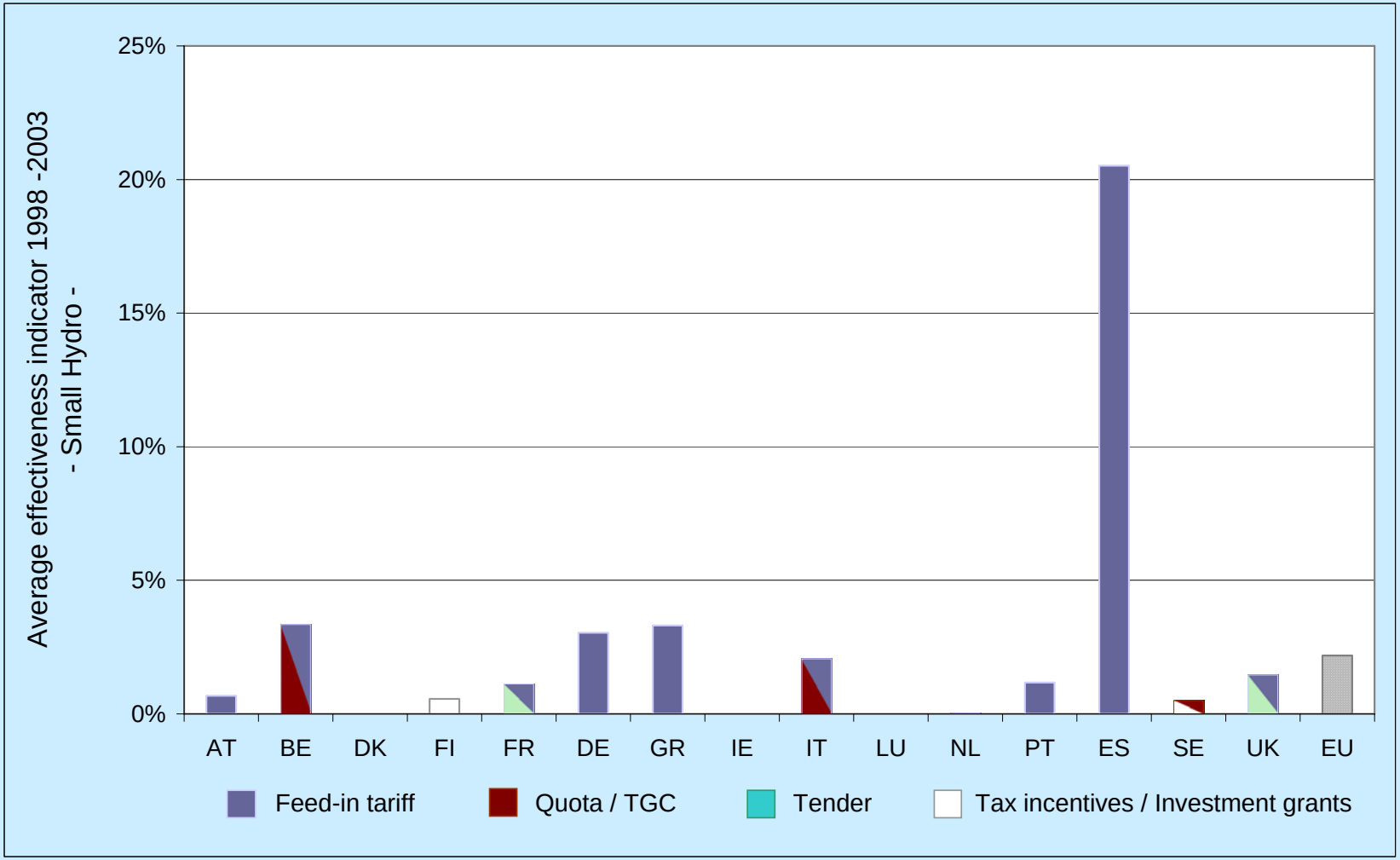
Price ranges for direct support of small-scale hydro in EU-15 Member States compared to the long-term marginal generation costs.



Price ranges for direct support of small-scale hydro in EU-10 Member States compared to the long-term marginal generation costs.



Effectiveness indicator for small hydro electricity in the period 1998-2003.



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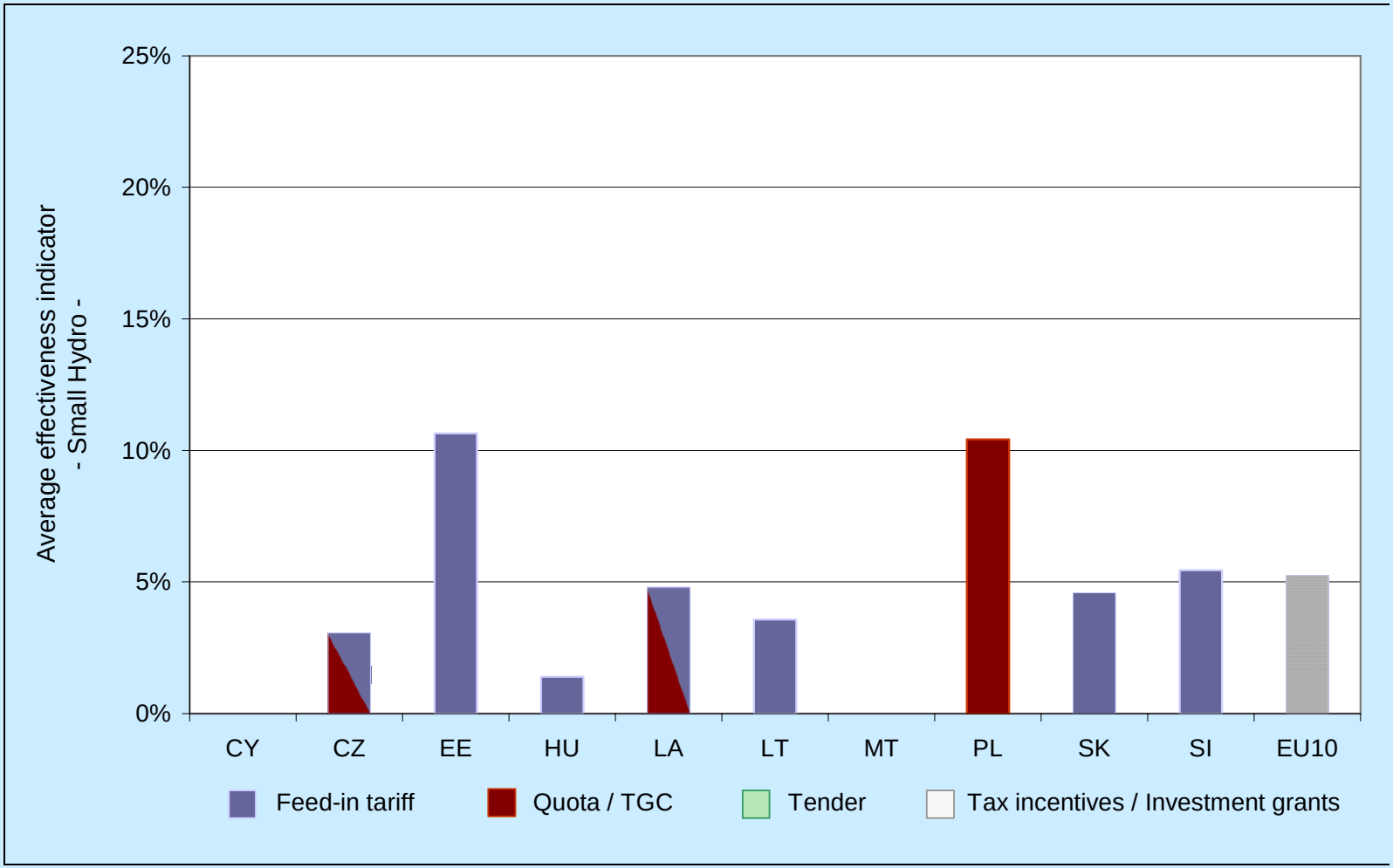
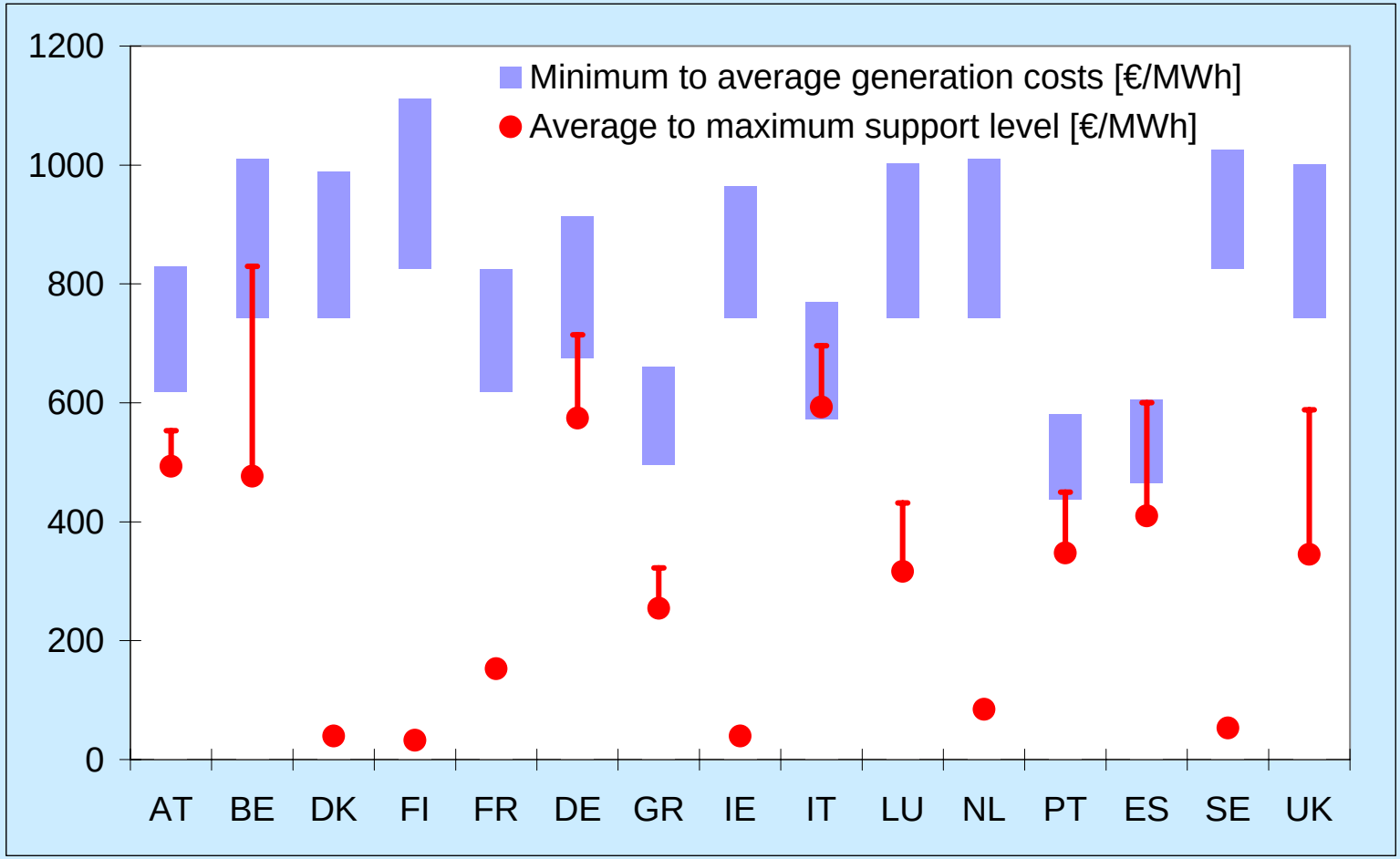


Price ranges (average to maximum support) for direct support of photovoltaic electricity in EU-15 Member States compared to the long-term marginal generation costs.



Effectiveness indicator for photovoltaic electricity in the period 1998-2004.