



# Composition and Drivers of Energy Prices and Costs: Case Studies in Selected Energy Intensive Industries

Final workshop, 08 March 2019



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# Methodology



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# Objectives

1. Provide **well-grounded, bottom-up evidence** of the composition and drivers of energy prices and energy costs faced by industrial operators in energy intensive sectors in the EU.
2. Assess the impact of energy prices and costs and their components on **the cost competitiveness** and, where possible, **international competitiveness** of energy intensive sectors in the EU.

# Main methodological aspects

- **Bottom-up approach** (analysis based on disaggregated data, collected at the plant level)
- Sampling criteria (sectors, geographical distribution, company size, production technology/range)
- Data collection technique (questionnaire)
- Time span (2008 -2017)
- International comparison (third party data)
- **Confidentiality** (strictest possible)
- **Data aggregation** (regional averages, EU averages, simple and weighted averages)

# Sample

	Number of plants by geographical region				Representativeness in 2016
Subsector	Central-Eastern Europe	North-Western Europe	Southern Europe	Total	Share of turnover (T) or production capacity (C)
Bricks and roof tiles	11	36	11	58	11% T
Wall and floor tiles	8	4	10	22	12% T
Glass tableware	2	4	6	12	92% T
Packaging glass	8	8	8	24	17% T
Aluminium primary	1	5	4	10	60% T
Aluminium secondary	2	1	6	9	n.a.
Aluminium downstream	1	4	3	8	13% T
Steel EAF	3	13	2	18	14% C
Steel BOF	3	4	0	7	26% C
Nitrogen fertiliser	4	1	3	8	17% C
Refineries	1	8	4	13	19% C
<b>TOTAL</b>	<b>44</b>	<b>88</b>	<b>57</b>	<b>194</b>	<b>-</b>

# Key findings



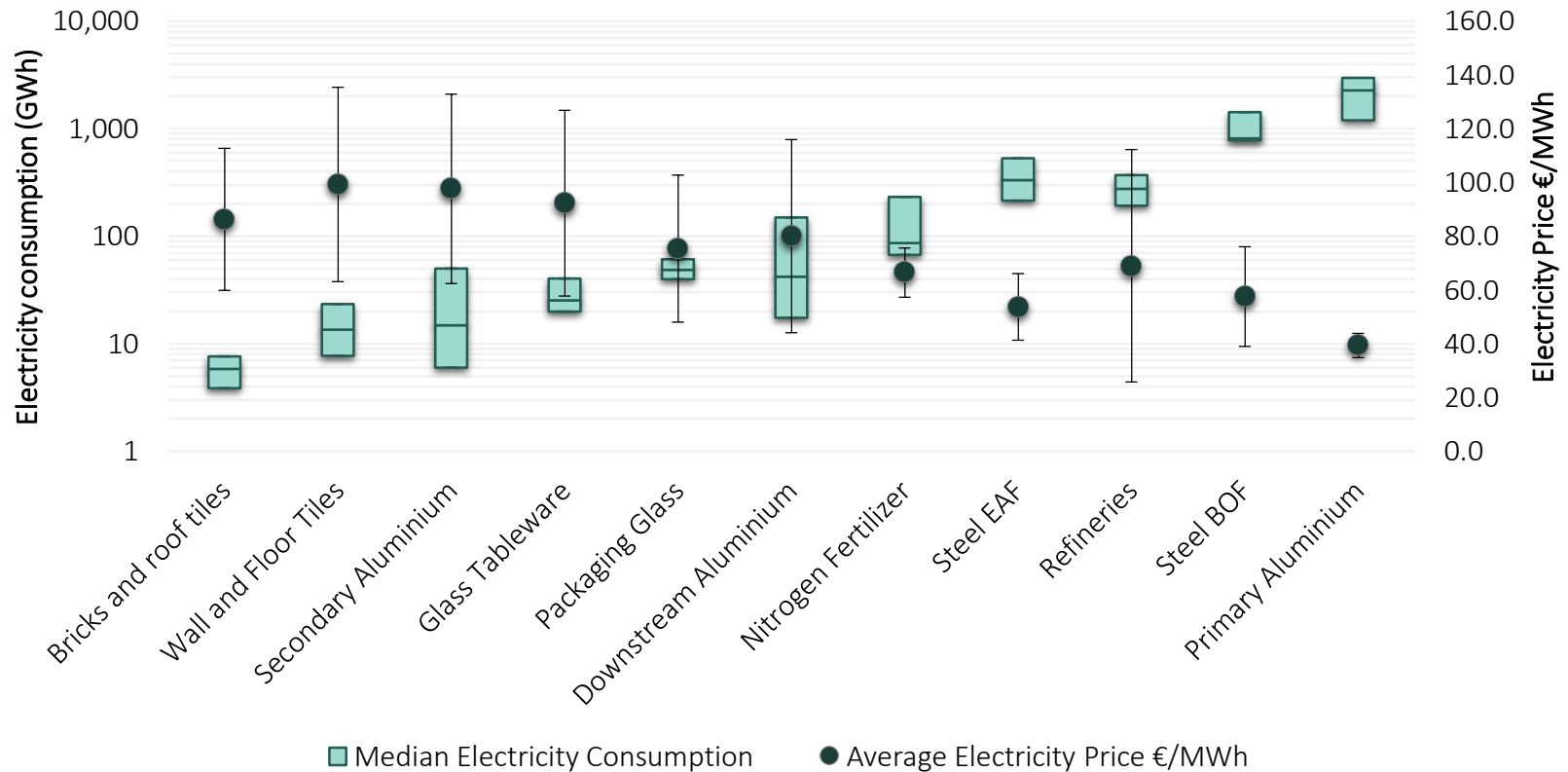
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# Energy prices and costs (simple averages, 2016)

Sector	Price of electricity (€/MWh)	Cost of electricity ** (€/MWh)	Cost of electricity as a share of production costs (%)	Price of natural gas (€/MWh)	Cost of natural gas as a share of production costs (%)
Bricks and roof tiles	86.3	79.3	5.4%	25.1	13.6%
Wall and floor tiles	99.2	88.1	5.2%	24.1	10.4%
Glass tableware	92.4	85.8	6.2%	23.8	7.5%
Packaging glass	75.4	68.9	7.5%	22.3	12.2%
Primary aluminium	39.4	37	41.6%	20.9	1.3%
Secondary aluminium	97.6	93.9	6.1%	24.4	7.9%
Downstream aluminium	80.0	80.0	1.3%	24.7	0.6%
Steel EAF	53.7	50.6	9.8%	19.2	2.5%
Steel BOF*	57.6	52.1	3.3%	17.2	1.1%
Nitrogen fertiliser	66.5	60.3	6.6%	18.8	52.1%
Refineries*	69.0	62.9	0.8%	20.3	1.1%

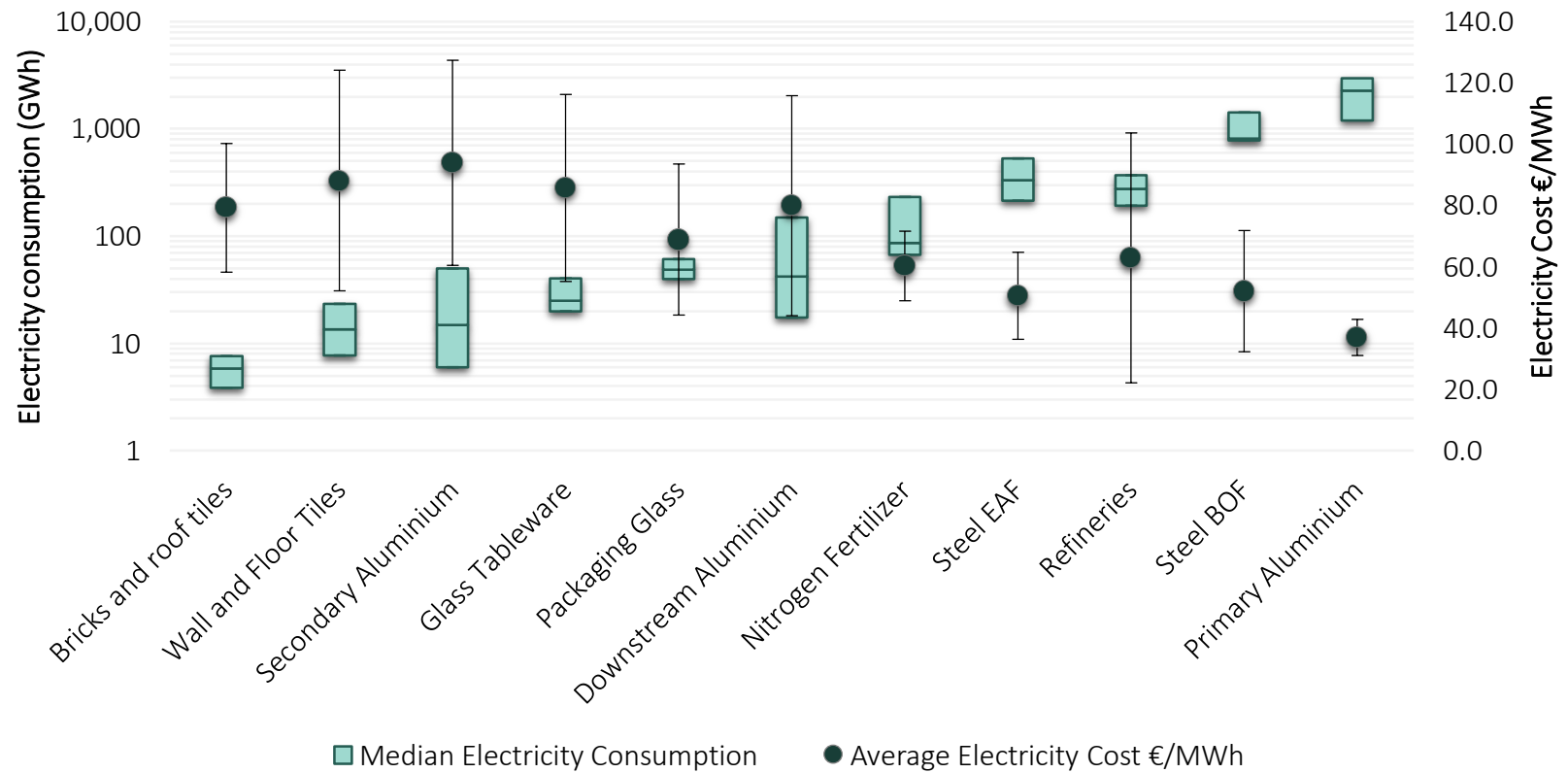
\*In these two sectors, fuels other than electricity and natural gas play a significant role; therefore, the share of these fuel costs out of production costs is not representative of the overall energy intensity of the production processes involved. \*\*The cost of electricity takes also into account reimbursement, self-production and flexibility schemes.

# Electricity (prices, simple averages, 2016)

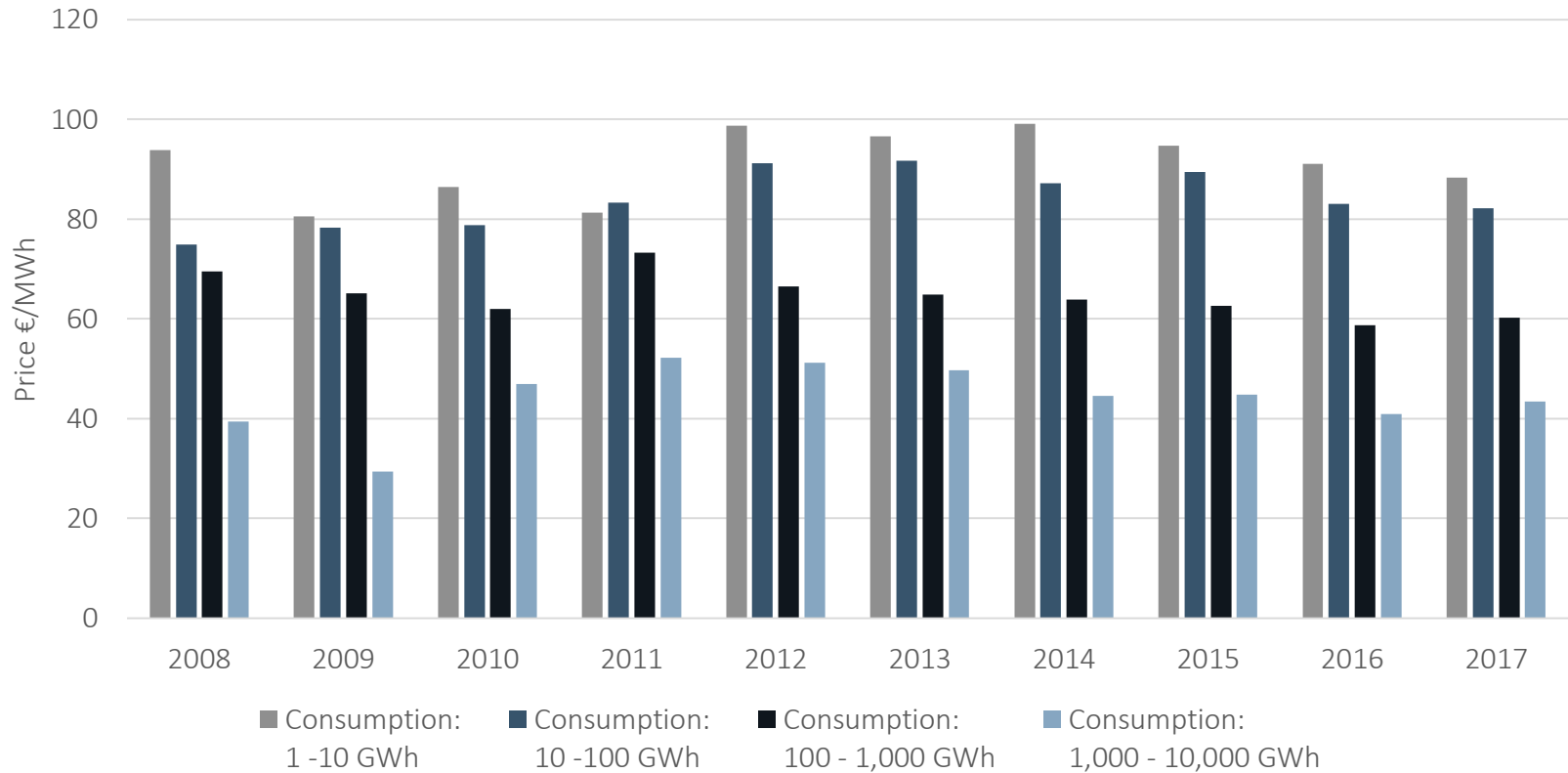




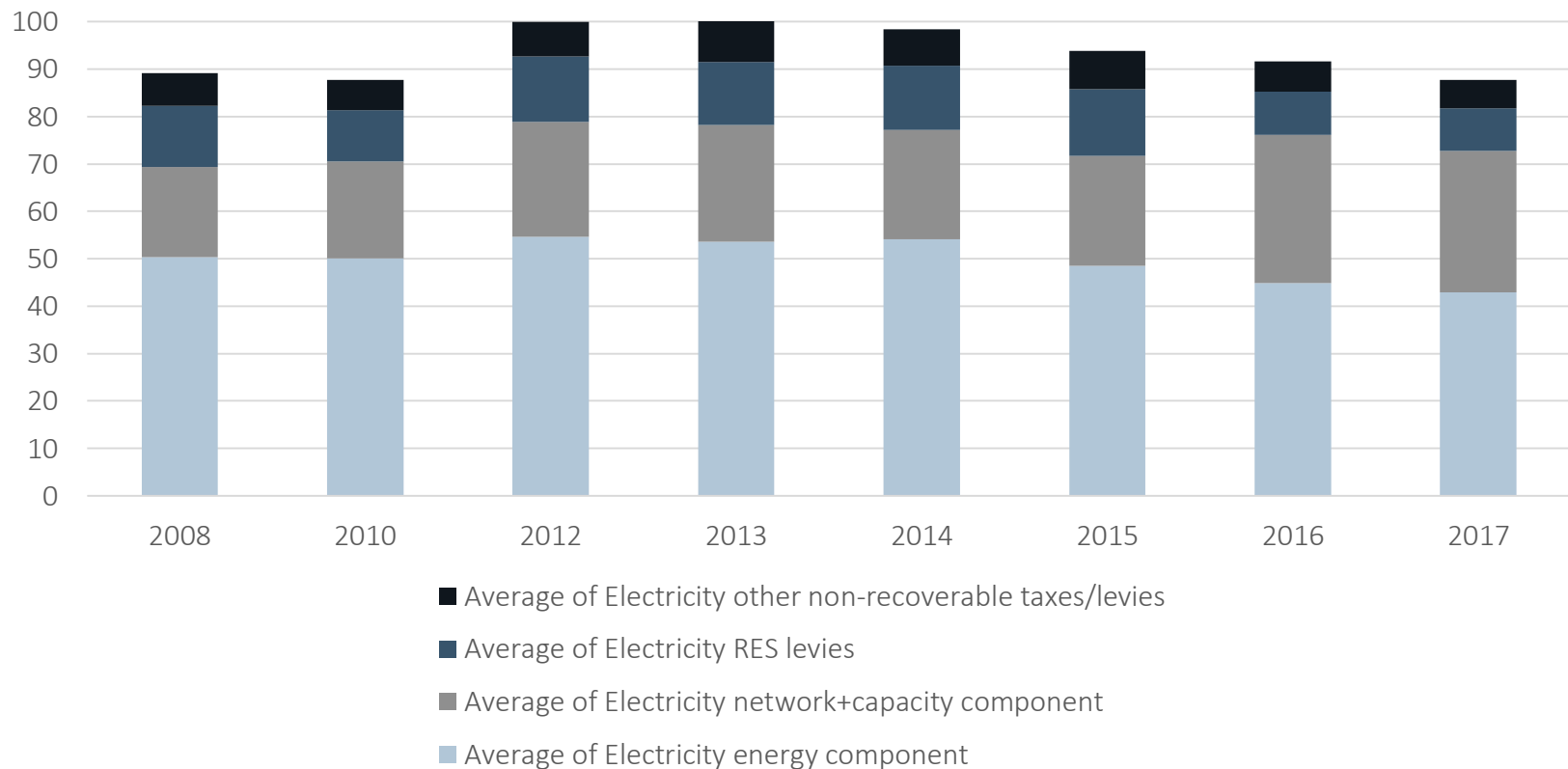
# Electricity (costs, simple averages, 2016)



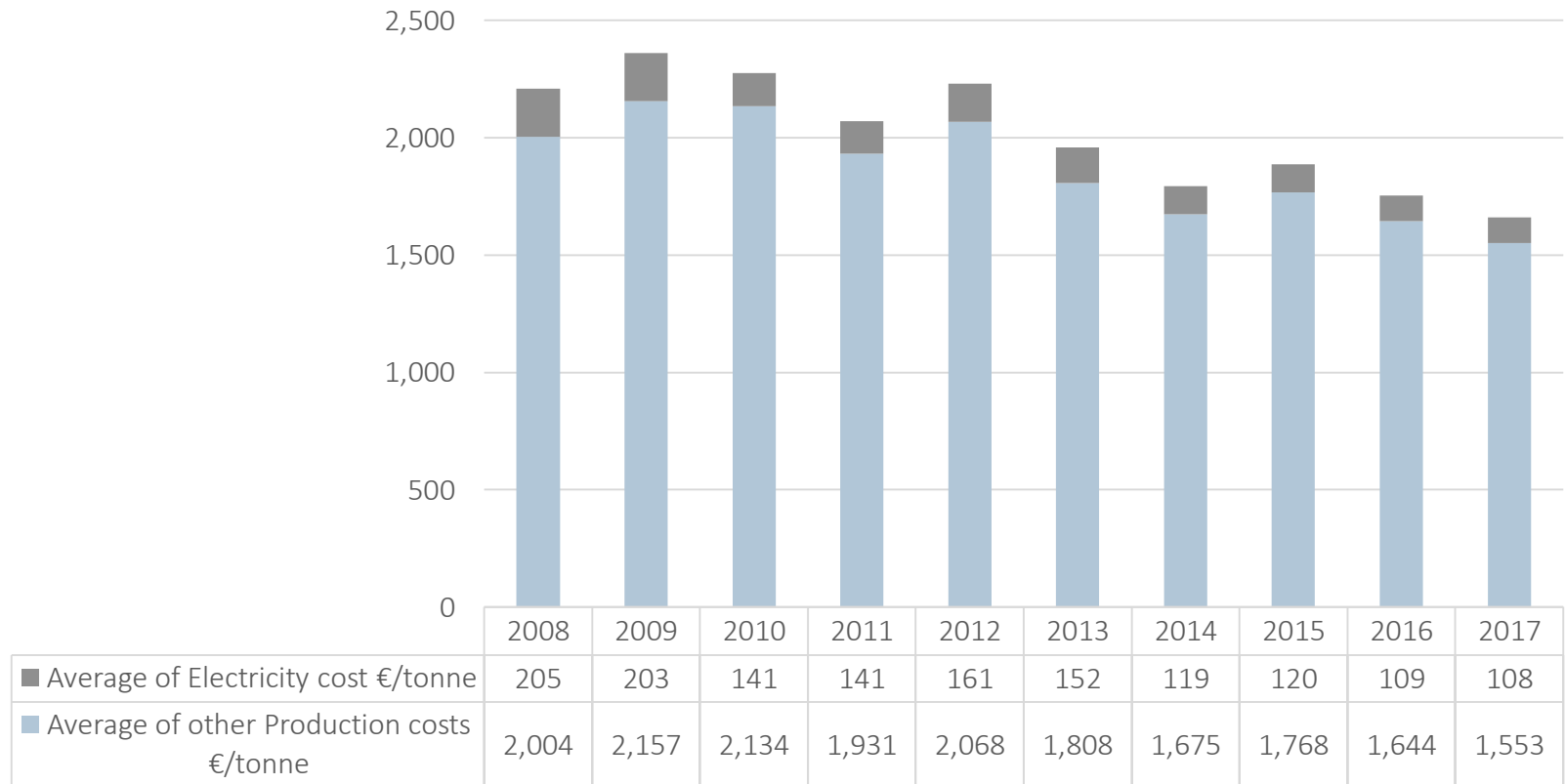
# Electricity (prices, simple averages)



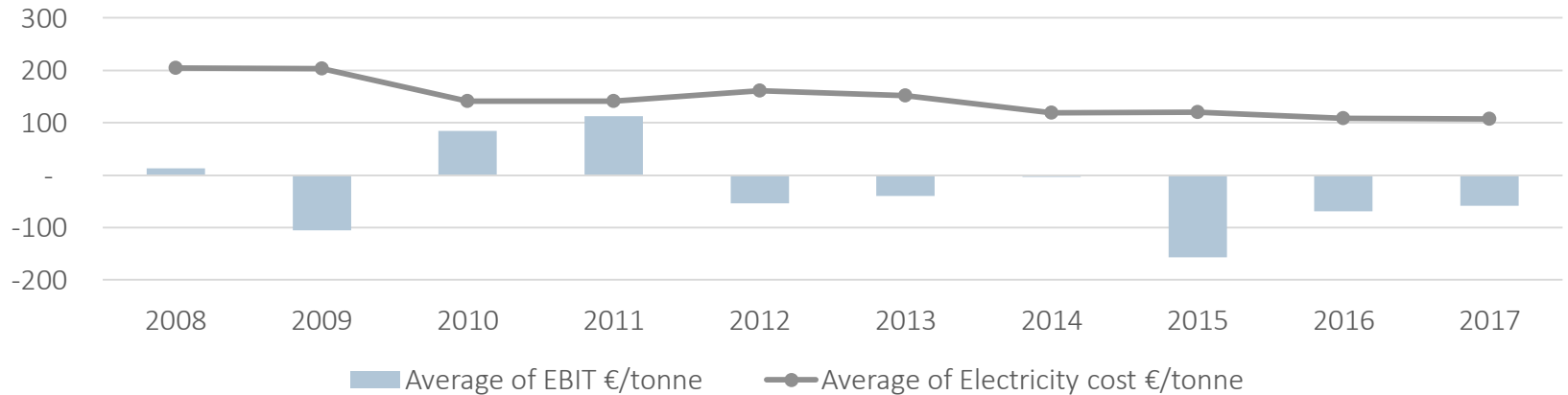
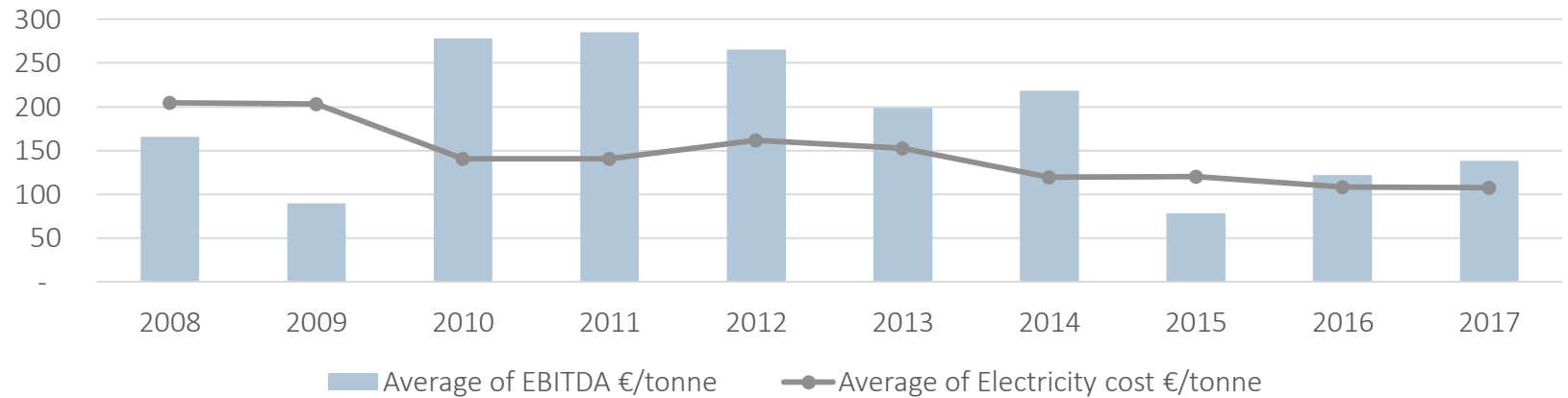
# Electricity (components, bricks and roof tiles, simple averages)



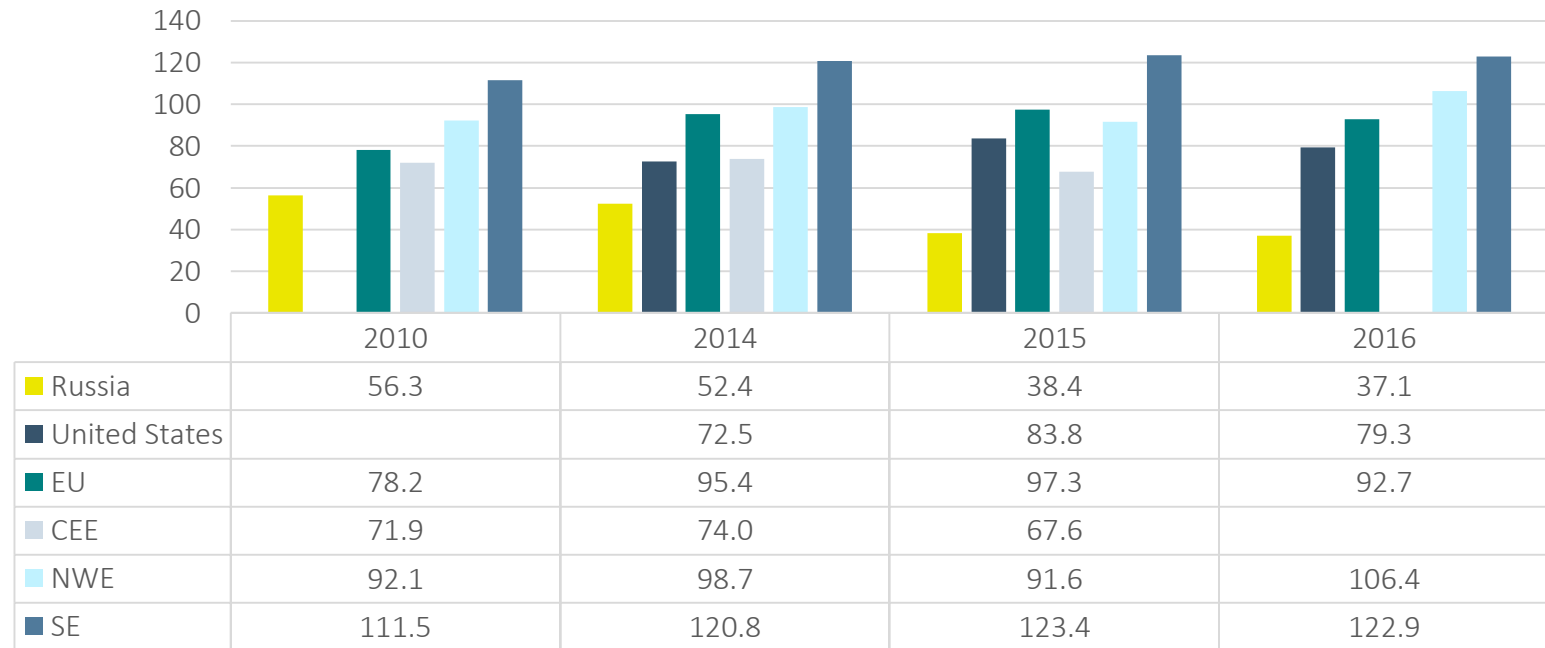
# Electricity costs as a share of production costs (glass tableware, simple averages)



# Electricity costs vs EBITDA and EBIT (glass tableware, simple averages)

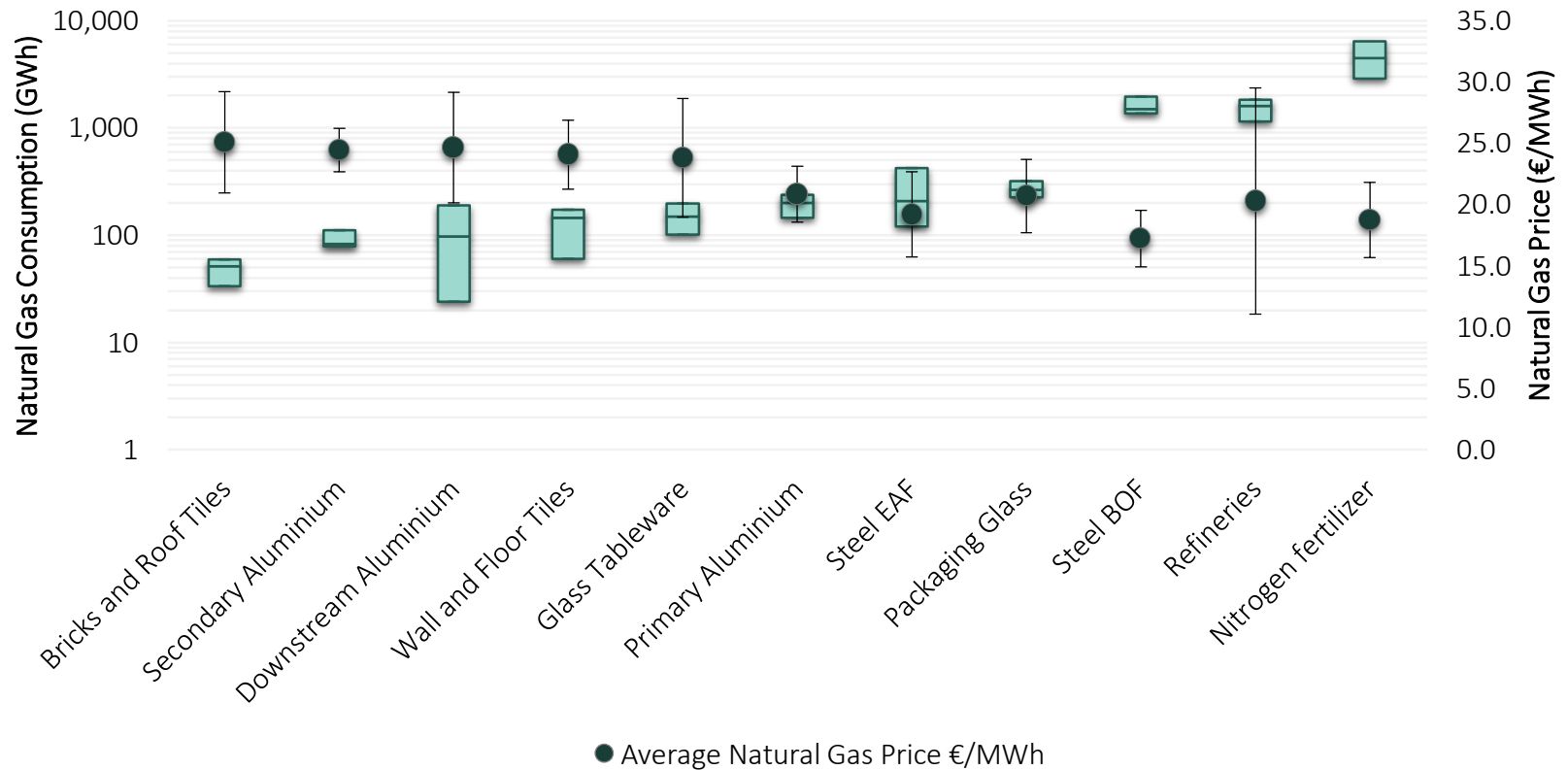


# International comparison of electricity prices (ceramics, weighted averages)

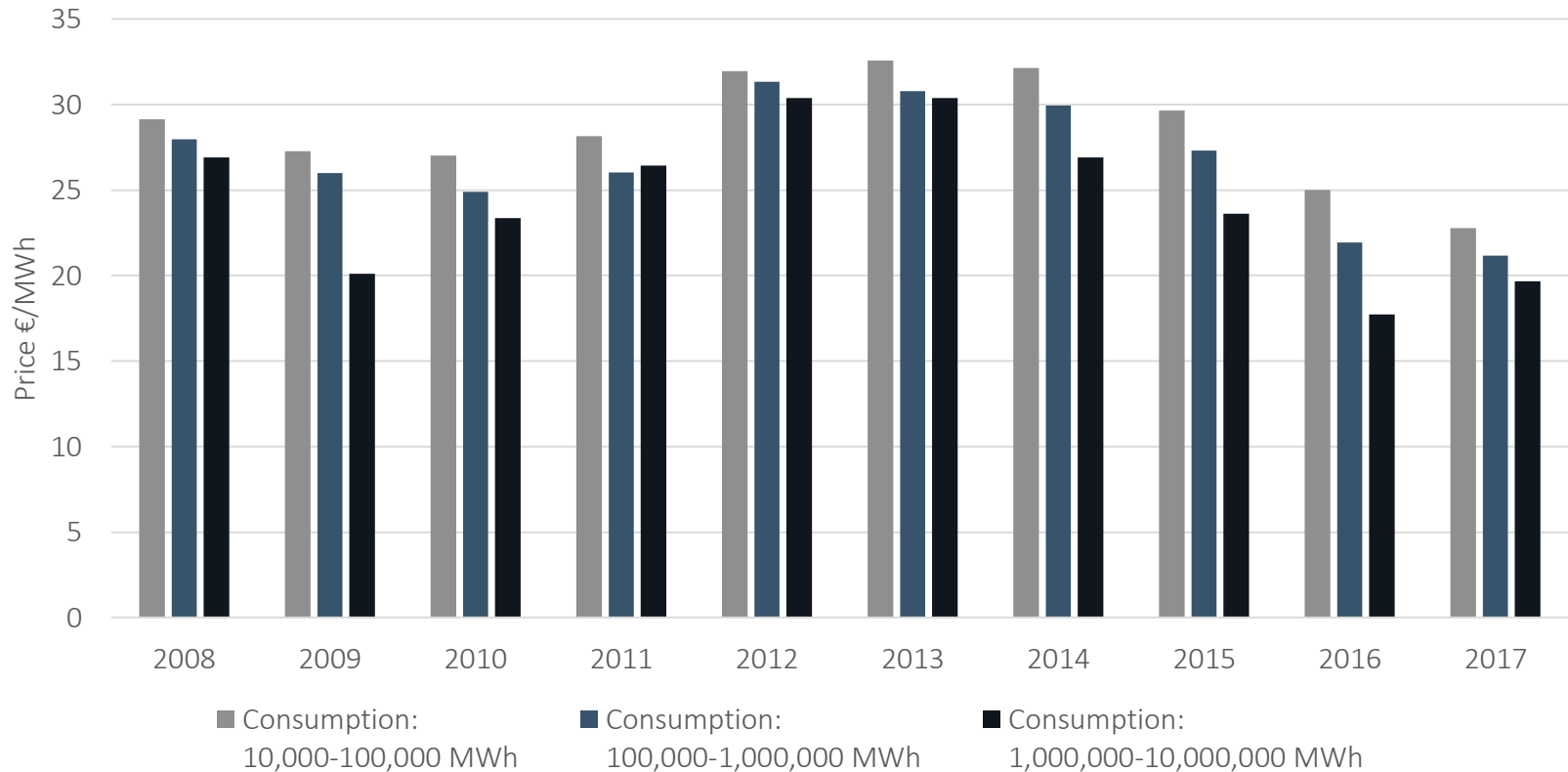


■ Russia ■ United States ■ EU ■ CEE ■ NWE ■ SE

# Natural gas (prices, simple averages, 2016)

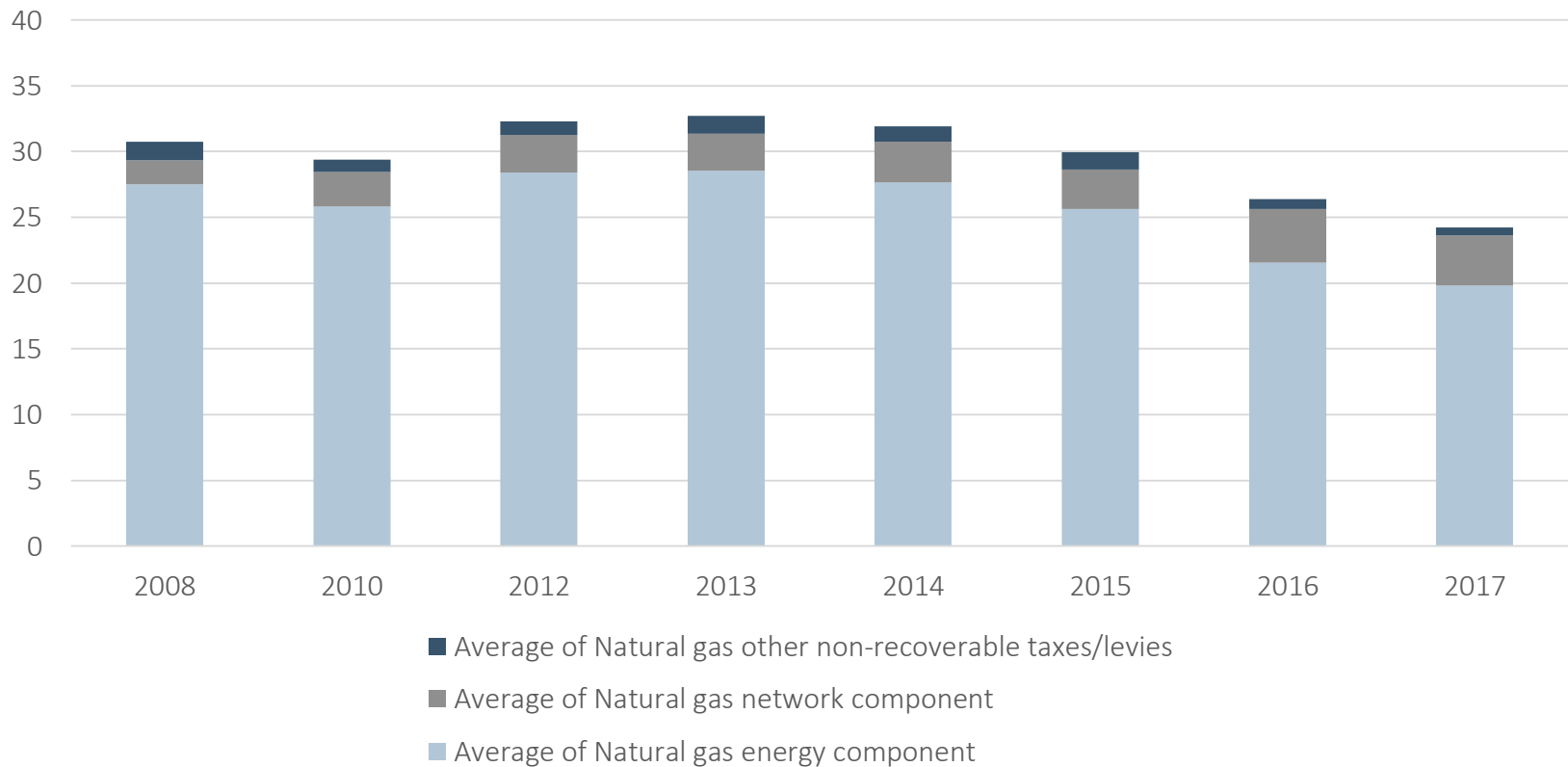


# Natural gas (prices, simple averages)

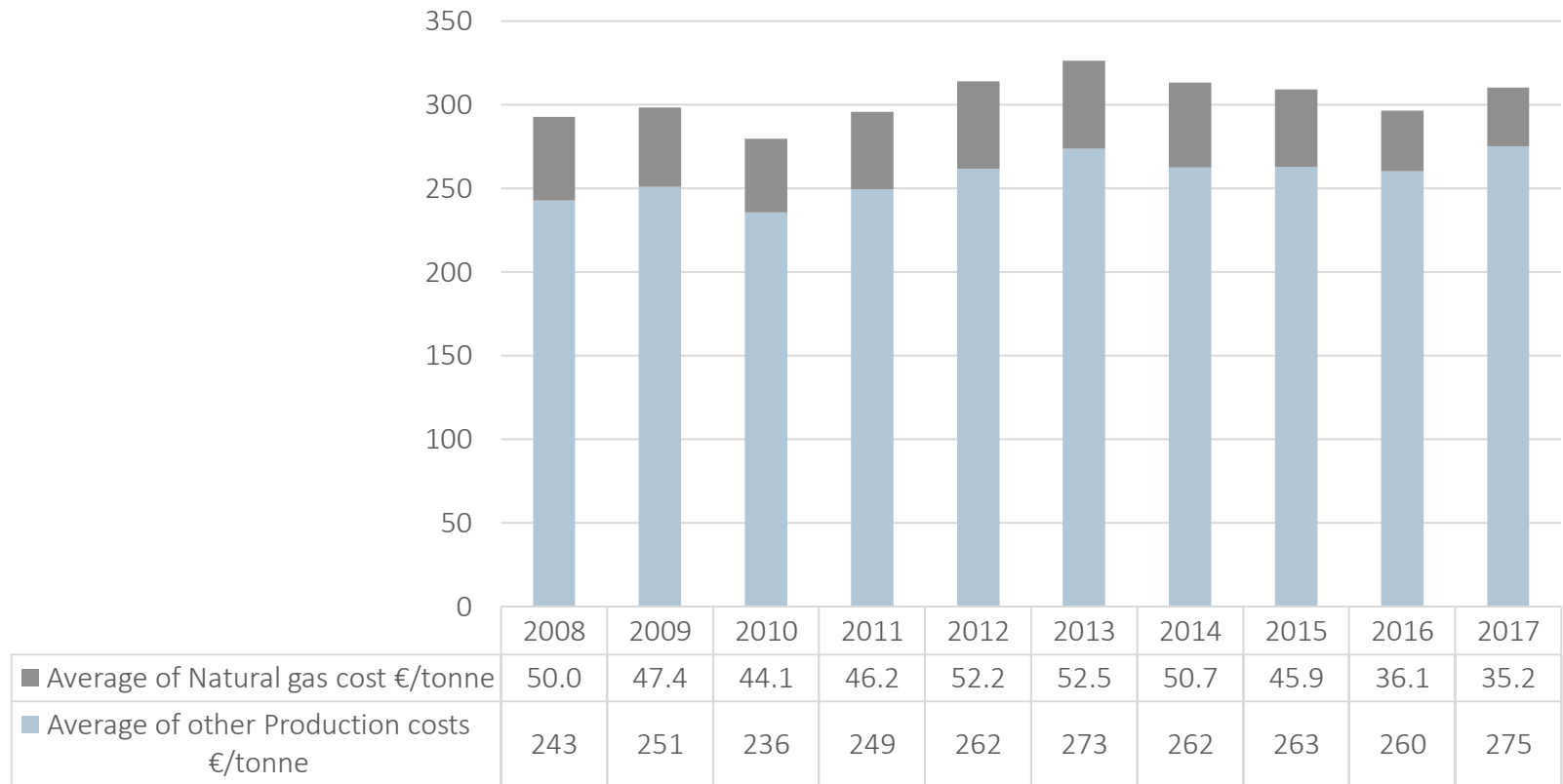




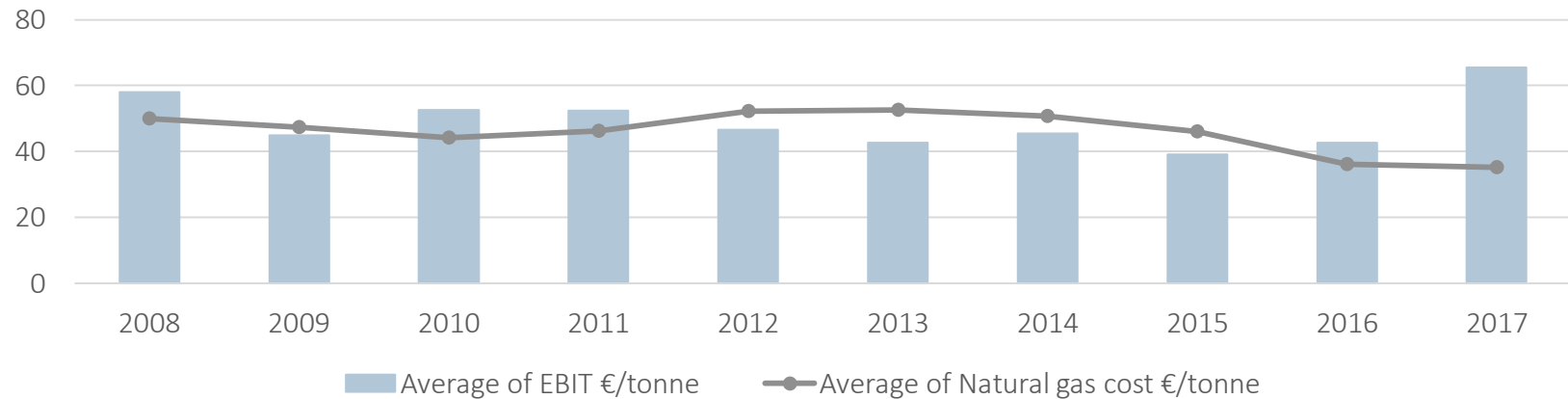
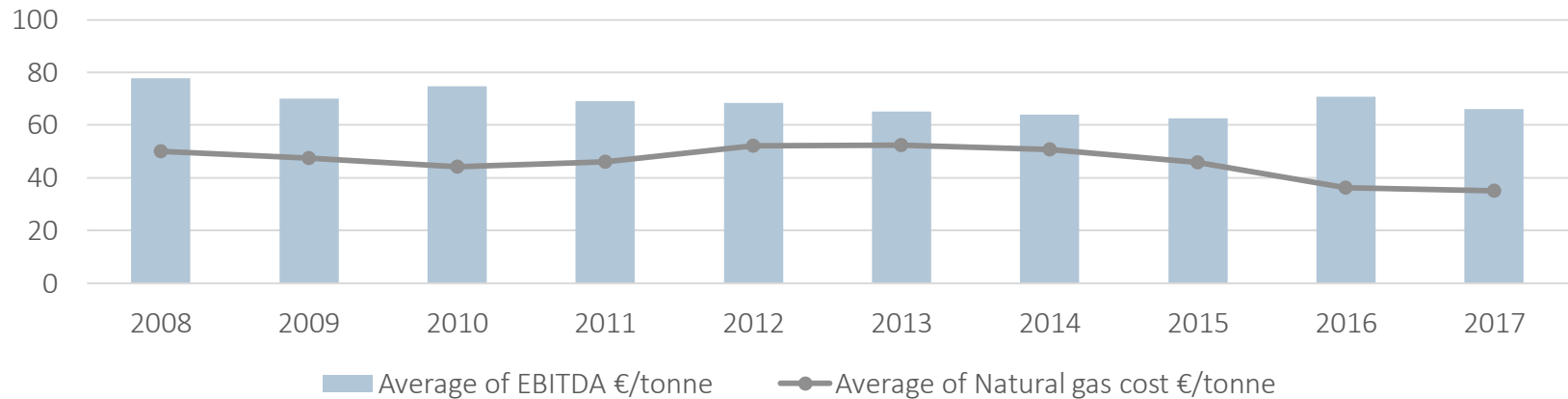
# Natural gas (components, bricks and roof tiles, simple averages)



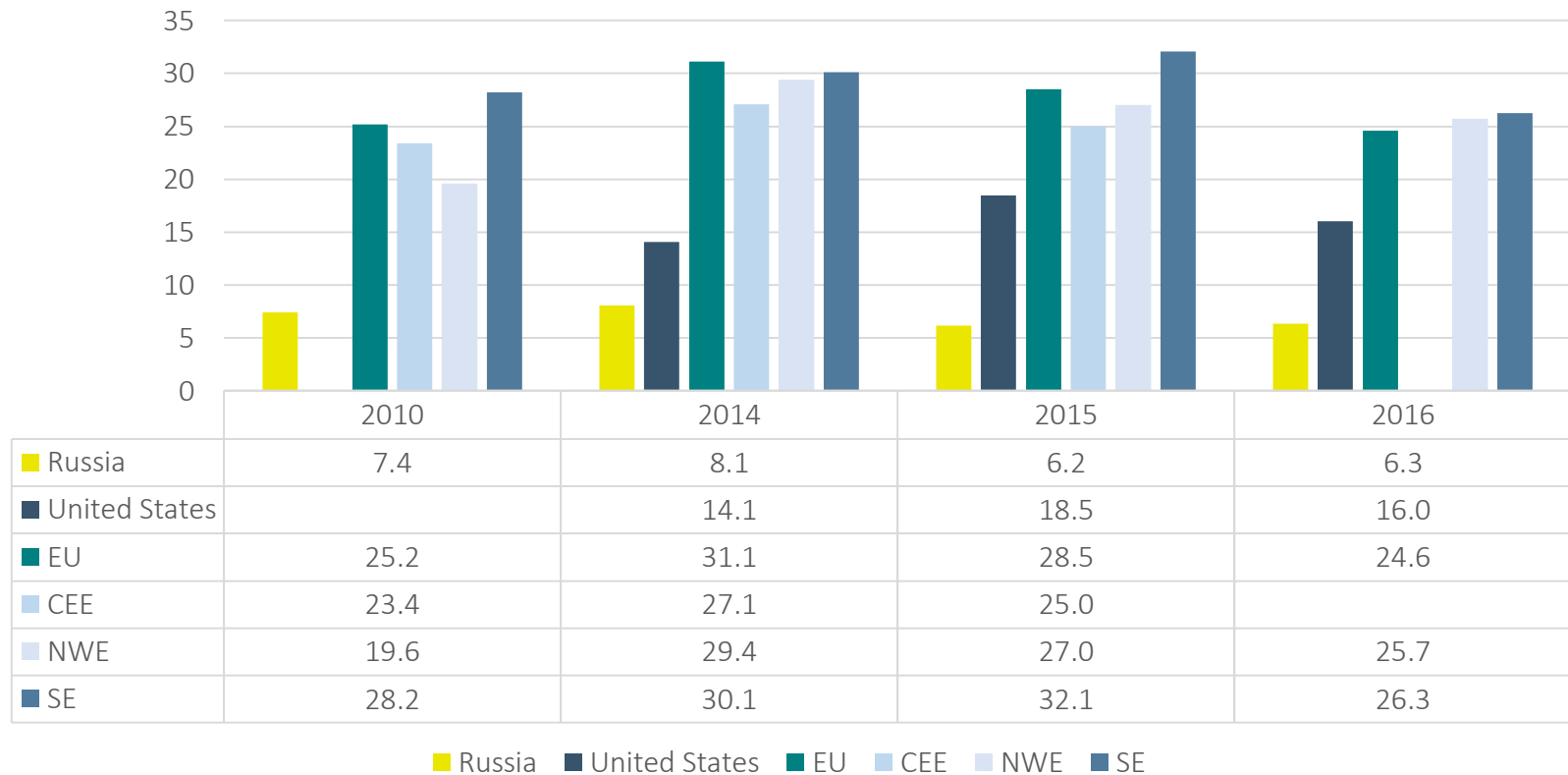
# Natural gas costs as a share of production costs (packaging glass, simple averages)



# Natural gas costs vs EBITDA and EBIT (packaging glass, simple averages)



# International comparison of natural gas prices (ceramics, weighted averages, 2016 components)





Thank you for your attention.

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