

SWITZERLAND'S ENVIRONMENTAL POLICY, TRADE PATTERNS AND ENVIRONMENTAL FOOTPRINTS

Swiss measures to reduce greenhouse gases

Swiss emission trading scheme (ETS)

- Large GHG-intensive companies (opt-out, opt-in)
- 7.15 CHF/t CO₂eq (03.2019); >99% free allocation
- Cap decreases annually 1.74% of the base year
- Since 2020: integration of the Swiss- with the EU ETS

CO₂ levy: tax on fossil combustible fuels

- Non-ETS participants; exemptions are possible
- 96 CHF/ton CO₂eq (2018), max 120 CHF/ton
- 2/3 of the revenue is redistributed, 1/3 is invested to promote CO₂ reduction measures
- 3/4 of emission reduction achieved by households

Compensation for CO₂ emissions

- Obligation to compensate for CO₂ of producers/importers of fossil motor fuels

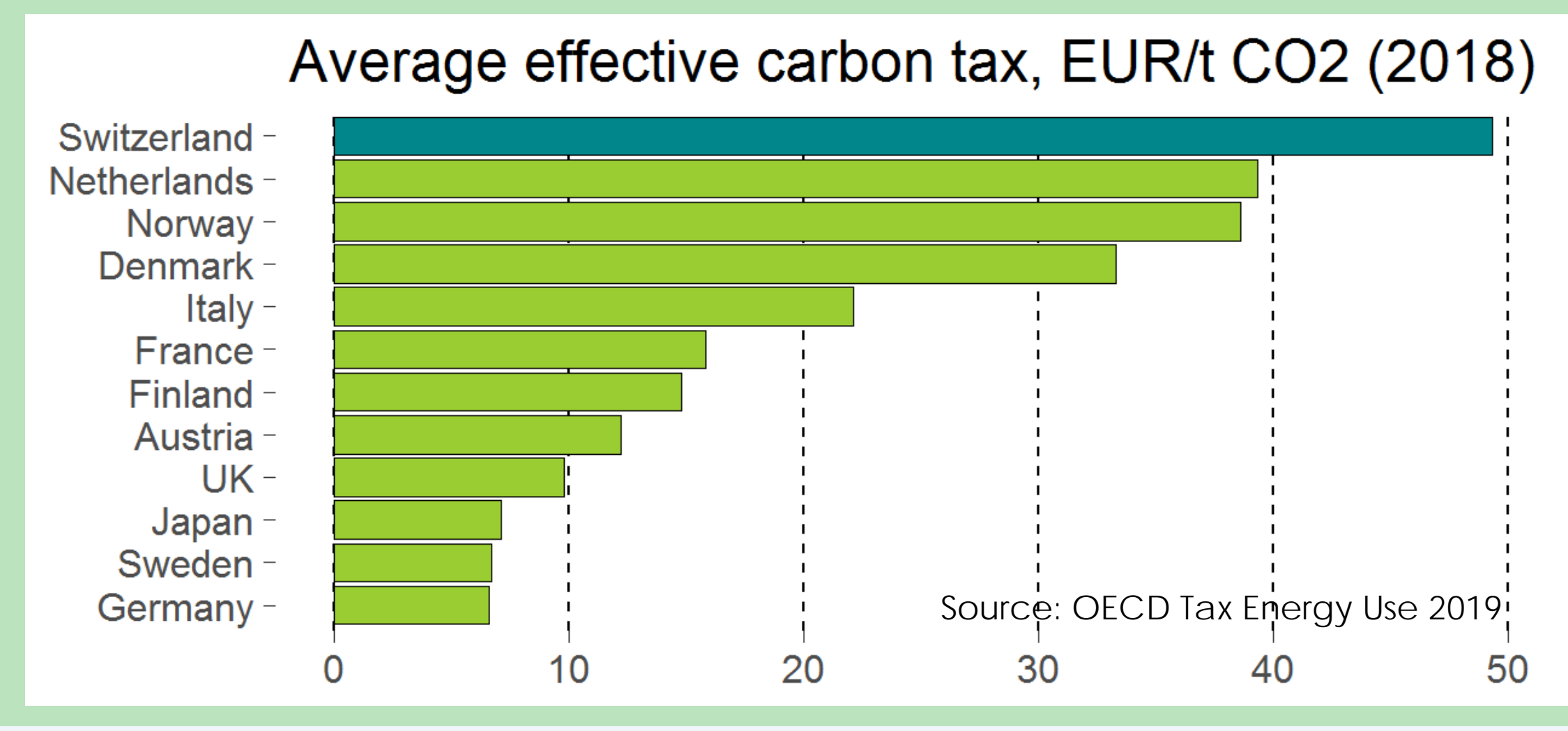
Additional measures

- CO₂ emission regulations for vehicles, buildings, climate training and communication program, Technology Fund, and sector agreements

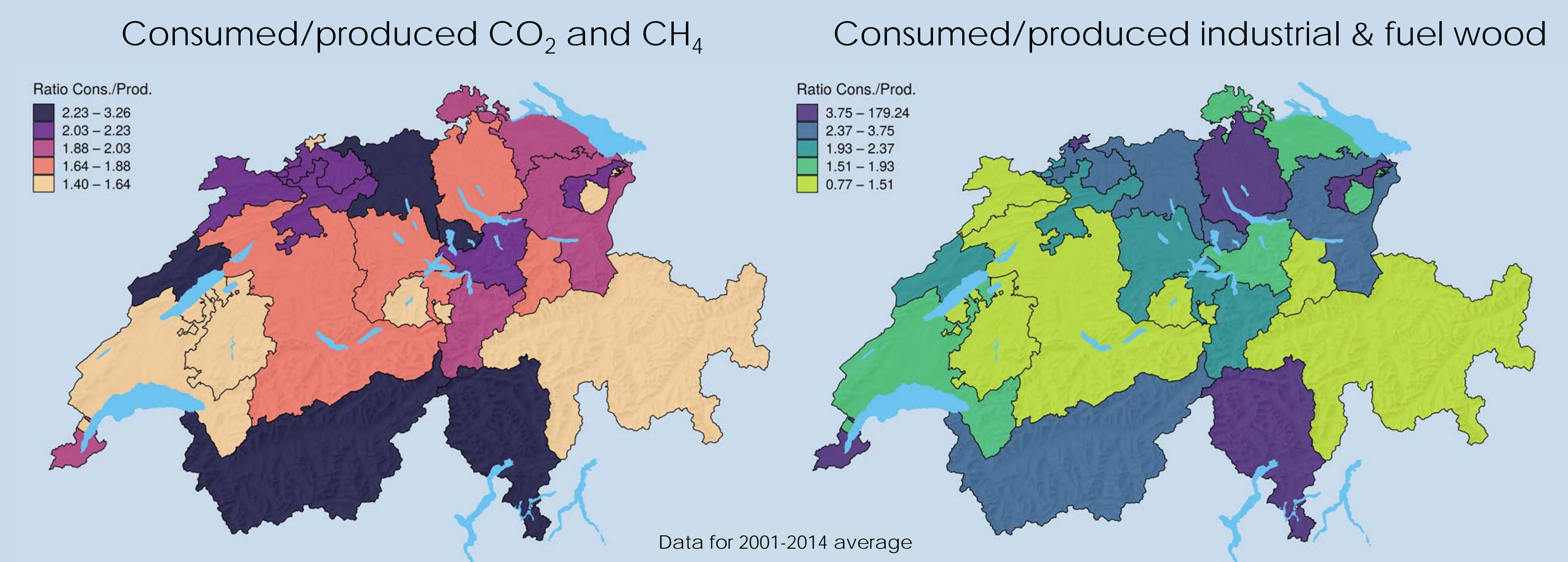
These measures aim to reduce territorial emissions

Swiss CO₂ pricing relative to partners

- #2 in height of emission tax rate (after Sweden); above average tax base
- #1 in average effective tax rate on carbon tax carbon & fuel tax
- Large differences with trading partners



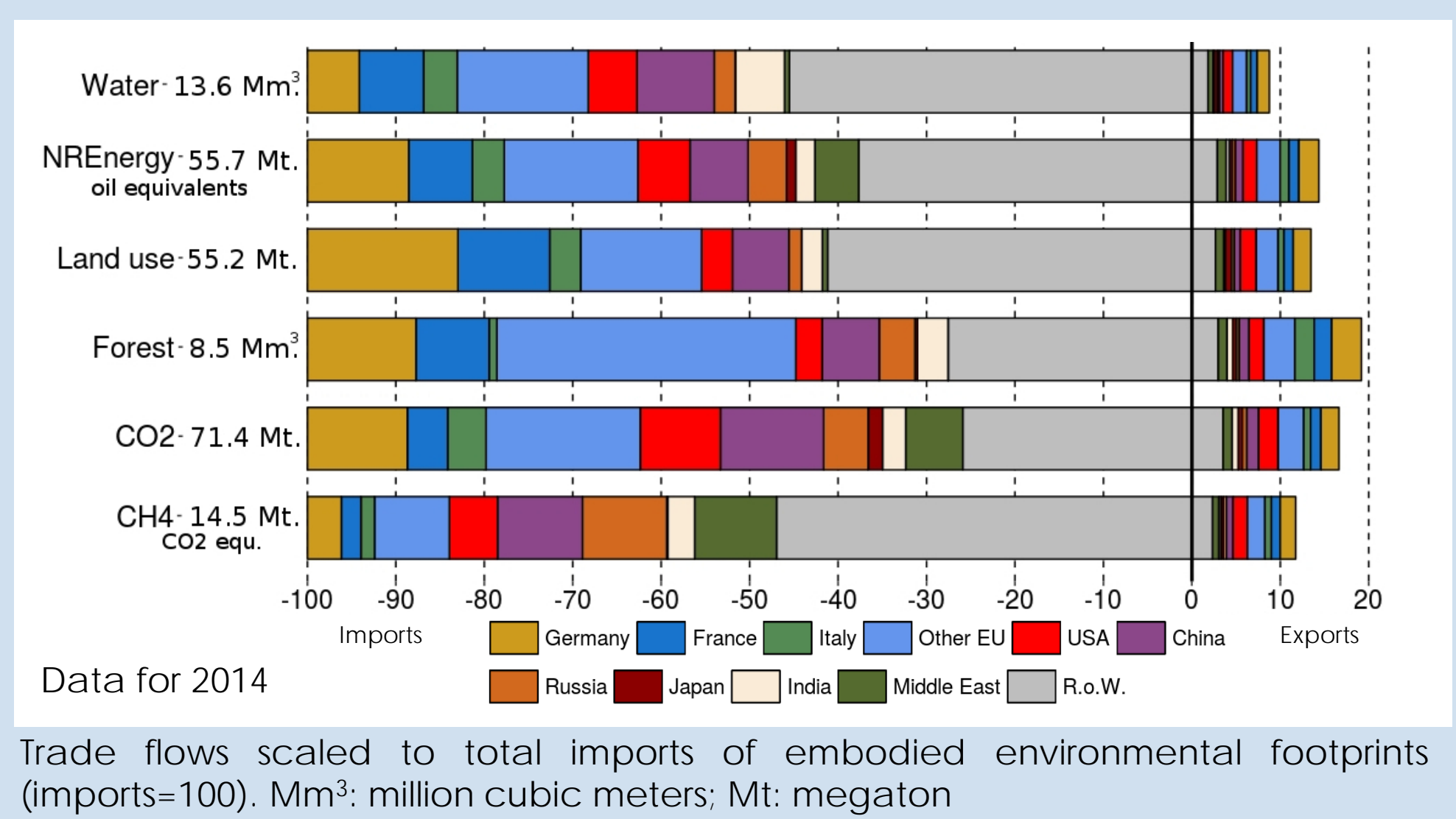
Cantonal differences in the ratio of consumption-to-production footprints



- All Swiss cantons are net-importers of CO₂ and CH₄ emissions; largest net-importers: Neuchâtel, Aargau, Ticino, Valais and Zug
- Forest consumption is substantially higher than production in Basel-Stadt, Genève, Ticino, Appenzell Ausserrhoden and Zürich

Switzerland's trade-embodied footprints

- Switzerland is a net importer of embodied environmental footprints. Footprints embodied in imports are 5 to 10 times larger than footprints embodied in exports
- Switzerland trades embodied footprints intensively with EU countries.
- EU environmental regulation will likely affect Switzerland



Traded CO₂ and CH₄ emissions and value chain relations

- The ratio of traded to domestic emissions is high in Switzerland compared to its trading partners
- Swiss value added crosses sectors about 3.5-4.5 times before ending up in final production in other countries

Country	CH	Germany	France	Italy	UK	USA	China	Austria
CH	-	24.10	10.65	9.28	6.41	21.18	25.19	3.19
Germany	1.91	-	5.78	4.15	4.33	11.38	17.31	2.78
France	1.39	9.52	-	6.06	4.99	12.91	15.17	0.75
Italy	1.17	6.61	5.86	-	2.86	7.22	9.78	1.09
UK	0.60	5.10	3.57	2.12	-	9.12	14.41	0.41
USA	0.16	1.09	0.75	0.43	0.74	-	7.59	0.10
China	0.14	1.24	0.66	0.44	0.88	5.70	-	0.11
Austria	2.86	31.32	5.10	7.69	3.87	11.59	17.89	-

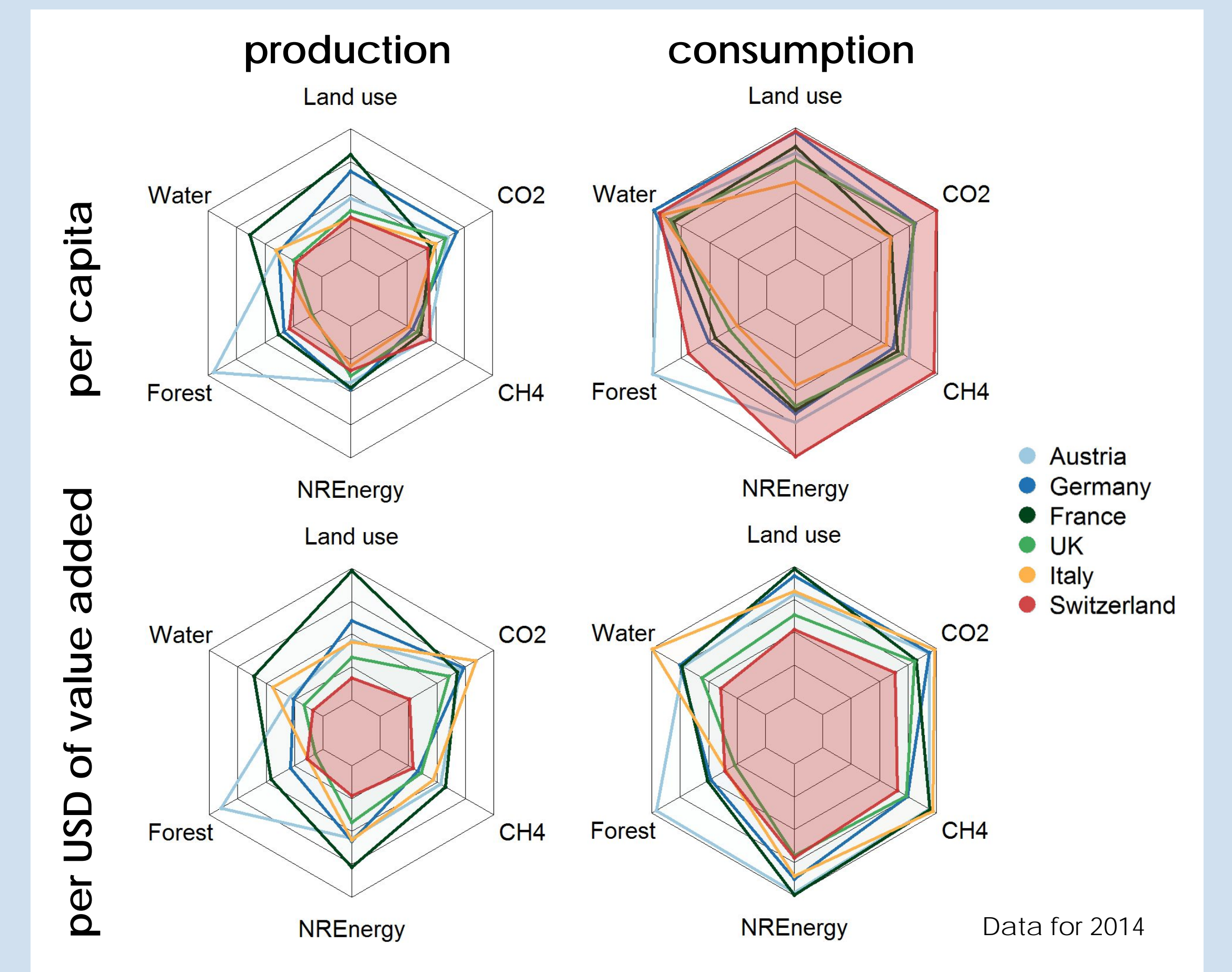
Traded greenhouse gas emissions: CO₂ and CH₄ aggregate, based on GWP₁₀₀. Emissions embodied in bilateral trade scaled to domestic emissions of row-country. Data is reported for the year 2014

Country	CH	Germany	France	Italy	UK	USA	China	Austria
CH	1.58	3.55	3.63	3.92	3.68	3.58	4.43	3.52
Germany	3.57	1.60	3.57	3.87	3.69	3.78	4.32	3.50
France	3.73	3.75	1.59	3.85	3.72	3.95	4.53	4.10
Italy	3.70	3.91	3.73	1.67	3.89	3.93	4.73	3.84
UK	3.72	3.77	3.63	4.11	1.59	3.71	4.79	4.16
USA	3.67	3.86	3.75	4.29	3.72	1.63	4.38	4.13
China	4.78	4.74	4.66	4.85	4.65	4.50	2.27	4.91
Austria	3.53	3.49	3.84	3.79	3.98	3.87	4.54	1.54

Bilateral value-chain length: Average number of times value added from one country (in rows) crosses sectors and/or borders before it ends up in the country in which the final product is produced (columns). Data for the year 2014

Switzerland's sustainability position

- Switzerland's environmental footprint is much larger from a consumption-based perspective than from a production-based perspective
- Switzerland is very resource-efficient, but the scale of consumption implies large per capita footprints



Scales for inventories per capita [per USD of value added]: Land use - 9t [0.42t] (crops, crop residues, grazing vol.), Water - 2100m³ [125m³] (usage in agriculture & livestock), Forest - 2.1m³ [0.1m³] (industrial & fuel wood, including tropical wood), NREnergy - 8.8t [0.305t] oleq. (energy except solar, wind, and hydro), CH₄ - 3t [0.11t] CO₂ eq. GWP₁₀₀, CO₂ - 13t [0.5t]

Evolution of Swiss environmental inventories

- Switzerland's environmental footprint, especially from consumption, increased from 1997 to 2014

