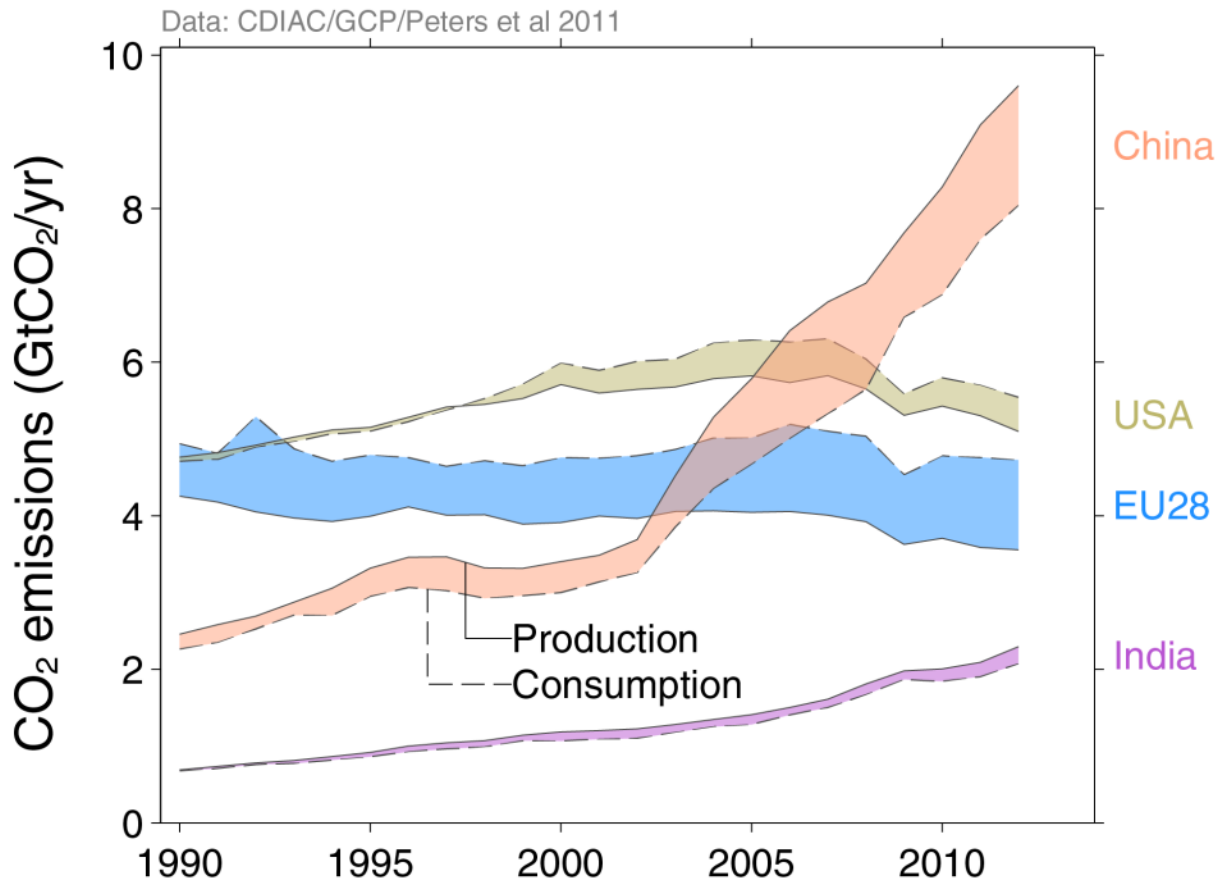


# MSR Bandwidth and How Can We Stay Competitive With MRS

Liv Rathe, Norsk Hydro

# Consumption-based emissions (carbon footprint)

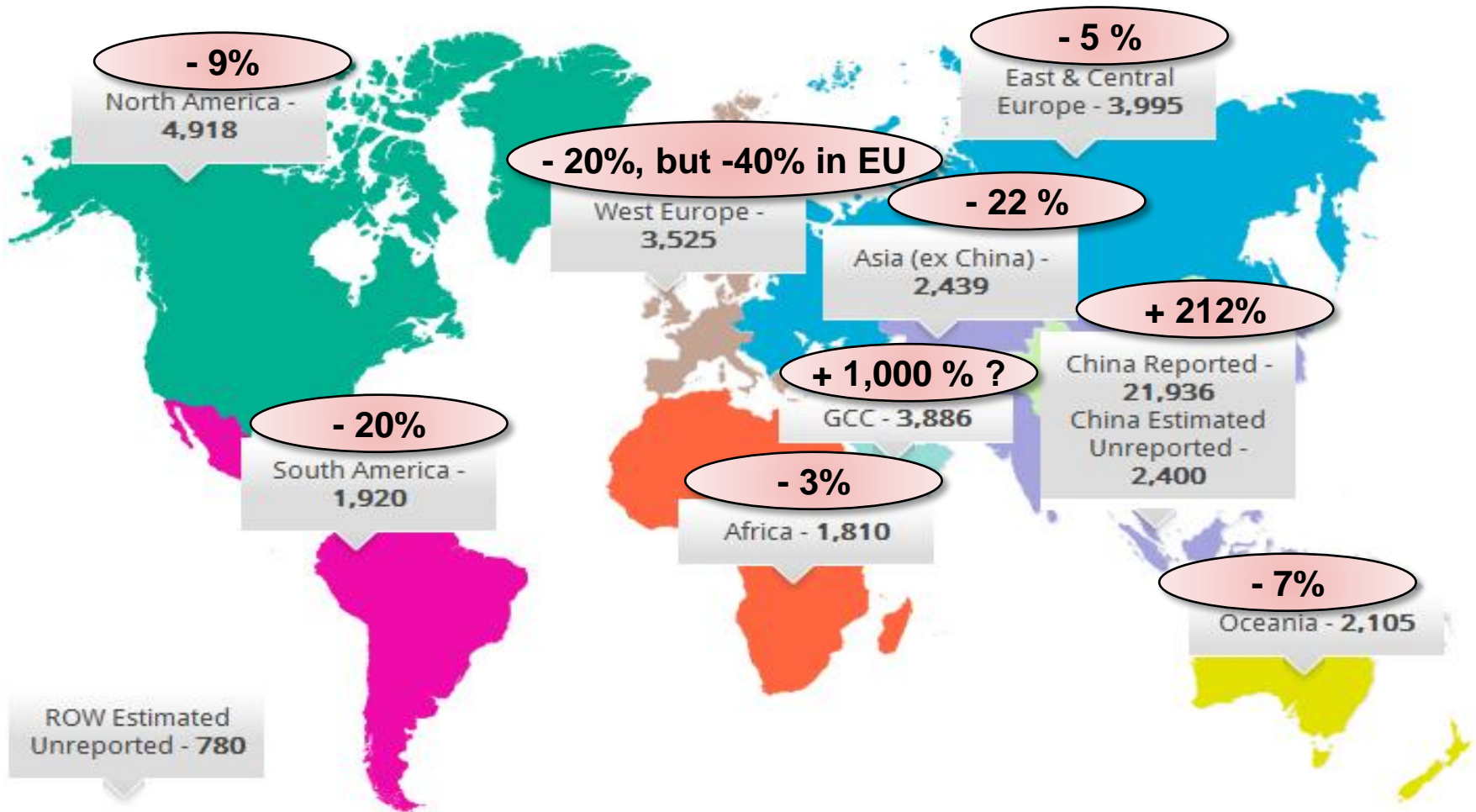
Allocating emissions to the consumption of goods and services provides an alternative perspective on emission drivers



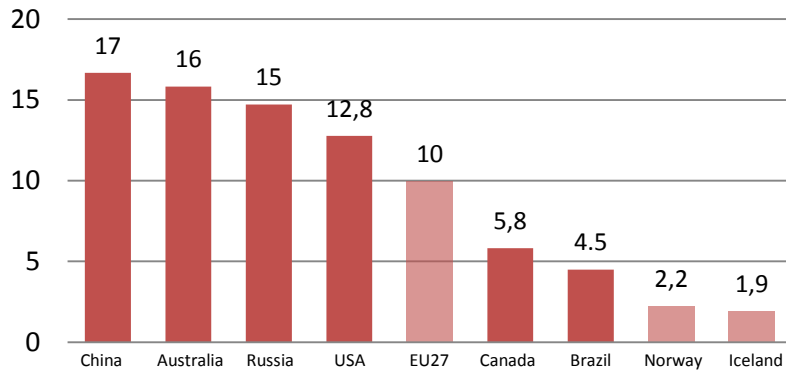
Consumption-based emissions are calculated by adjusting the standard production-based emissions to account for international trade

Source: [Le Quéré et al 2014](#); [Peters et al 2011](#); [Global Carbon Project 2014](#)

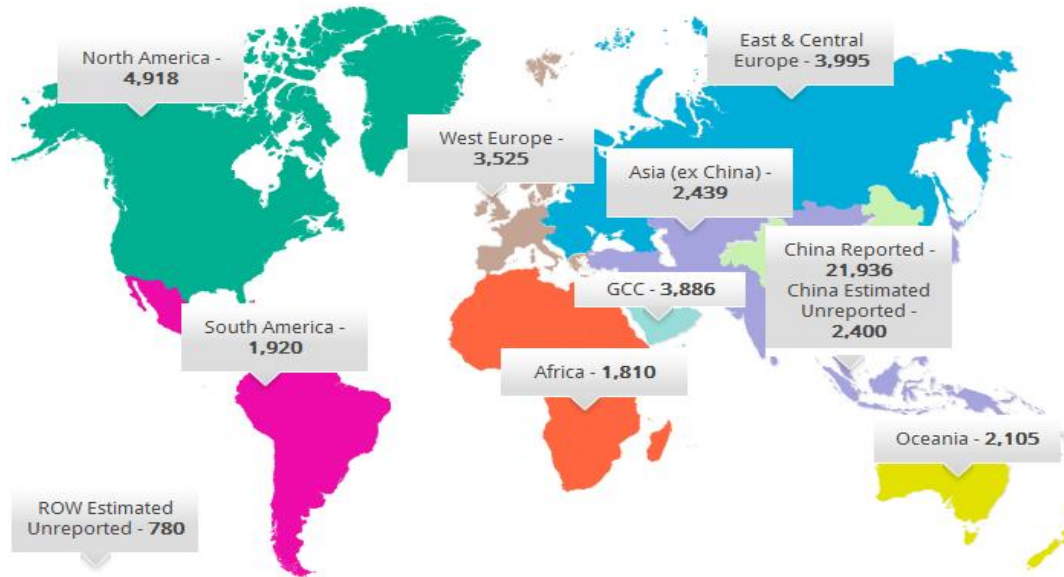
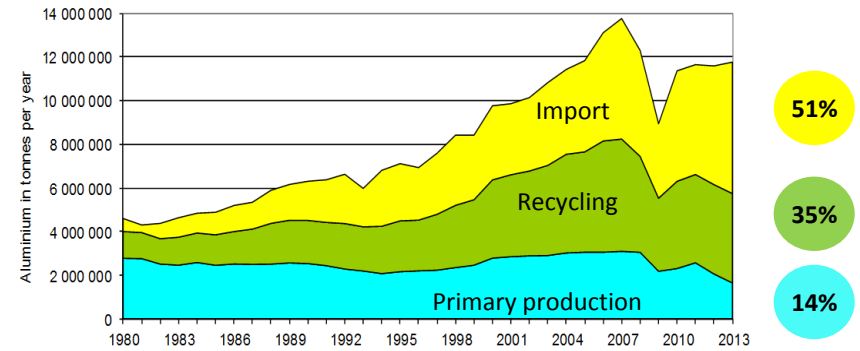
# Primary Aluminium Production Growth 2005-2013; 32 MT to 50MT - 50% growth



The carbon footprint of primary aluminium varies with energy source...

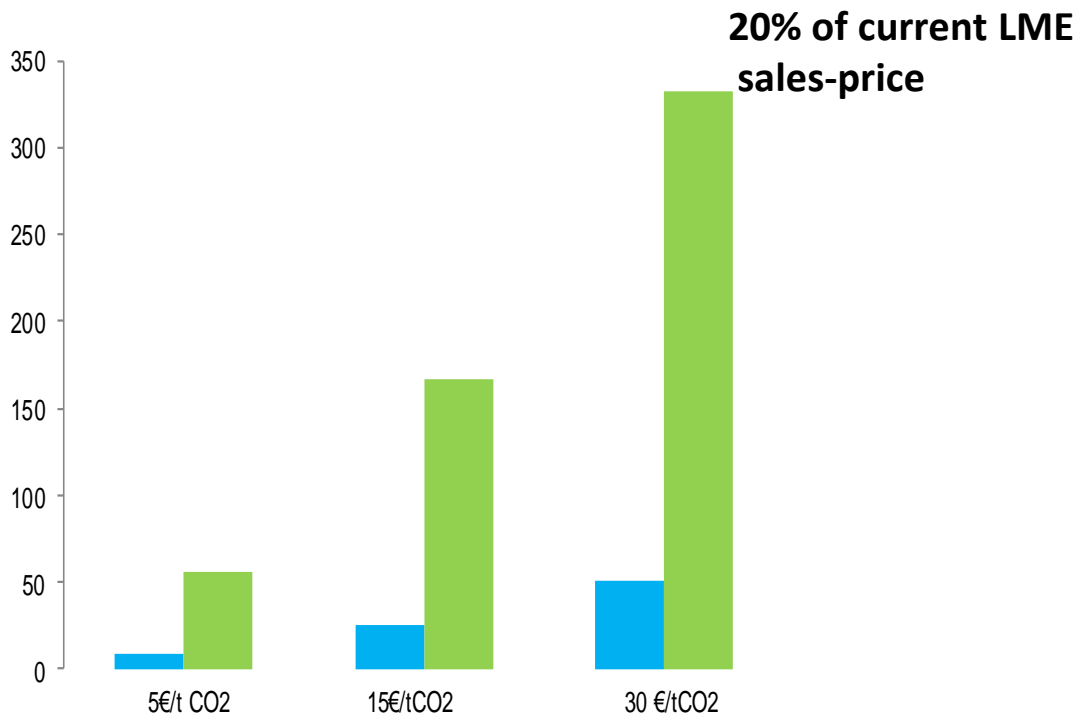


...yet EU produces less and worsens its footprint



# Europe's climate policy leads to industry relocation, unless;

Cost of emission €/t aluminium before compensation



**Full compensation for indirect and direct costs must be given through an EU wide scheme, linked to actual recent production and technical achievable benchmarks, without any correction.**

# MSR Structure should;

- From a Climate and EU «lead the way» perspective, MSR should;
  - Start early, transfer BL direct to MSR, high withdrawal %, low upper threshold, low lower threshold, compromise the cap between trading periods and the bandwidth wide enough.
- But From an Industry, without adequate compensation level, perspective;
  - Start late, don't touch BL, low withdrawal %, high upper threshold, high lower threshold, no cap compromise between trading periods and wide enough bandwidth.

# If Adequate Compensation in place then Bandwidth to reflect;

- **Balance market fluctuations** as economic circles and fuel switching
  - Hedging need - actors positions influenced by volatility, capital resources, trust in market
    - Allow normal fluctuations
- **Assure sufficient liquidity** ( spot and forward)
  - Not too tight between - 100MT or +100MT
    - More critical out in time as auction volume decreases (2,2%)
- **Large enough to avoid arbitrage and instability** in the market.
  - Maybe 300MT?
- **Balance criteria** for taking out and bringing back
- **Global situation for cut** – when can we afford higher prices?
- Hedging need
- **Thresholds and bandwidth adjustable in a predictable way;**
  - Not too frequently- each 5<sup>th</sup> year?
  - Clear review parameters