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Tracking industrial energy efficiency

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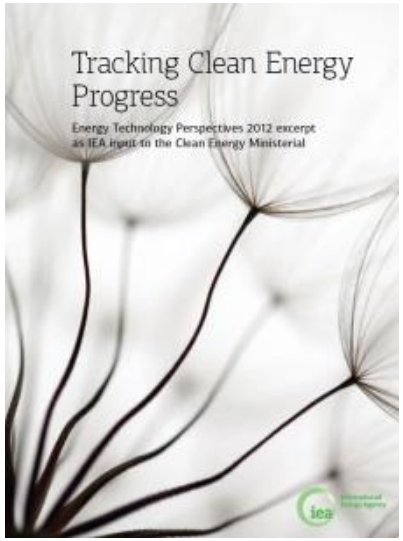
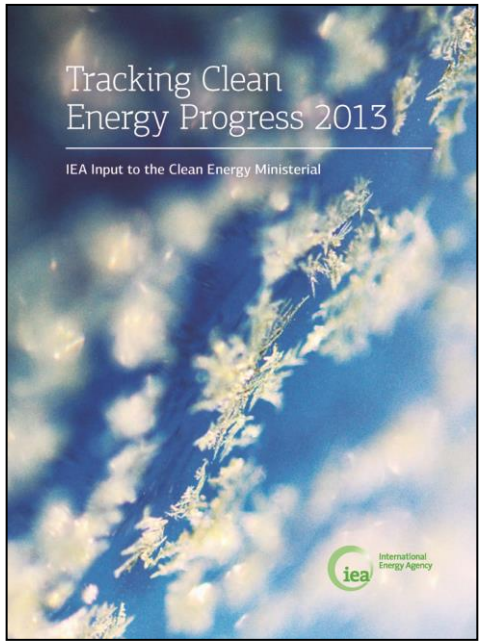
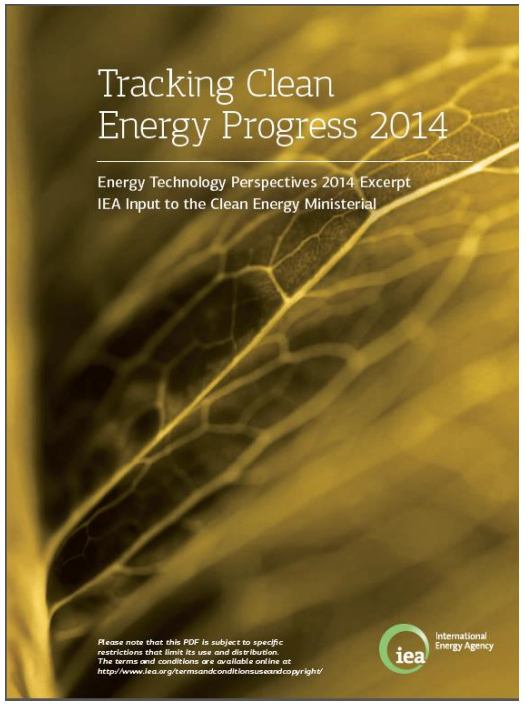
Tracking Clean Energy Progress







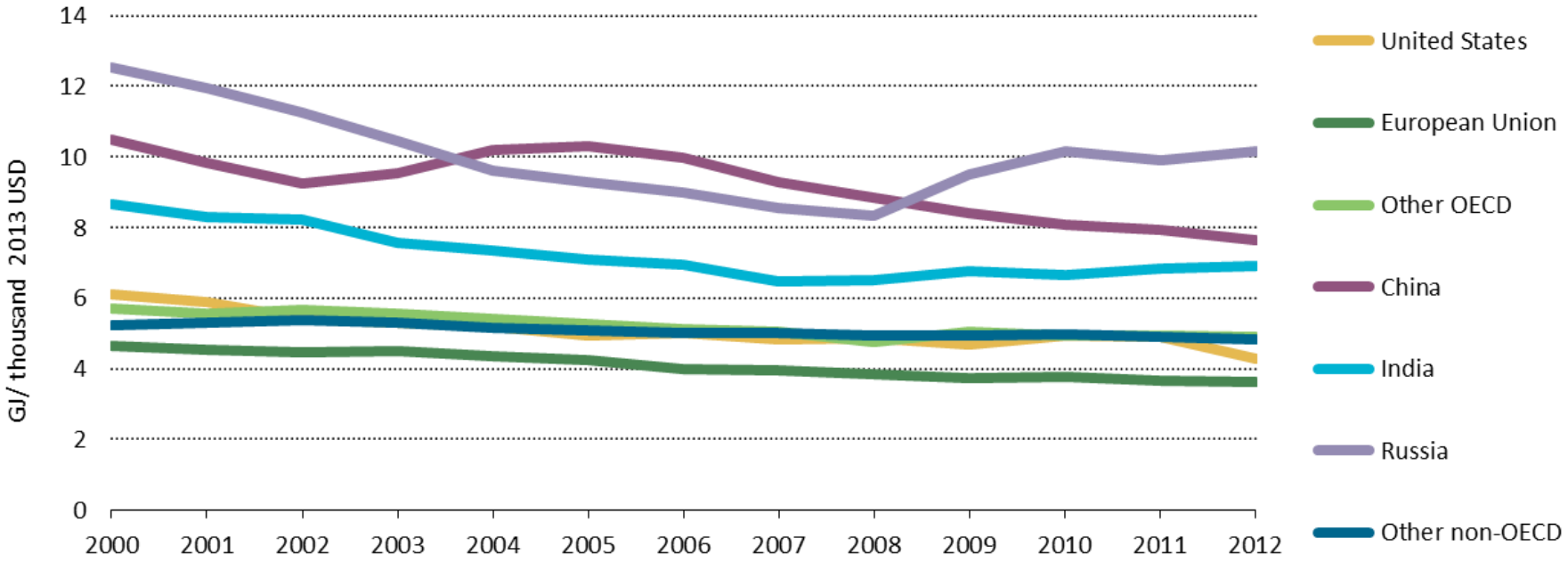
Available for free download at:
http://www.iea.org/publications/freepublications/publication/Tracking_clean_energy_progress_2014.pdf

Past editions

- Technical potential for energy savings monitored using benchmarking against Best Available Technology (BAT)
- Tracking of historical aggregated industrial and sector-level indicators

Industry-level indicators

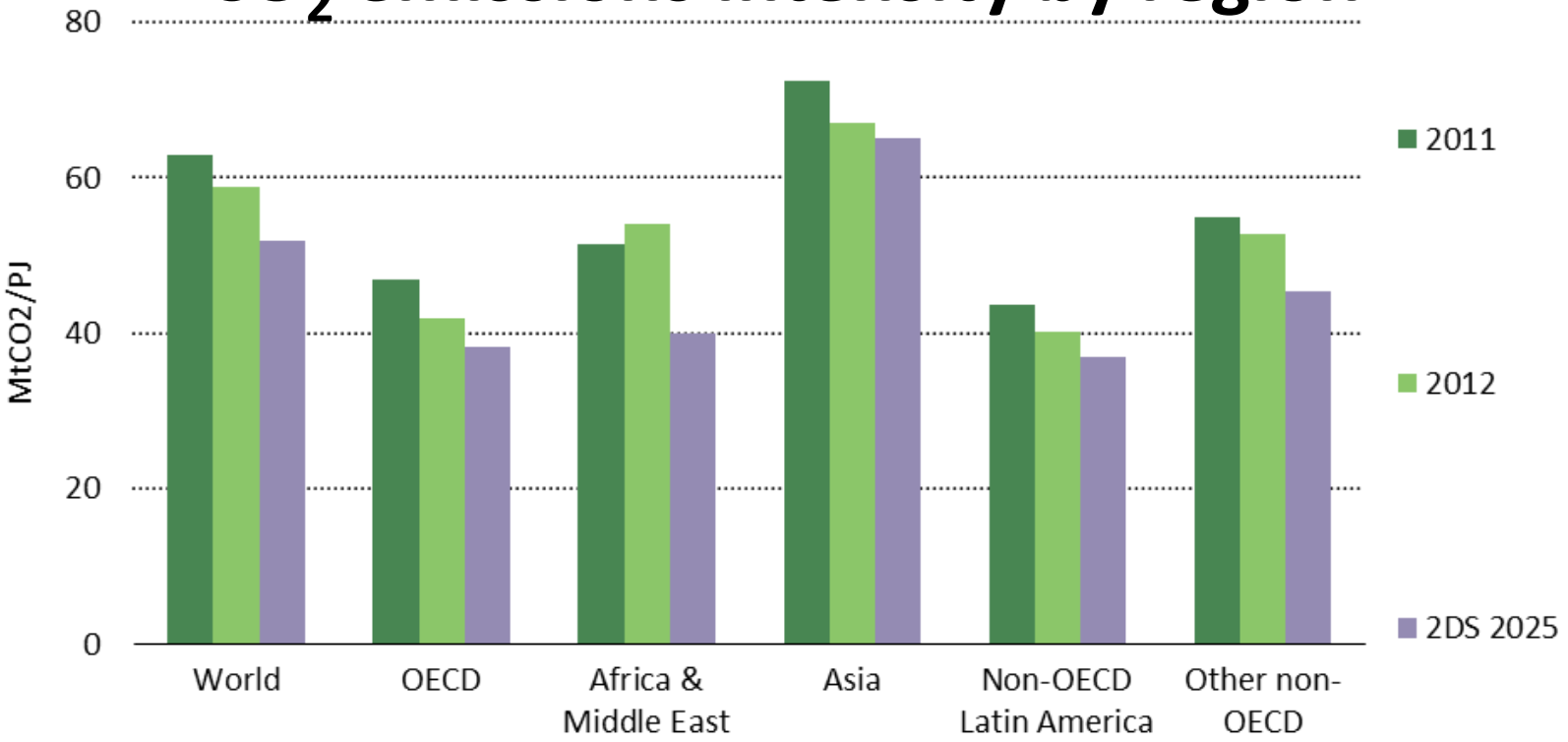
Aggregated industrial energy intensity by region



- **Limitations:**
  - Structural changes in the industrial sector and changes in product value/quality embedded
  - Relies on official data reported at the country level

Industry-level indicators

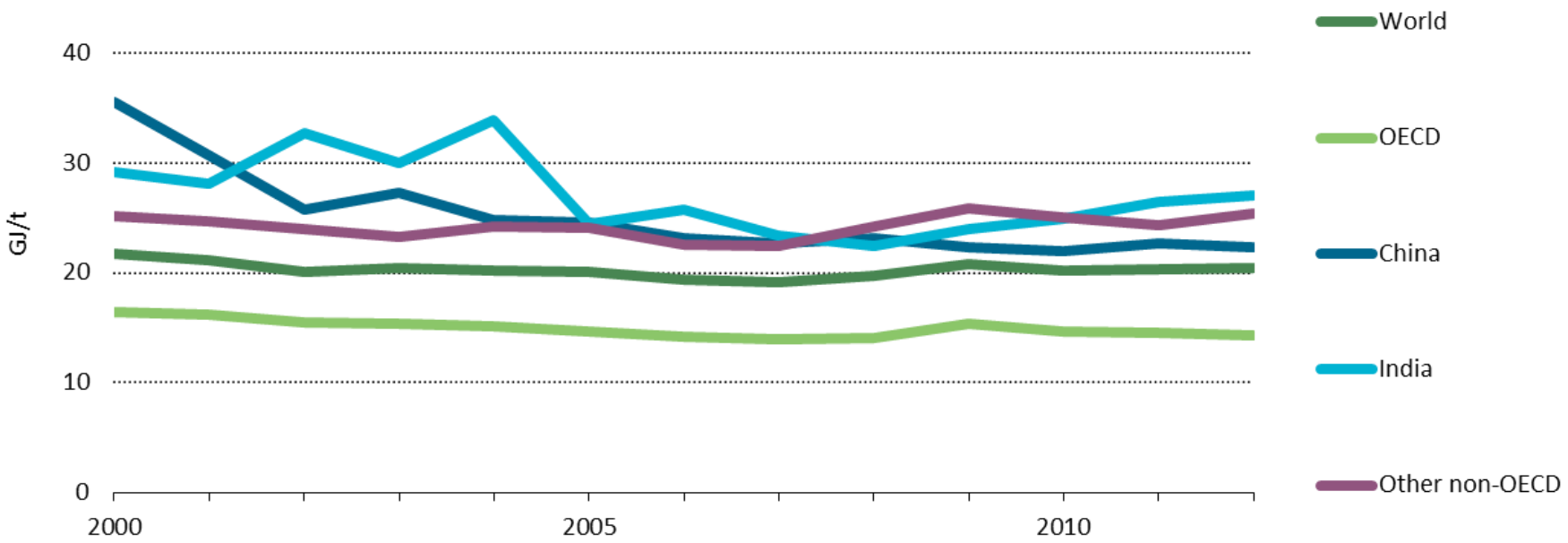
CO_2 emissions intensity by region



- **Limitations:**
  - Structural changes in the industrial sector and changes in product value/quality embedded

Sector-level indicators

Iron & Steel sector: aggregated energy intensity



- **Limitations:**
  - If derived from IEA energy balance – some energy use in captive utilities is included

Challenges

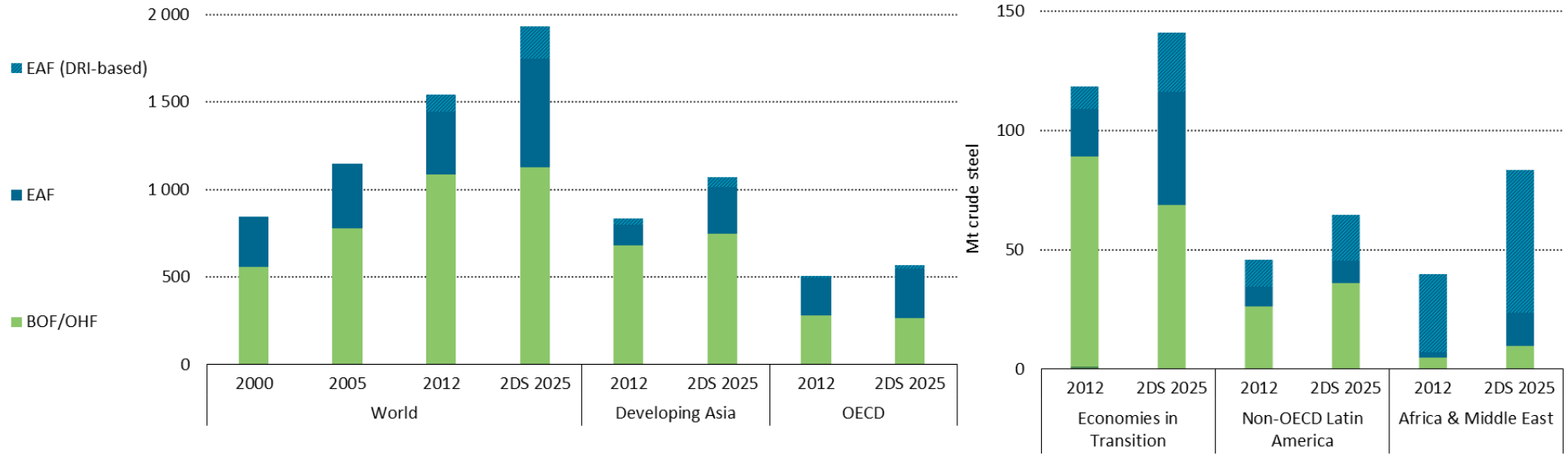
- **Significant data availability limitations to overcome for future editions**
  - Lack of publicly available energy intensity data at technology- and product-level and with significant regional disaggregation
  - Reliance on assumptions & review, rather than real data, makes tracking on the same basis from year to year difficult
  - Particularly important in sectors with more varied end products, such as chemicals and pulp & paper

TCEP 2015

- **Overview of Tracking Clean Energy Progress 2015 project**
  - Annual TCEP book – chapter of ETP and stand alone, free publication
  - Tracks progress in clean energy against 2DS targets, focusing on short-term goals for 2025
  - Structure
    - Industry overview, Iron & steel, Cement
    - Recent trends and recommended actions
    - Indicators graphics

Sector-level indicators

Iron & Steel sector: production by process route



- Allows better insight into product-level changes
- Will be challenging as more emerging technologies gain share
- Process route split for production only - still cannot be compared to reported energy intensity or energy consumption by process route

Sector-level indicators

Global cement indicators

2DS low-demand variant	2011	2012	2020	2025
Cement production (Mt)	3 635	3 834	4 394	4 506
Thermal energy intensity (GJ/t clinker)	3.72	3.58	3.37	3.25
Electricity intensity (kWh/t cement)	98.5	96.2	90.5	90.1
Share of alternative fuels & biomass use	5%	4%	8%	10%
Clinker to cement ratio	0.69	0.69	0.68	0.68
Emissions intensity (tCO2/t cement)	0.59	0.58	0.56	0.55

- **Sub-sector level tracking of thermal energy & electricity intensities**
- **Insight into changes in products and processes via clinker ratio and fuel share**
- **No technology-level data available – i.e. dry vs. wet kiln energy intensities**

Goals for future editions

- **Tracking energy efficiency and low-carbon technology implementation using specific indicators**
  - Number of sites or amount of capacity equipped with EE measures by country/region
  - Energy and CO_2 avoided through implementation of EE measures
  - Energy intensity at technology level
  - Sites where implementation/demonstration of low-carbon technologies has occurred

Questions for discussion

- Which are the key indicators for tracking energy efficiency progress in your sector?
- How can IEA better track industrial EE progress?
- How can confidentiality issues be overcome to allow for meaningful indicators at the technology and country level?
- Which policy actions could support deployment of EE technologies in the industrial sector?

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Thanks

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