New Market Mechanisms: Capability and readiness for the transition among non-Annex I countries

Öko Institute, Joanneum Research, Climate Strategies Side Event:
Post-2012 Market Mechanisms

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Overview

Results based on <u>ongoing</u> study for Ministry of the Environment, Germany (*Market-based mechanisms in a post 2012 climate change regime*)

Goal of assessment:

better knowledge on the actual capability and readiness of non-Annex I **countries** and respective **sectors** to undertake the transition to new market mechanisms

Suitability Assessment Criteria: Countries

- **Responsibility** of countries for causing climate change
- **Capability to respond** to climate change
  - economic, technical and institutional
- **Willingness to engage** in new market mechanisms (Scoring)
- **Ties** with industrialized countries
- **Abatement potential**

Note:

- Changing the **weight of criteria** influences the results
- Applying the criteria with **equal weights**, with and without including willingness towards new market mechanisms

Country Suitability: Intermediate Findings & Ranking

"Usual suspects" with high emissions levels such as **China**, **South Africa** and some of the **oil-producing countries** rank high

many **middle income countries** and, surprisingly, **small island states** would qualify as ready for new market mechanisms

Several of the small island states have good **institutional and economic capacity** and are open for NMM in the UNFCCC negotiations

But: **Abatement potential** is related to economic power

Ranking	Country	Suitability for new market mechanisms	Country	Suitability for new market mechanisms (w/o willingness)
1	Trinidad and Tobago	38.2	Mongolia	41.1
2	Bosnia and Herzegovina	36.8	Qatar	38.9
3	South Africa	34.7	Turkmenistan	38.5
4	Chile	33.7	Bosnia and Herzegovina	36.8
5	Mexico	33.5	China	36.0
6	Palau	33.3	Trinidad and Tobago	35.3
7	Guyana	33.2	Uzbekistan	34.8
8	Antigua and Barbuda	32.5	Bahrain	32.8
9	South Korea	32.3	United Arab Emirates	31.9
10	St. Kitts and Nevis	32.3	Singapore	31.0
11	Peru	30.7	Tajikistan	29.8
12	Argentina	30.3	Palau	29.1
13	Bahamas	30.0	Guyana	29.0
14	St. Lucia	30.0	Macedonia	28.9
15	St. Vincent and the Grenadines	29.1	Antigua and Barbuda	28.2
16	Colombia	29.0	St. Kitts and Nevis	27.9
17	Seychelles	28.9	Kyrgyzstan	27.4
18	China	28.8	Iraq	26.1
19	Jamaica	28.4	Serbia	25.7
20	Barbados	27.3	Moldova	25.5
21	Belize	27.3	Kuwait	25.4
22	Papua New Guinea	25.3	Malta	25.1
23	Dominica	24.7	Bahamas	25.0
24	Maldives	23.7	St. Lucia	25.0
25	Mauritius	23.5	Saudi Arabia	24.7

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Suitability Assessment Criteria: Sectors

Sectors:

- Abatement potential
- Data availability
- Sector structure

Large emission sources:

- Power
- Cement
- Iron and steel
- Aluminium
- Pulp and paper
- Oil / gas / coal mining

Dispersed emission sources:

- Transport
- Buildings
- Waste

Criteria and indicators for assessing sectors

Criteria	Indicators
Abatement potential: how effective and cost-effective a NMM would be	- Estimates of abatement potential at global and NAI level: IPCC - Estimates of energy efficiency potential (global and regional): UNIDO - Estimates of sectoral emission levels (regional or national): NatComms
Data availability (and or systems to collect needed data): how fast a NMM can be implemented	- Existence of global industry association that collects data - Coverage of such data - Amount of CDM projects and host countries in the sector (still to be done) - Assessments in literature
Sector structure: the more homogeneous and concentrated, the easier to gather data, monitor emissions and organise the sector	- Estimates of amount of installations in sector - Assessments in literature

Sector Suitability Analysis
Mitigation potential by sectors: developing countries in 2030

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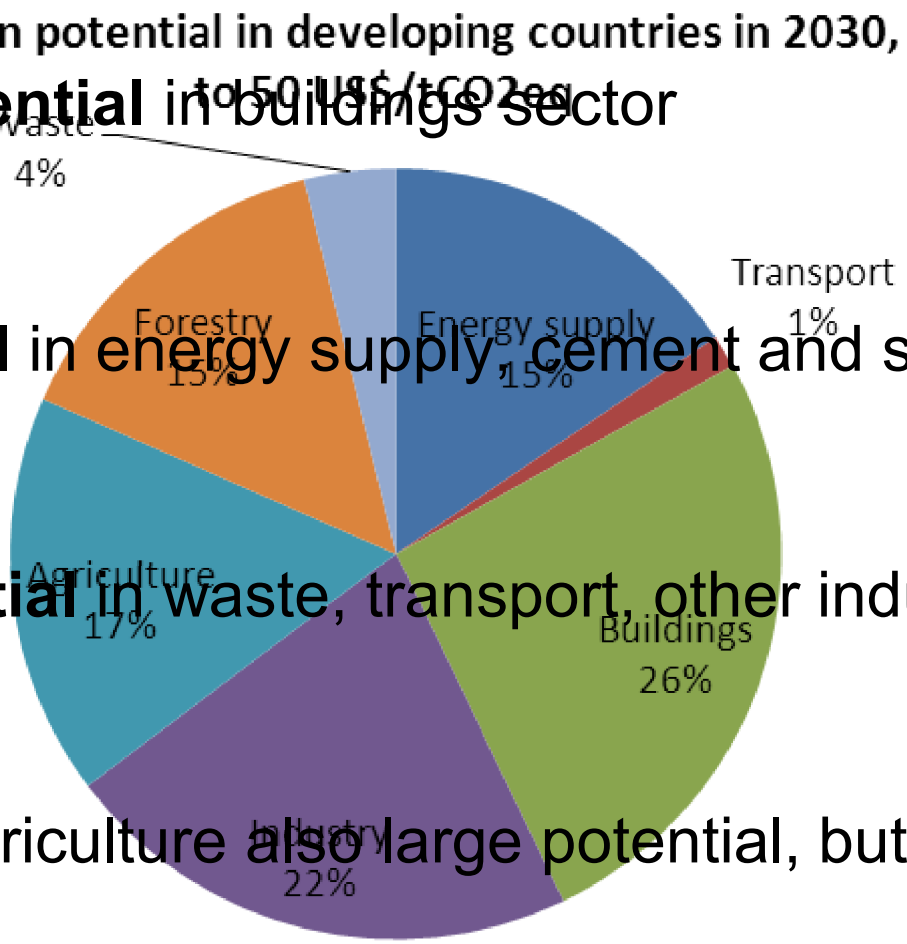
Very large potential in buildings sector

Large potential in energy supply, cement and steel

Medium potential in waste, transport, other industries

Forestry and agriculture also large potential, but out of scope of study

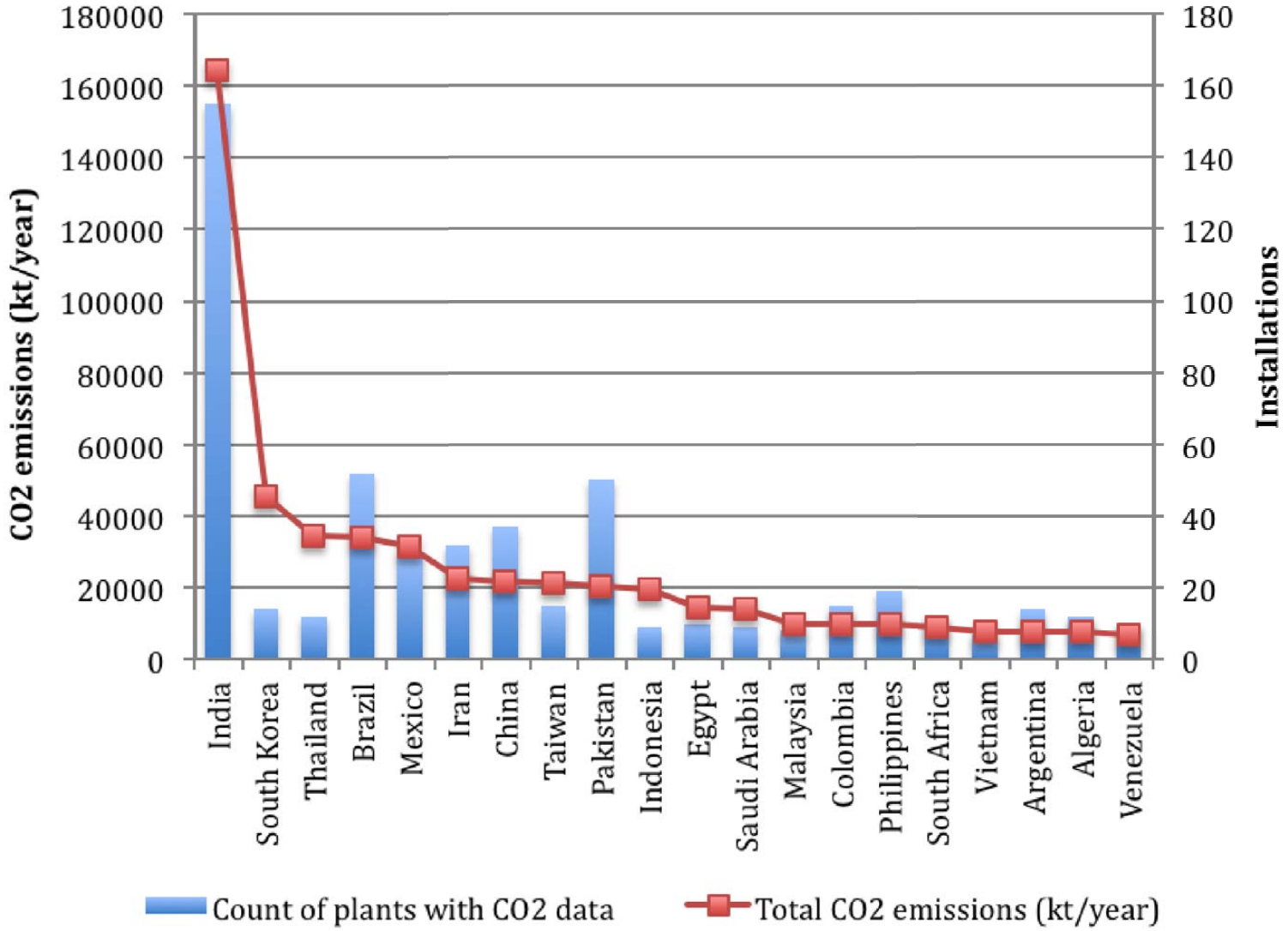


Source: IPCC WGIII AR4 Report, Chapter 11, p. 632 (Barker et al., 2007)

Example: cement sector

- Global cement industry represents **~5%** of anthropogenic emissions
- Developing countries account for **73%** of global cement production
- **China** is largest producer (47%)
- UNIDO (2010) estimates that **short-term energy efficiency** improvements could reach **25%** in developing countries (including EITs)
- **Long lifetime of equipment** and high capital costs limit short-term economic potential → technical potential is **larger**

CO_2 emissions and number of installations in the cement sector included in the IEA GHG database



Source: IEA GHG, 2006.

Data availability in the cement sector

CSI collects data from the cement sector using a **standardised protocol**

- Covers direct and main indirect emission sources

Issues with data

- Coverage **varies widely across countries**
- Only **20% of cement production in non-Annex I countries** covered
- Data publicly accessible only in **aggregated form**, due to confidentiality concerns of industry

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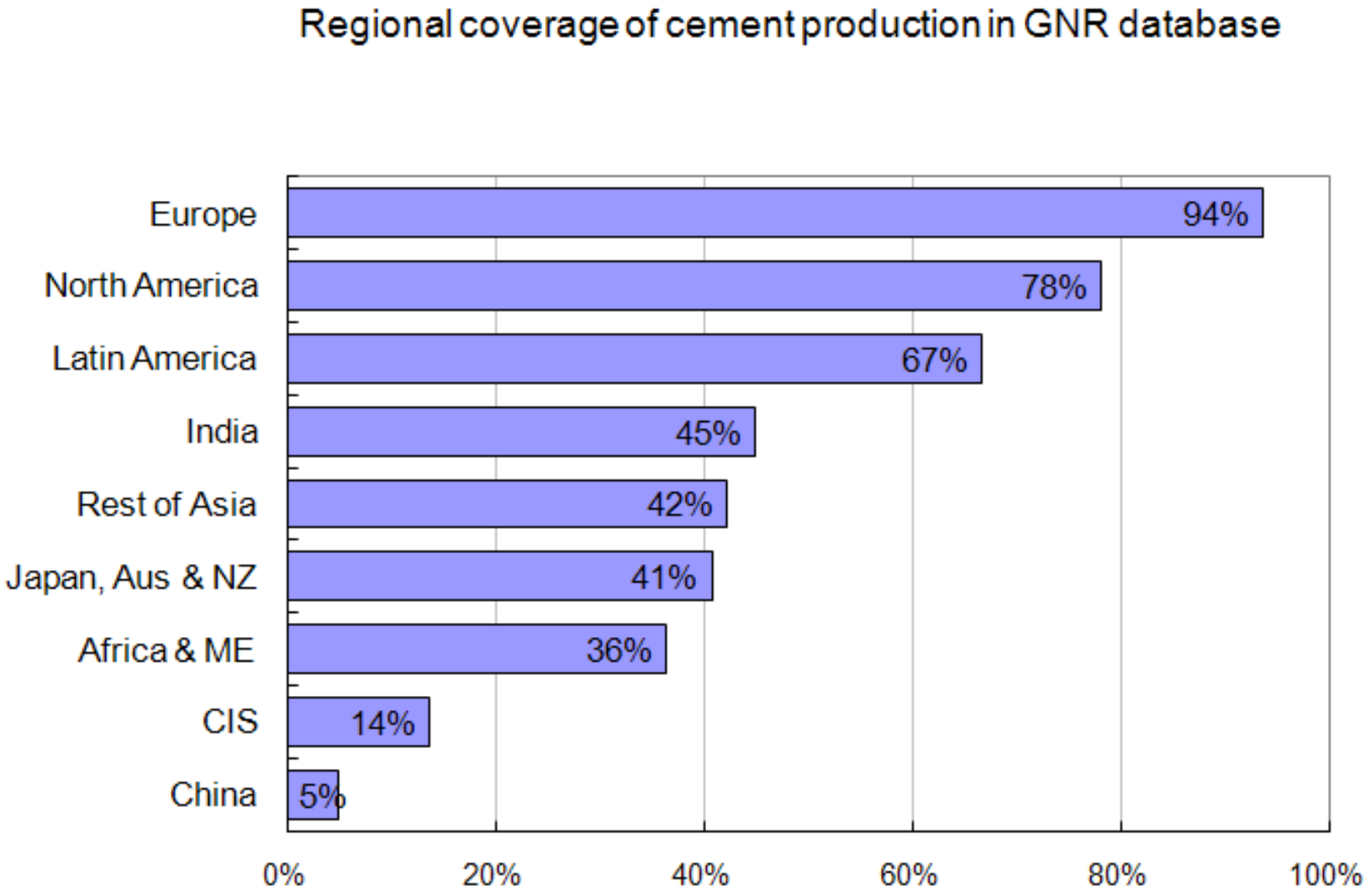
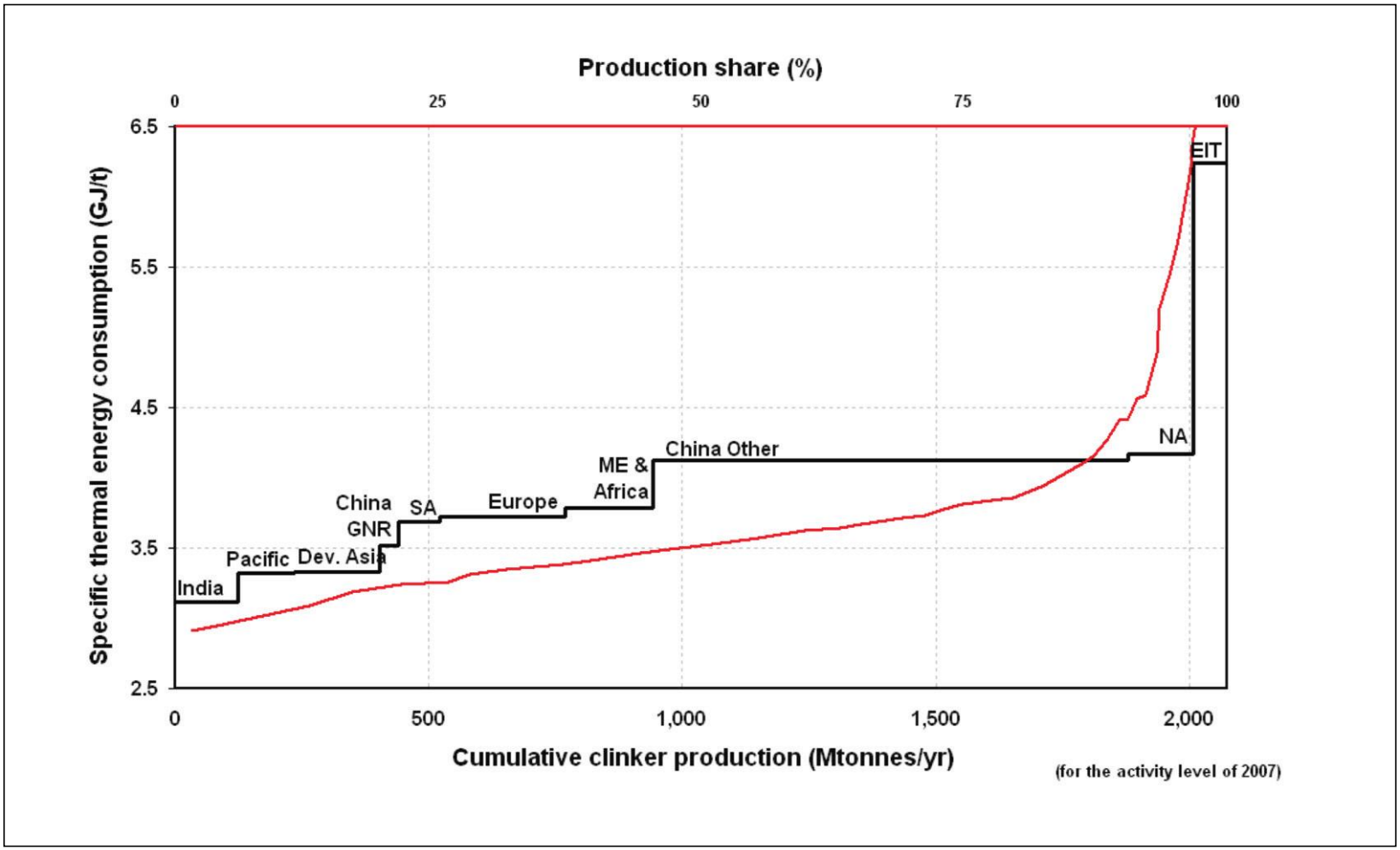
Data availability in the cement sector



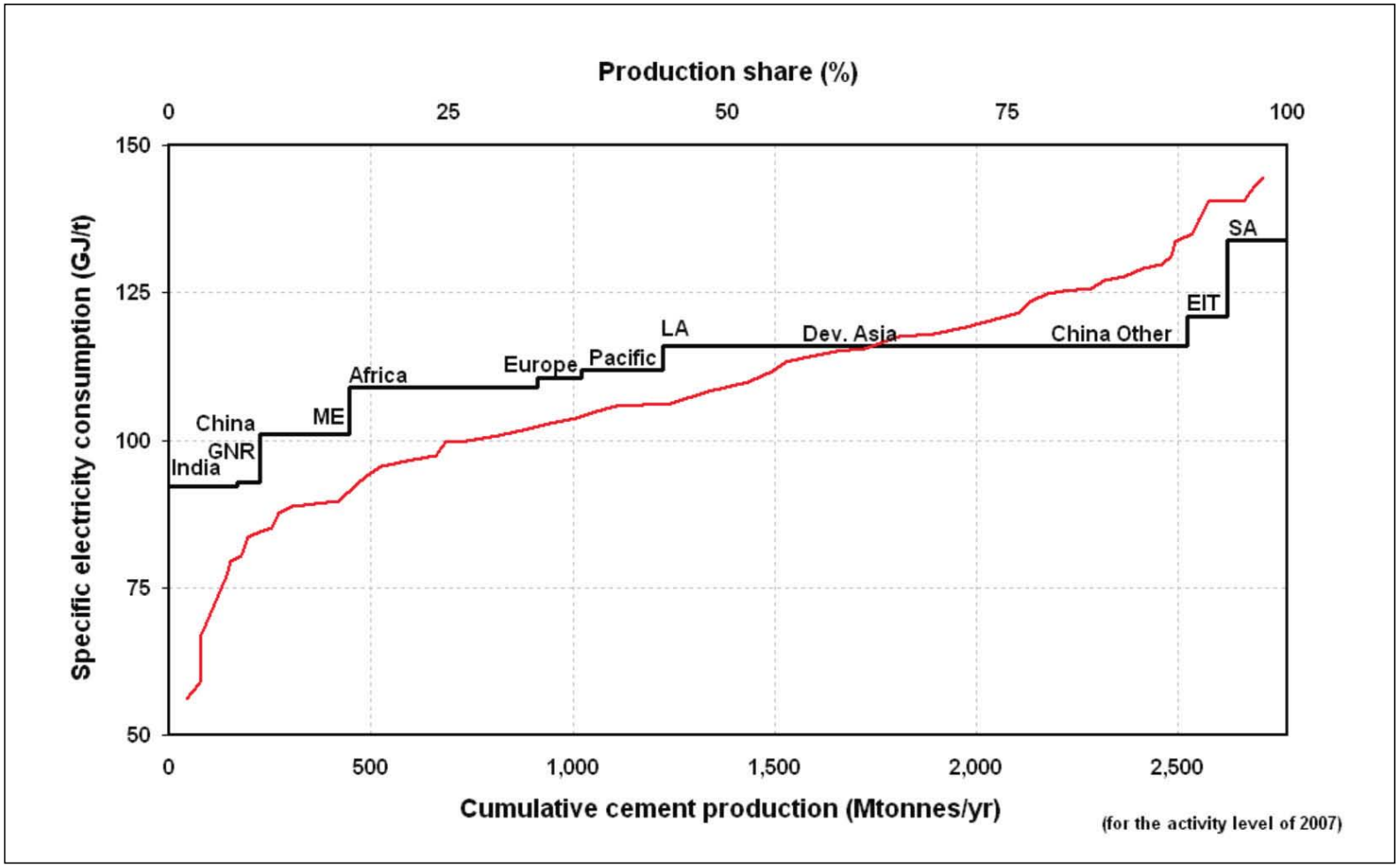
Source: WBCSD, 2009, p. 10

Figure 4.2: Regional coverage of cement production in the GNR database

Energy efficiency benchmark curve for clinker production, year 2007



Energy efficiency benchmark curve for cement production (grinding), year 2007



Source: UNIDO, 2010, p. 48

Summary: Cement sector

Total **abatement potential** in developing countries: **Large**

Countries with large emissions or sectors (abatement potential):

China, EITs, Middle East, Africa, South Africa, other Asian countries; India has large sector but is already efficient

Sector structure:

Highly fragmented; many small companies especially in China; mainly locally traded, with low competitiveness concerns

Data availability:

CSI has good coverage in Latin America, but low in all other developing countries, especially China

Sector Suitability: Intermediate findings

In terms of **abatement potential**, power, buildings, cement and iron and steel are the most attractive sectors, while aluminium, pulp and paper, oil refining and transport have low potential

Amount of installations difficult to assess

Industry initiatives to **collect data** are promising, but with limited coverage in developing countries

Attempts to building **benchmark curves** for the main industries (by UNIDO) provide an overview of where the abatement potential is located

Implications for policy makers

- **Pilot schemes** are urgently required to bring substance to the debate!
  - Focus on **feasible** solutions, not the theoretically largest reductions
- **Country choice**
  - Regarding "**classic**" assessment criteria: No news
    - Suitability for usual suspects (Major emitting countries and major emitting sectors)
  - But applying "**political**" assessment criteria:
    - **Middle income countries** and in particular **SIDS** become interesting candidates
- **Sector choice**
  - Focus on **data availability** and **sector structure**,
  - Reflect host country ranking
- Implement a NMM pilot e.g. for the **cement sector in Colombia**

Thank you for your attention!

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