International Workshop on Carbon Markets in Emerging Economies

University of Sao Paulo, Brazil

CDM Experiences in Other Countries and Implications for a Low Carbon Economy in Brazil

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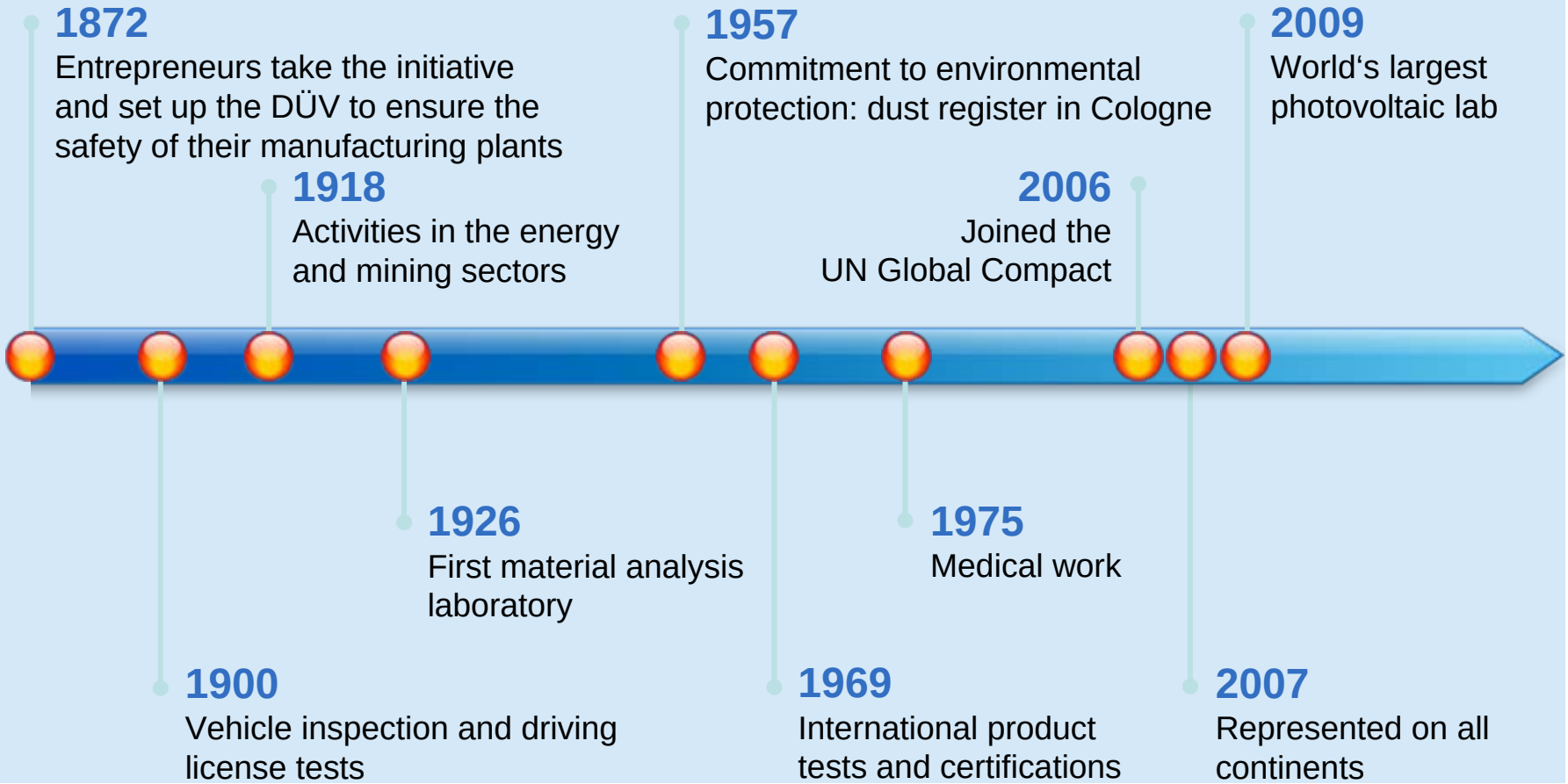

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Business Units of the TÜV Rheinland

Overall, much more than adding up parts

Industrial Services

Mobility

Products

Life Care

Training and Consulting

Systems

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At Home on All Continents

490 locations in 61 countries around the world.

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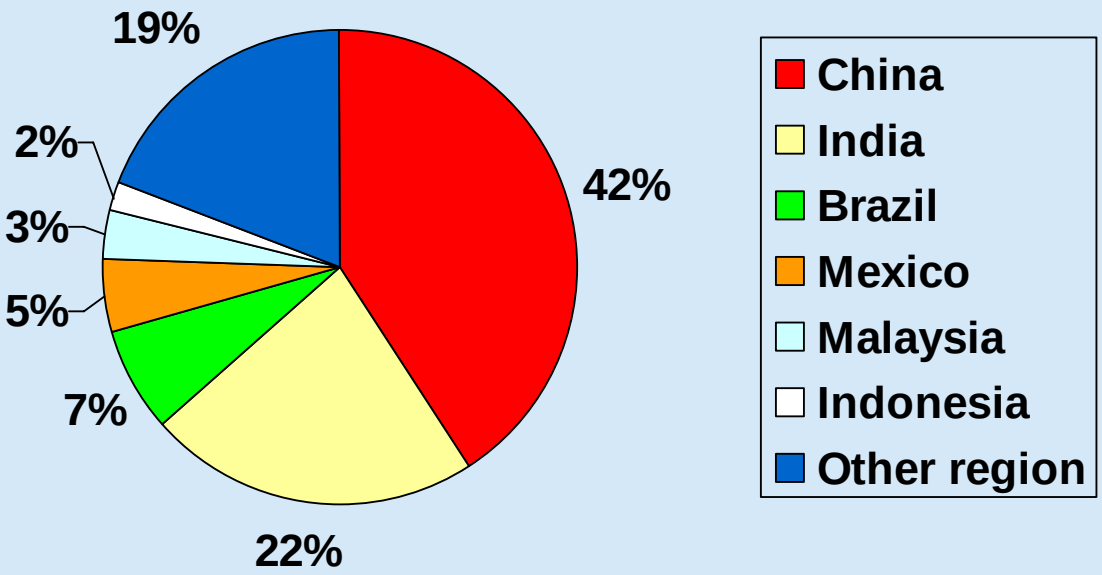
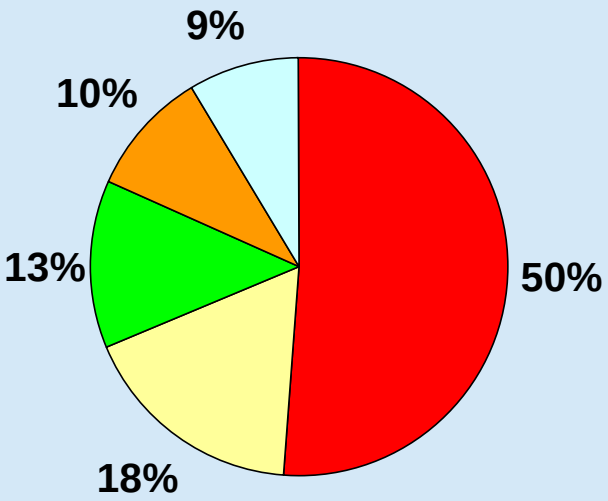
Amount of Registered CDM Projects



China	1023
India	560
Brazil	179
Mexico	123
Malaysia	86
Indonesia	49
Other Regions	479

Data source: UNFCCC website, November 2010

Amount of Issued CERs



China 50 %	230	millions t CO_2
India 18 %	80	millions t
Korea 13 %	60	millions t
Brazil 10 %	43	millions t

Data source: UNFCCC website, November 2010

Lessons Learnt by DOE

1
Limited understanding and proof of "Additionality"

1
Limited evidence for CDM consideration

2
Missing LoA

2
Application of outdated methodologies

3
Benchmark missing in host country

3
Local language and competence

4
Limited evidence of Local Stakeholder Process

4
Communication between PP, consultant and DOE

5
Implementation not conform with registered PDD

5
Data monitoring not according to monitoring methodology

CDM Experience in China

- Professional + early developed CDM market
- Most registered CDM projects
- Support from Host Country DNA
- Availability of Emissions Factor
- Good competence of local CDM consultants
- Fed-in tariff of renewable projects differs province by province
- Tax conditions to be taken into account

CDM Experience in India

- High + early developed CDM market
- Second most registered projects
- Good competence of local CDM consultants
- Bureaucratic LoA process

CDM Experience in Africa

- Least develop CDM market
- Good CDM Potential
  (e.g. Biomass + Renewable Energies)
- Difficulty of financial sources
- Weak competence of local CDM consultants

Summary of CDM Experiences

- **CDM is a quite complicated, costly and time consuming mechanism**
- **Post - Kyoto 2012 is still unclear**
- **Voluntary Market has high potential (e.g. Low Carbon Instruments)**

Low Carbon Economy - Definitions

Minimal output of GHG emissions into the biosphere, esp. CO_2

It is an economy in which:

- **Growth of GHG emissions is halted and then reduced**
- **Carbon has a price and affects balance sheets**
- **Energy from fossil fuels is made a constrasting resource**
- **Enterprise stakeholders take action based on carbon**
- **Carbon presents a risk and an opportunity to the enterprise**

A low carbon economy includes the implementation of carbon neutrality schemes, geo-engineering and adaptation to global warming

Low Carbon Economy - Targets

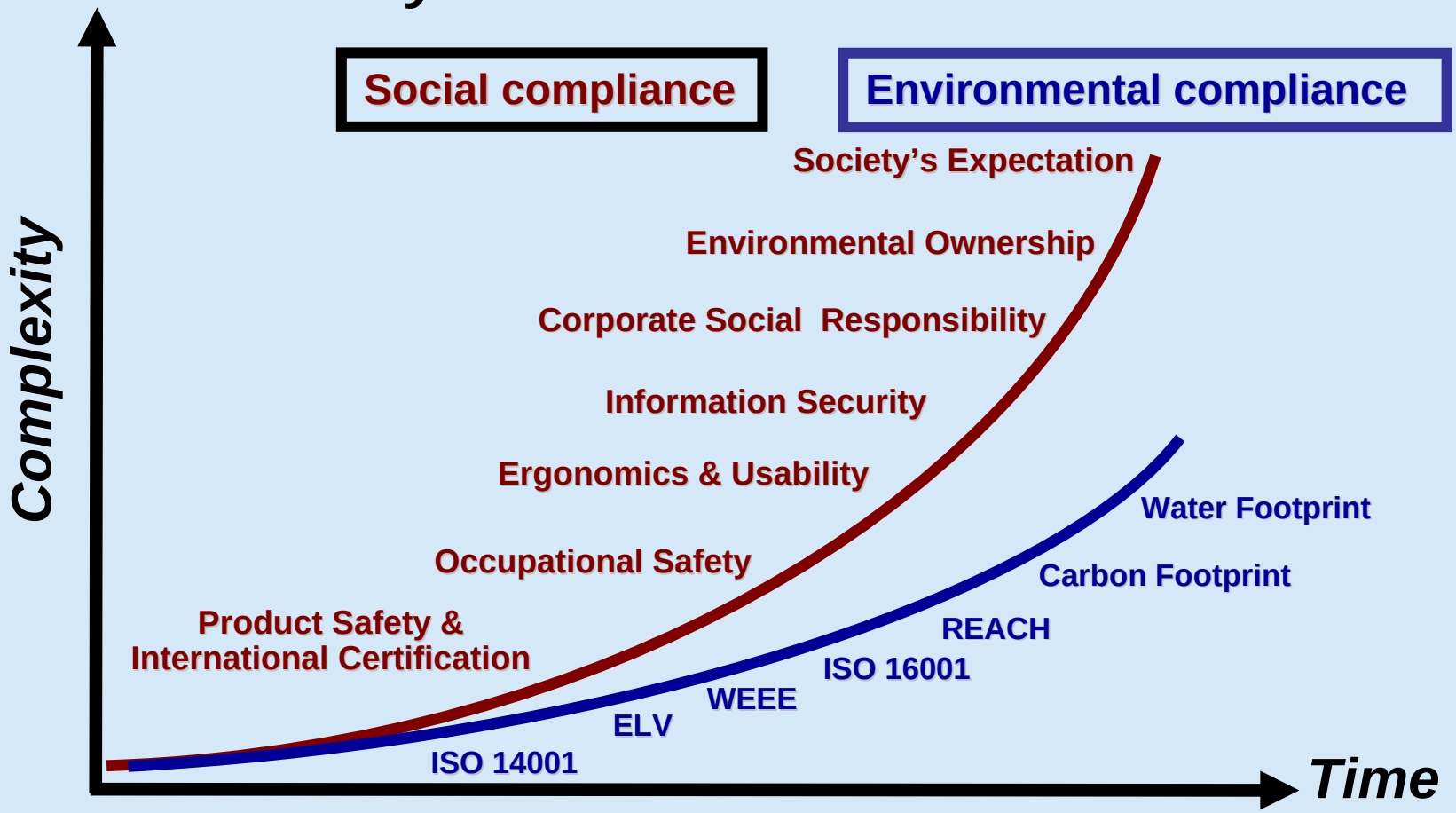
Integrate aspects from sectors around technologies that produce energy and materials with low GHG emissions, efficient use of these and good practices of waste handling.

Relevant Sectors

Agriculture / Forestry	Industry	Building	Transport	Services
Alternative fuels, Cogeneration, Heat recovery, Environmental control systems	Smart motors, Industrial process automation, Dematerialisation	Smart logistics and buildings, Dematerialisation (teleworking), Smart grid	Smart logistics, Transport optim-isation, Efficient vehicles, Traffic flow monitoring, Planning+Simulation	Smart grid, Efficient power generation, CHP

Carbon Footprint

Sustainable Systems for All Sectors



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Carbon Footprint

Sustainable Systems for e.g. Industries

Corporate Sustainability

Management and reporting (e.g., GRI, ISO 14.001, ISO 16.000, OHSAS 18.000)

Key Performance Indicator (KPI) systems

Corporate Carbon Footprint

Supply Chain Management

Product Sustainability

Life Cycle Assessment

Design for Environment

Product Carbon Footprint

Low Carbon Economy
Opportunities

- **Energy Efficiency solutions**
- **Renewable energy supply chains**
- **Exploiting waste heat opportunities**
- **Waste to energy projects**
- **Wind energy on industrial estates**
- **Low carbon products for construction and engineering sectors**
- **Decarbonising electricity supplies**
- **Low carbon design of buildings**

Low Carbon Economy
Benefits of Carbon Neutral Products

Environment

Indirect investment in climate protection projects will be actively supporting of environmental protection objectives

Technology

Climate protection projects abroad help to transfer technology and promote sustainable development

Image

A positive image is the good perception of problems which means a multiplication of the effects

- CO_2 emissions verified
- CO_2 neutral
- Annual Audit

Quality

The Carbon Footprint calculation shows potential for innovations and improvements.

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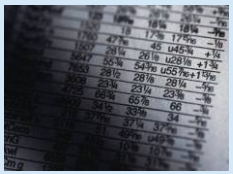
Low Carbon Economy

Providing Assurance for Carbon Neutrality

Carbon Footprint

Certificates

Compensation



Calculation
Consultant
Product Suppliers

Award
Registry
Program Supplier
Project Standard

Retirement
Product Suppliers
Consultant

Independent
Test + Certification

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Low Carbon Economy in Brazil

Summary + Perspectives

- **Business Opportunities**

  Optimization of process operations will create carbon savings and delivery of carbon credits

- **Emissions Reduction**

  Using of advanced technologies will provide a wide range of advice and support for all sectors and companies of all sizes

- **Policy**

  Set up of appropiate policy frameworks to motivate companies in mid and long term investments in carbon goods and services.
  Areas of focus:
  Innovation policy, fiscal incentives, energy efficient buildings, goods and products

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Carbon Services

EU ETS

Kyoto / ProMechG / CDM + JI

VER Projects / ISO 14.064

Carbon Footprint Certification

Offsetting and Carbon Neutrality

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Thank You !

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