

The CDM Market from the Enterprise Perspective

German-Indian Sustainability and
Climate Change Dialogue
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Jörg Jasper
Senior Economist
EnBW Energie Baden-Württemberg AG



Energie
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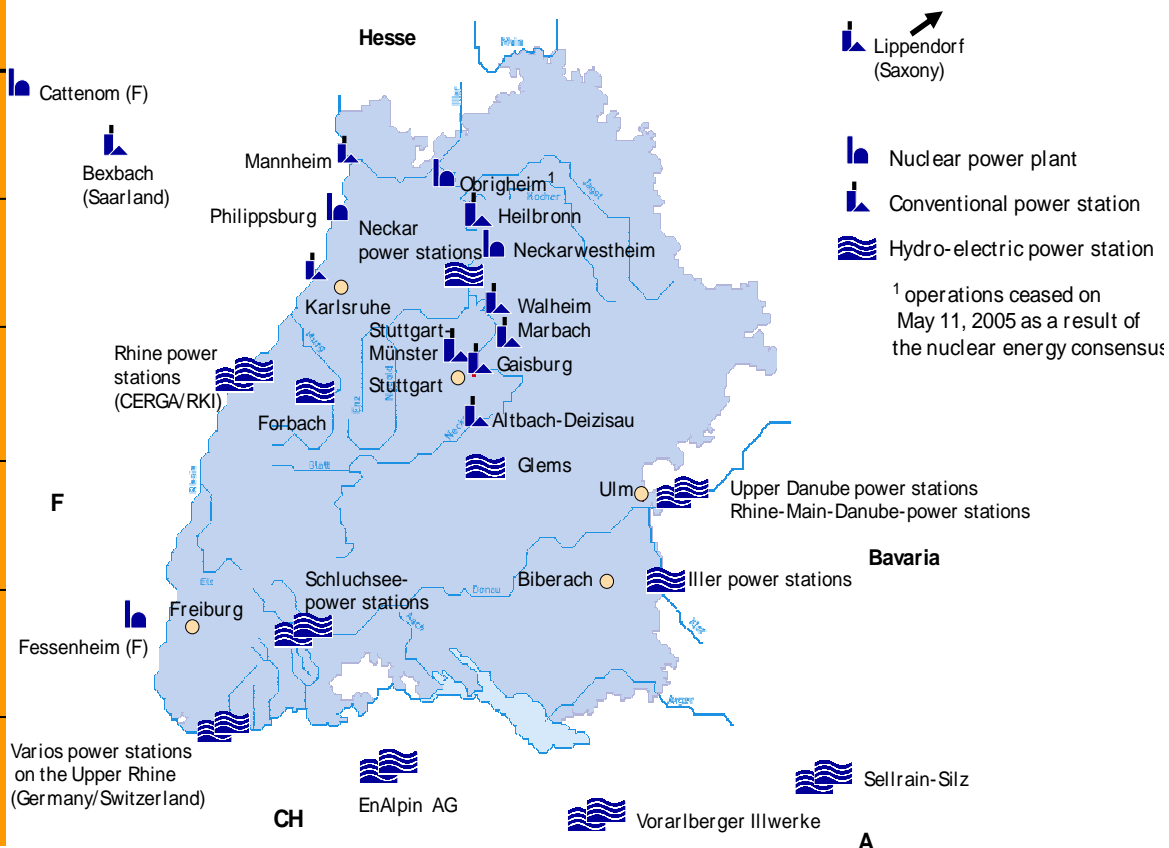
1. Who we are

2. EnBW's present and future activities in CER markets
3. A look at the CER-market India
4. Our Interests, Strengths and Expectations

EnBW Group, Located in South-West Germany



		2007
External revenue, total	m €	14,712.2
EBITDA	m €	2,336.4
Result of continuing operations	m €	1,416.1
Operating cash flow	m €	1,558.7
Capital expenditures	m €	816.1
Employees (annual avg.)		20,499



EnBW Energy Mix Installed Capacity (net)



EnBW group		2007	2006
Nuclear power plants (incl. EDF contracts)	M	4,842	4,843
	W		
Conventional power stations	M	6,620	6,579
	W		
Run-of-the-river and storage power stations	M	3,415	3,354
	W		
Other renewable energies	M	86	35
	W		
Total	W	14,963	14,811

March 2008

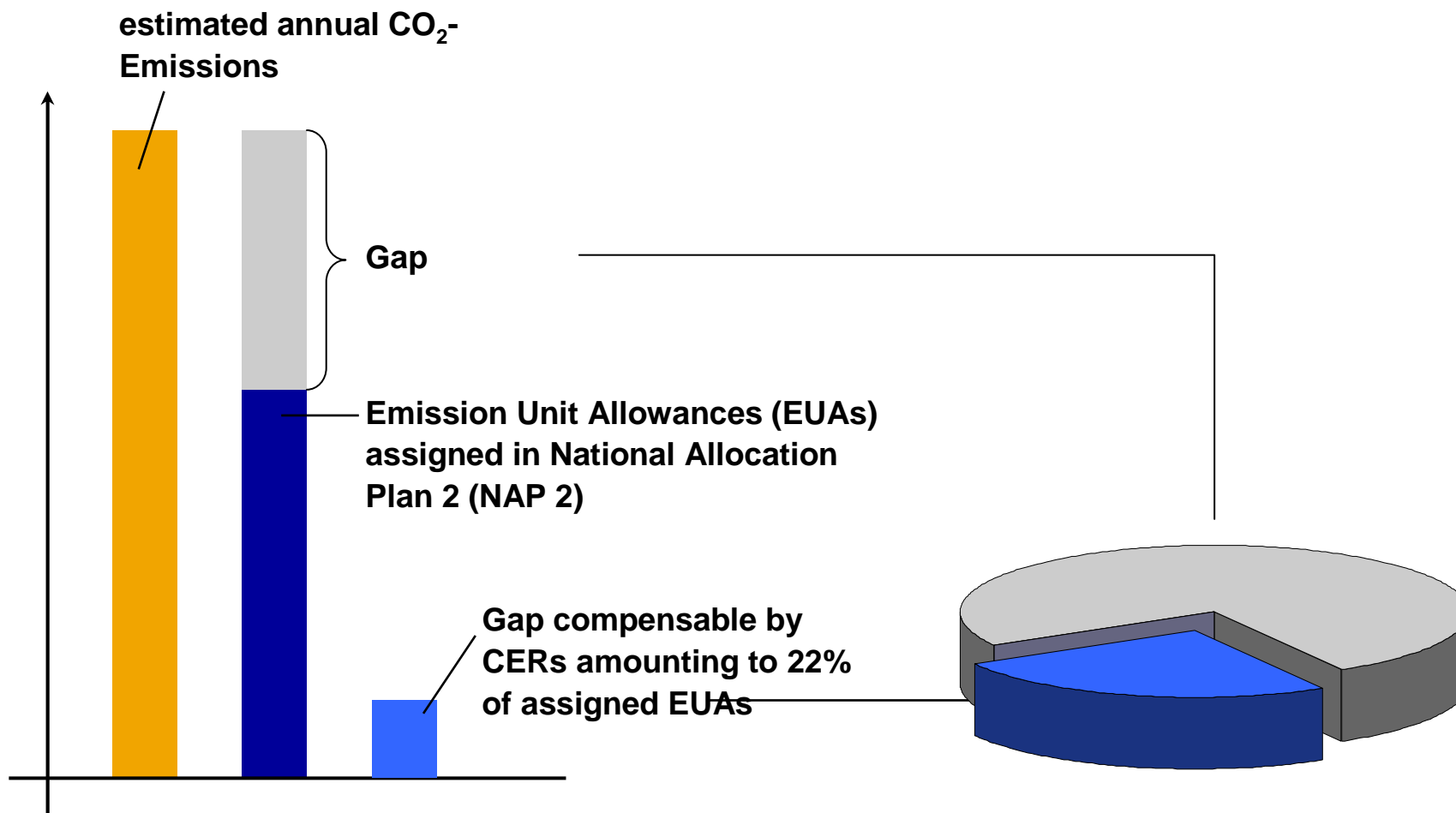
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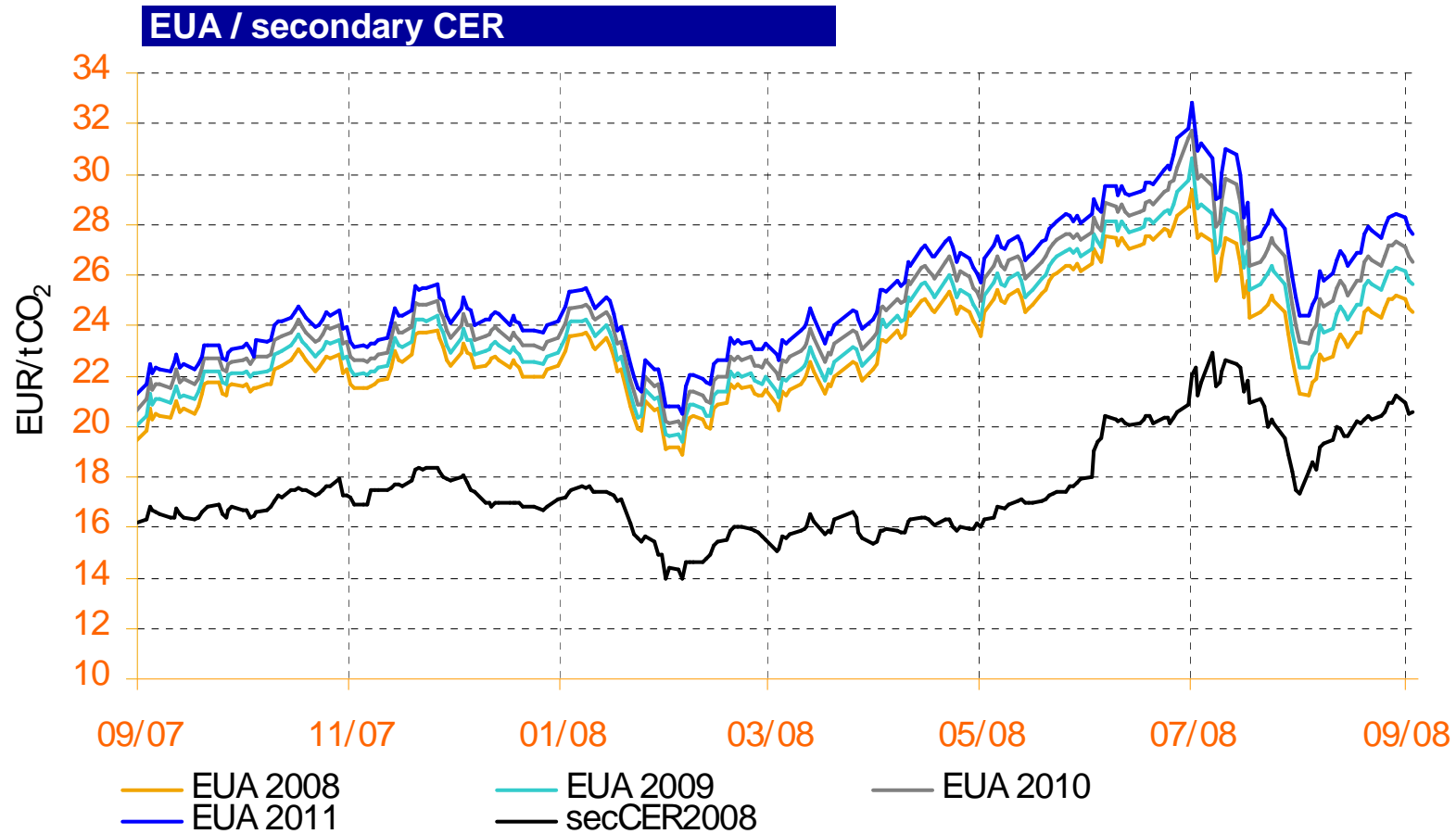
3. A look at the CER-market India

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European Union Emission Trading Scheme (EU ETS) and Compliance: Under NAP II, we have a gap to fill.



Sec. CERs: still cheaper than EUAs...

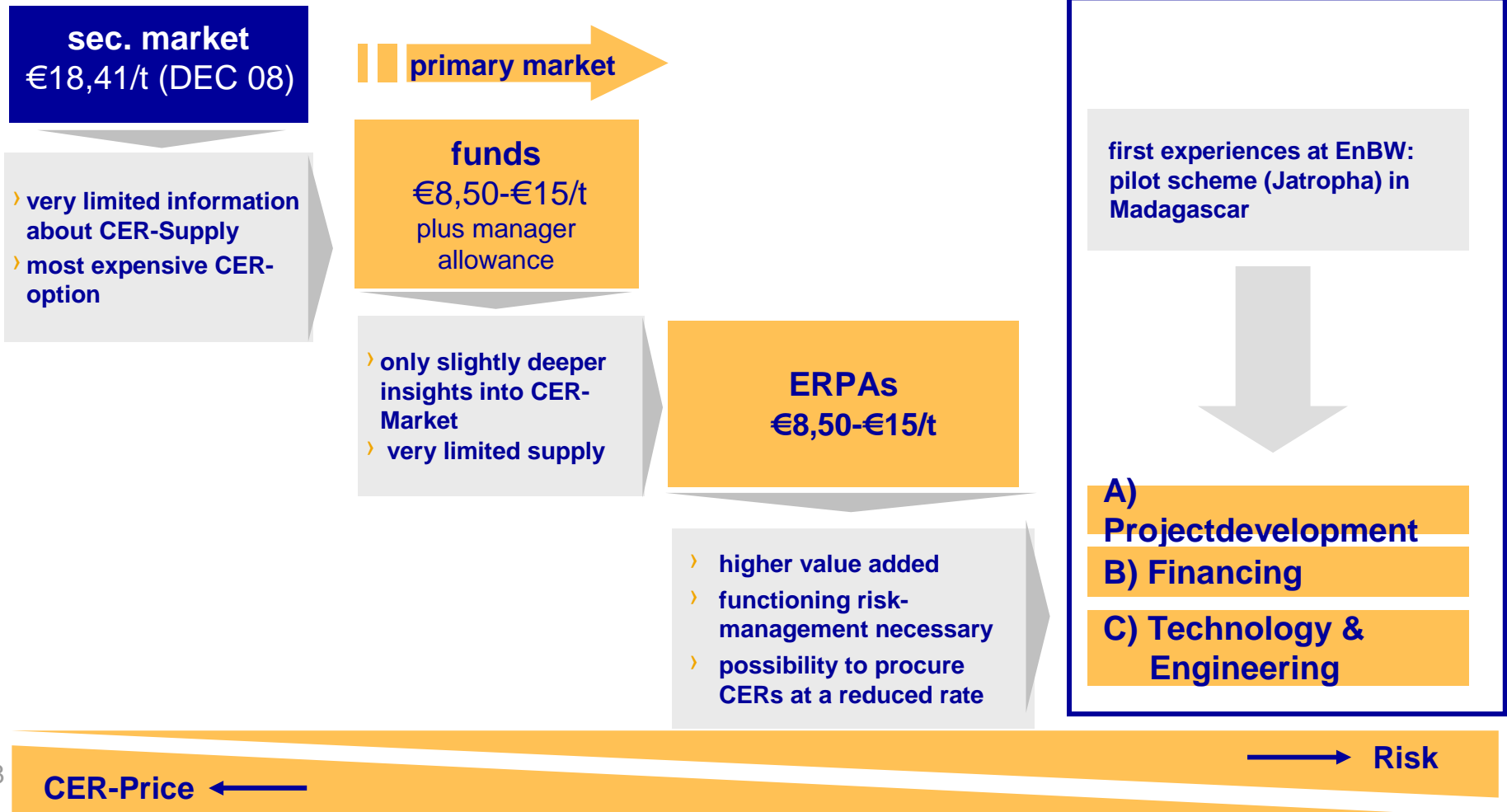


... but entering the primary market might be advisable.

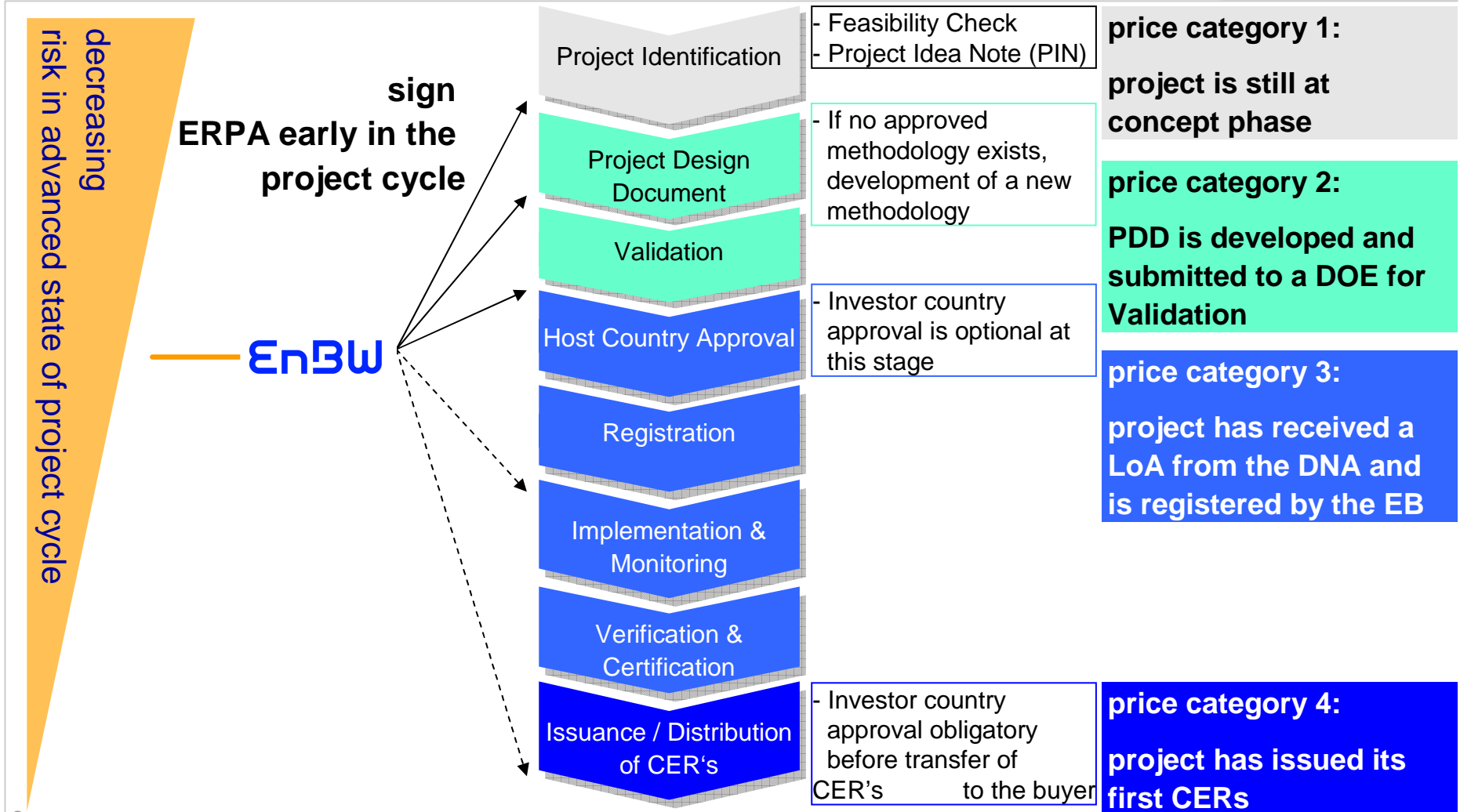
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EUA* 08: €23,19/t

current commitment of EnBW



We try to sign ERPAS early in the CDM Project Cycle.



Transaction costs for CDM Project approval are substantial.

1: FILL IN A PROJECT DESIGN DOCUMENT (PDD)

→ cost: approx. 28.500 \$ (with approved methodology). approx. 85.000 - 115.000 \$ (development of new methodology).

2. APPLY FOR GOVERNMENT APPROVAL

3. CHOSE AN EXISTING BASELINE/METHODOLOGY OR PROPOSE A NEW ONE

→ cost: 60.000 \$

4. HIRE A DESIGNATED OPERATION ENTITY FOR VALIDATION

→ cost: 28.500 - 43.000 \$

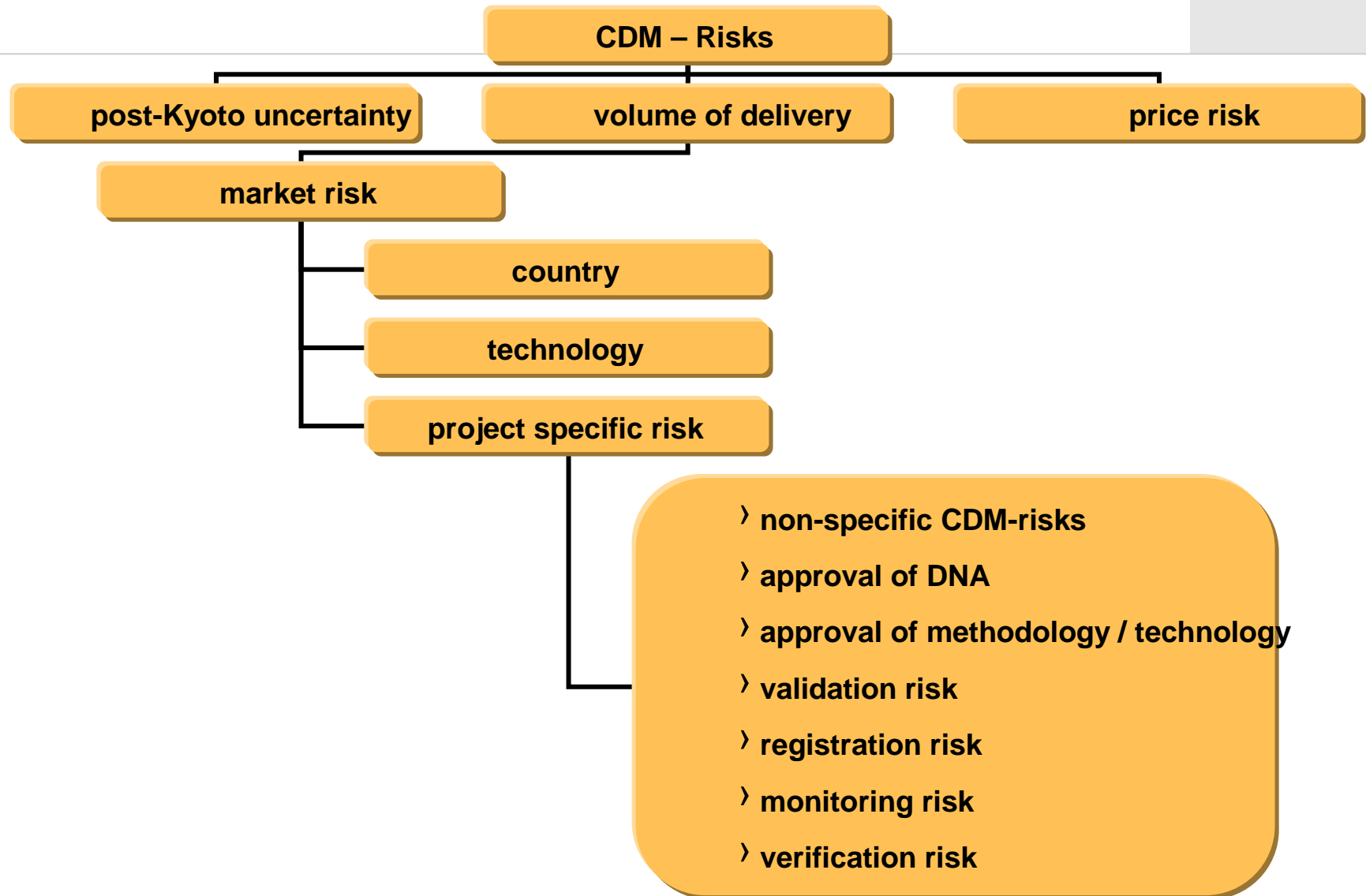
5. WAIT FOR APPROVAL FROM THE EXECUTIVE BOARD

→ cost: 8.100 - 51.500 \$

6. HIRE A DESIGNATED OPERATION ENTITY FOR VERIFICATION

→ cost: approx. 21.500 \$ p. a., assuming yearly verification.

However, several project risks have to be managed.



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CER-market India: growing rapidly



Projects with 'host country approval' in India, Nov. 2006 and Sept. 2008

Project category	Number of projects		Increase (%)
	Nov. 2006	Sept. 2008	
Renewables	246	535	117,5
Energy efficiency	134	299	123
HFC, PCF, methane	29	62	113,8
Fuel switch	22	48	118
Waste treatment	8	16	100
total	439	960	118,7

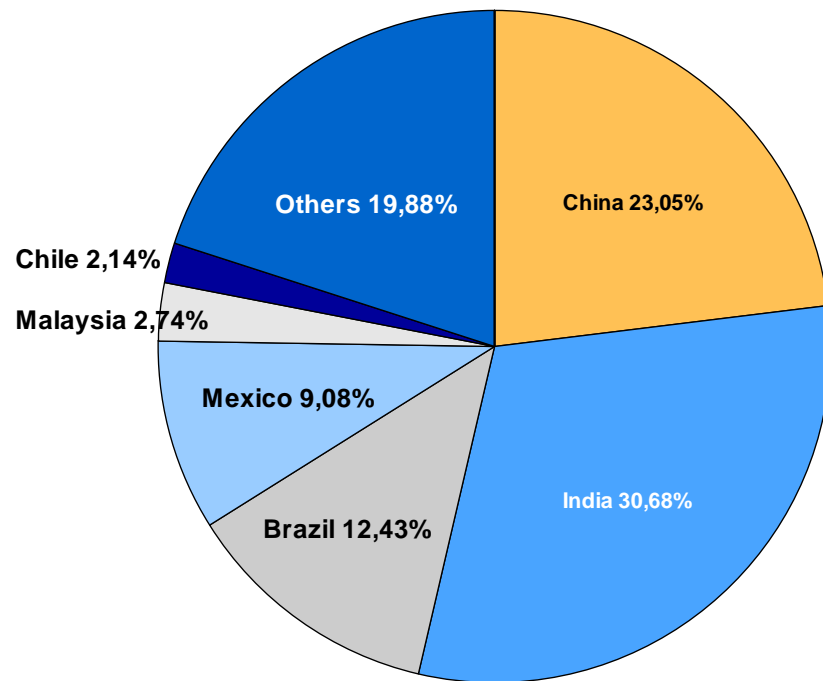
Source: Ministry of Environment and Forests

India is one of the leading countries of origin for CERs.

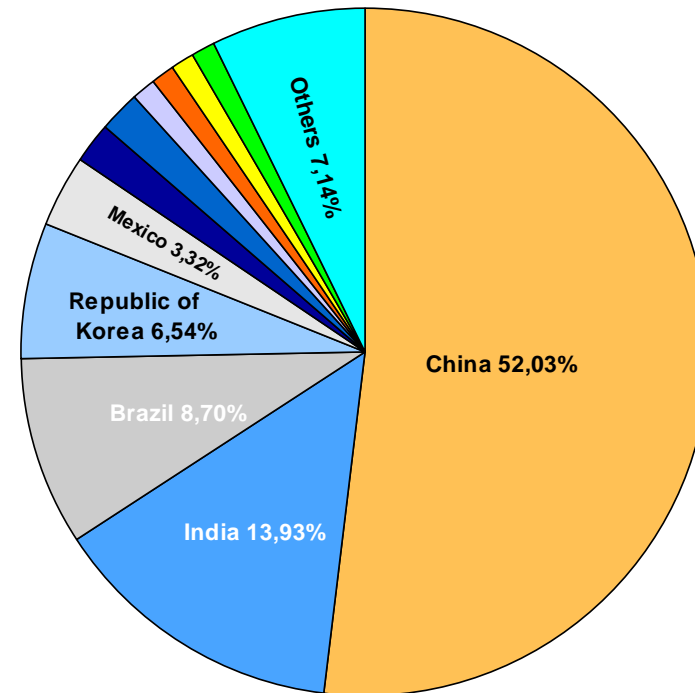


- › 1167 emission reduction projects notified at CDM EB, 358 originate in India, so India is No. 1' in this respect

- › However, large amount of small and medium-sized projects

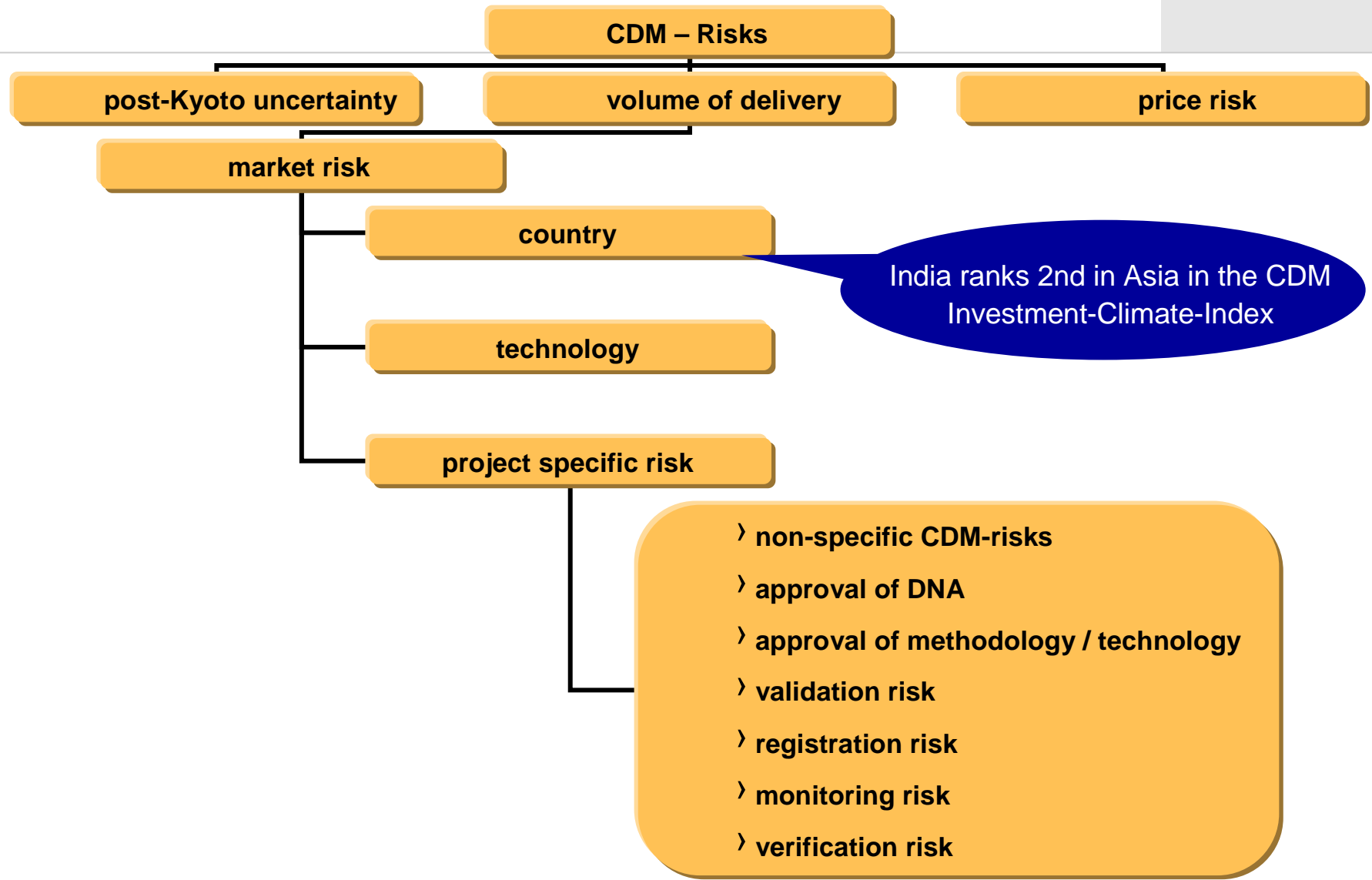


Source: UNFCCC



Expected average annual CER from registered projects by host partner. Total: 223,351,524

Compared to mother host countries, country-specific risks are limited in India.



India ranks 2nd in Asia in the CDM Investment-Climate-Index

Some characteristics of the Indian CER-market



- › CDM-boom goes on: According to India's DNA, 30-40 projects are submitted every month
- › Discussion about quality of projects goes on; hearsay: project documentation does not always comply with international standards
- › Many unilateral projects (without foreign participation), several public-sector undertakings entering market
- › Many international buyers of CO2 allowances active in market (World Bank Prototype Carbon Fund; KfW-Klimaschutzfonds...)
- › Price expectations of Indian sellers have become more realistic since 2006
- › NCDMA (India's DNA) is quick and efficient; project approval procedure after submission of Project Concept Note and PDD takes 60 days

Energy-related CDM-investment opportunities in India

- › some 100 GW of power plant capacity will have to be built within next decade to keep up with growth rates of 7 – 8 per cent p.a.; energy sector will expand massively:

	India	OECD
primary energy consumption (Mtoe, 2007)	404,4	5.566,4
electricity total generation (TWh; 2005)	699,0	10.391,0
electricity consumption/population (kWh/capita, 2005)	480,0	8.365,0
co2/population (t CO2/capita 2005)	1,1	11,0
co2/GDP (kg CO2/2000 US\$; 2005)	1,8	0,5

- › energy efficiency of existing plants has room for improvement
- › Renewables: substantial growth rates. Target: 10 GW in 2012
- › Emissions-baseline in India's energy sector ist favorable due to extensive use of coal

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Wie viele sind es aktuell?

jasperj; 25.09.2008

Challenges and opportunities in the indian power market.

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Many challenges remaining:

- › massive government intervention in electricity market, including regulated price
- › domestic suppliers incur substantial losses, even after Electricity Act of 2003
- › infrastructure problems: transport losses (about 25%); theft (about 15%)
- › foreign investors seem to be entering indian power market only rather slowly

Positive signs:

- › Energy administration wants to encourage merchant power plants; can sell power independently to final customers
- › Attractiveness for investors remains to be seen

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Participation of EnBW Trading GmbH in CDM Projects



EnBW's interests:

- › Partnership with a project owner in developing a project (goal: sign ERPA)
- › Long term commitment to a CDM project with a start early in the project cycle
- › Focus on projects related to EnBW core-activities
- › project size: approx. $20,000 < x < 150,000$ CERs/year
- › Small scale projects are also of interest

How we approach a CDM project:

- › First discussions about a CDM project opportunity on basis of PDD
- › Sign non-disclosure agreement (NDA), first non-binding offer
- › Exchange information such as feasibility study, financial, contractual, etc.
- › Term-sheet negotiations
- › Sign term-sheet
- › Phase of exclusivity (own due diligence) followed by signing an ERPA

Participation of EnBW Trading GmbH in CDM Projects – Project Types



- › Focus on energy efficiency, fuel switch, cogeneration, renewable power generation
- › Other sectoral scopes / methods accepted that are supported by external assessment
- › Sustainability according to the current requirements of the UNFCCC and Linking Directive of the EU
- › Project types of interest:
 - › Biogas
 - › Biomass energy
 - › Cement
 - › Energy distribution
 - › Energy efficiency
 - › Cogeneration
 - › Fossil Fuel Switch
 - › Hydro Power
 - › Solar Power
 - › Wind Power

Participation of EnBW Trading GmbH in CDM Projects



EnBW's strength as CER buyer:

- › Compliance buyer as power plant operator under the EU Emissions Trading Scheme (EU ETS)
- › Strong credit rating
- › Possibility to arrange flexible pricing models
- › Professional trading partner in commodities
- › In-depth technical expertise in electricity and heat generation – technology and knowledge transfer
- › Technical & financial support in CDM project development

Participation of EnBW Trading GmbH in CDM Projects



EnBW's expectations on a seller of CER's:

- › Reliable business partner
- › Technology of the CDM project is acceptable to EnBW
- › Project activity has been planned and documented under CDM (additionality)
- › EnBW intends to be:
 - › named as buyer of CER's in the PDD
 - › named and registered as focal point in "Modalities of Communication" at UN
 - › has the right to initiate monitoring at any time
 - › wants to be closely involved in the monitoring process

Thank You!

Contact:

Dr. habil. Jörg Jasper
+49 30 23455 254
j.jasper@enbw.com

or

Hans-Jürgen Mielisch
+49 172 7333127
h.mielisch@enbw.com



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