

An introduction to the CDM and the Carbon Markets

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Botswana?

Earth's most abundant greenhouse gases are:

1. water vapor
2. **carbon dioxide (CO₂)**
3. atmospheric methane
4. nitrous oxide
5. ozone
6. chlorofluorocarbons

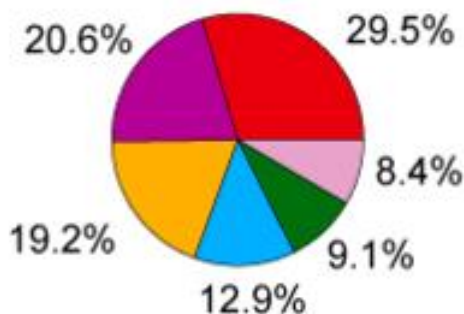
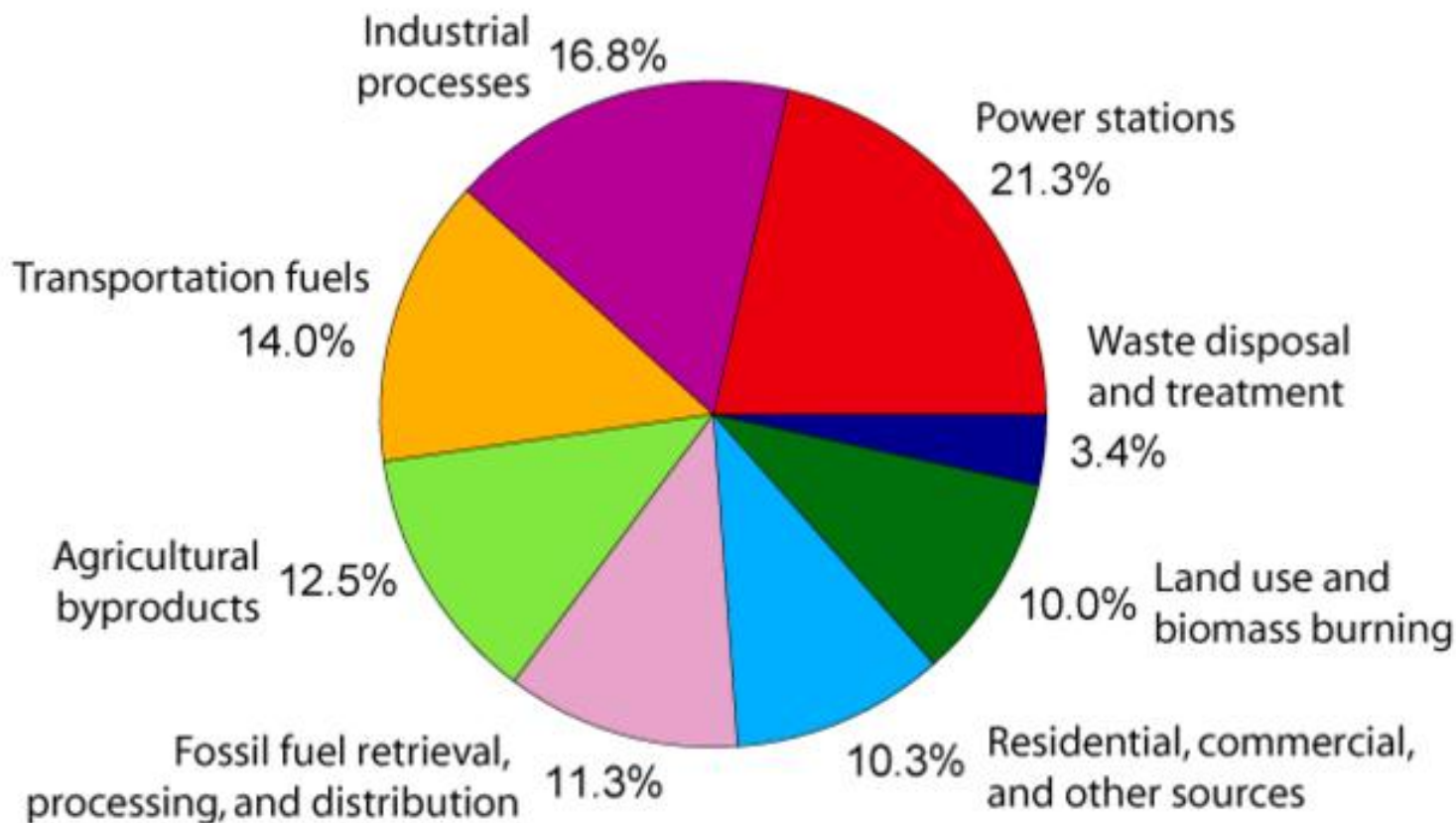


Mozambique

Annual Greenhouse Gas Emissions by Sector

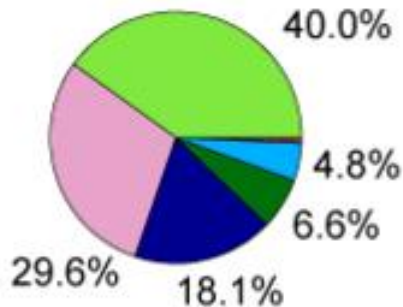


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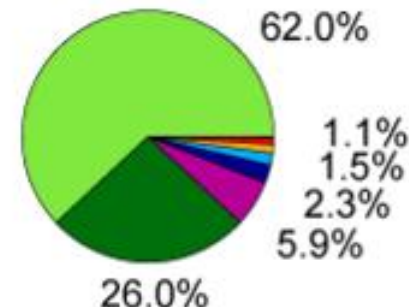
Carbon Dioxide

(72% of total)



Methane

(18% of total)



Nitrous Oxide

(9% of total)



Highest CO₂ Emitting Power Plants in the World



CARMA: Carbon Monitoring for Action, <http://carma.org>



[Home](#) > [Company overview](#)




1,587,809 Tons CO2
1,160,447 MWh energy
2,737 Intensity

BOTSWANA POWER CORP

Parent Country [Botswana](#)

Total Power Plants [2](#)

Red Alerts  [1 Power Plant](#)

~ 1.2 ton CO2/MWh
~ 1.2 kg CO2/kWh

Power Trends

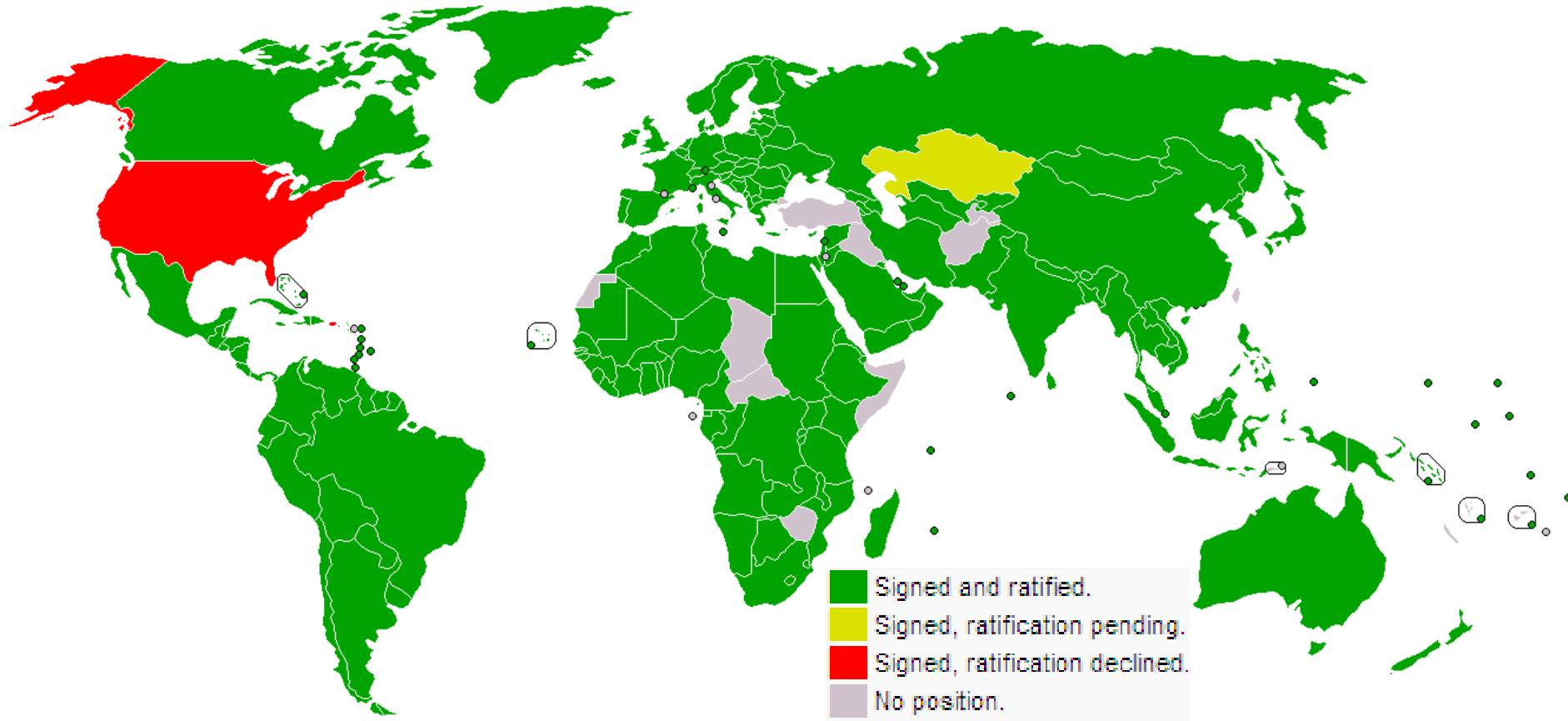
For more about the terms or data used here, search the [Glossary](#), learn [All About Icons](#), or check out our [FAQs](#). Information on plant specifics can be found [here](#). If you use the data, please see our [citation policy](#).

	Tons CO2	MWh Energy	Intensity	% Fossil	% Hydro	% Nuclear	% Other Renewable
2000:	1,420,508	1,027,323	2,765	N/A	N/A	N/A	N/A
Present:	1,587,809	1,160,447	2,737	N/A	N/A	N/A	N/A
Future:	8,316,757	6,781,657	2,453	N/A	N/A	N/A	N/A

CARMA: Carbon Monitoring for Action, <http://carma.org>



The Kyoto Protocol of UNFCCC



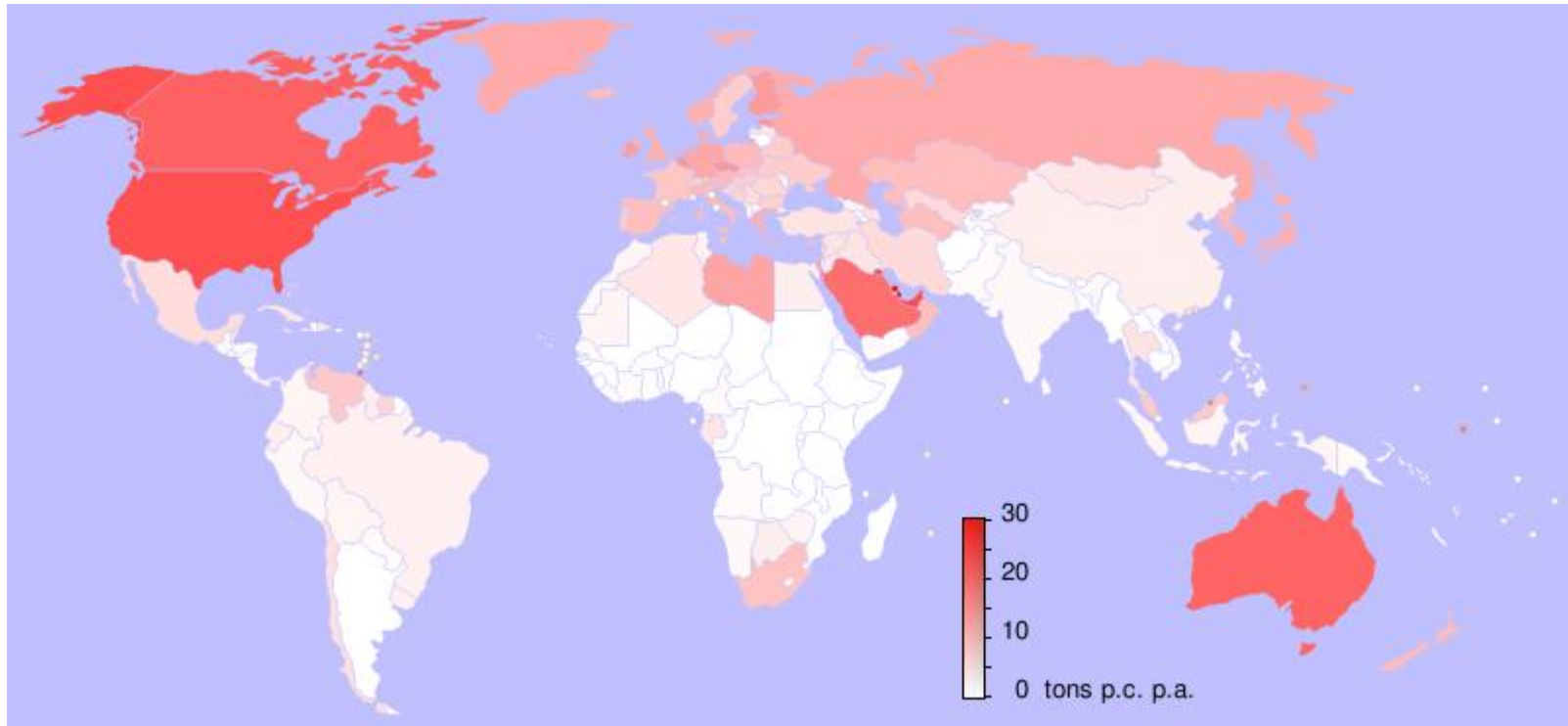
http://commons.wikimedia.org/wiki/Image:Kyoto_Protocol_participation_map_2005.png

- ↓ **5 % globally, 2008-2012, with 1990 as baseline**
- ↓ **8 % EU**
- ↓ **6 % Japan**



Kyoto shared burden

- The developed countries have committed on targets



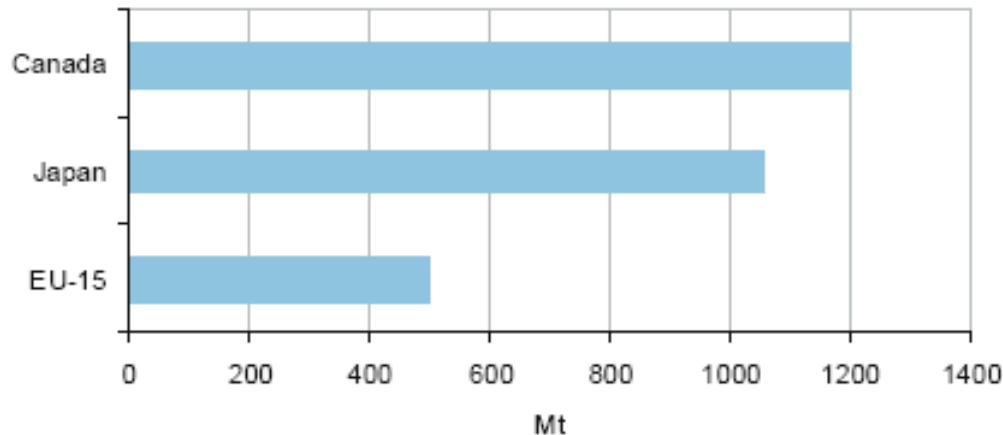
Carbon Dioxide Information Analysis Center (CDIAC), US Department of Energy, 2004

- The developing countries have no targets and have special funding opportunities for emission reduction projects (CDM)



Target difficulties - creates market

Figure 5: Gap to the Kyoto target: Japan, Canada, EU15 and others



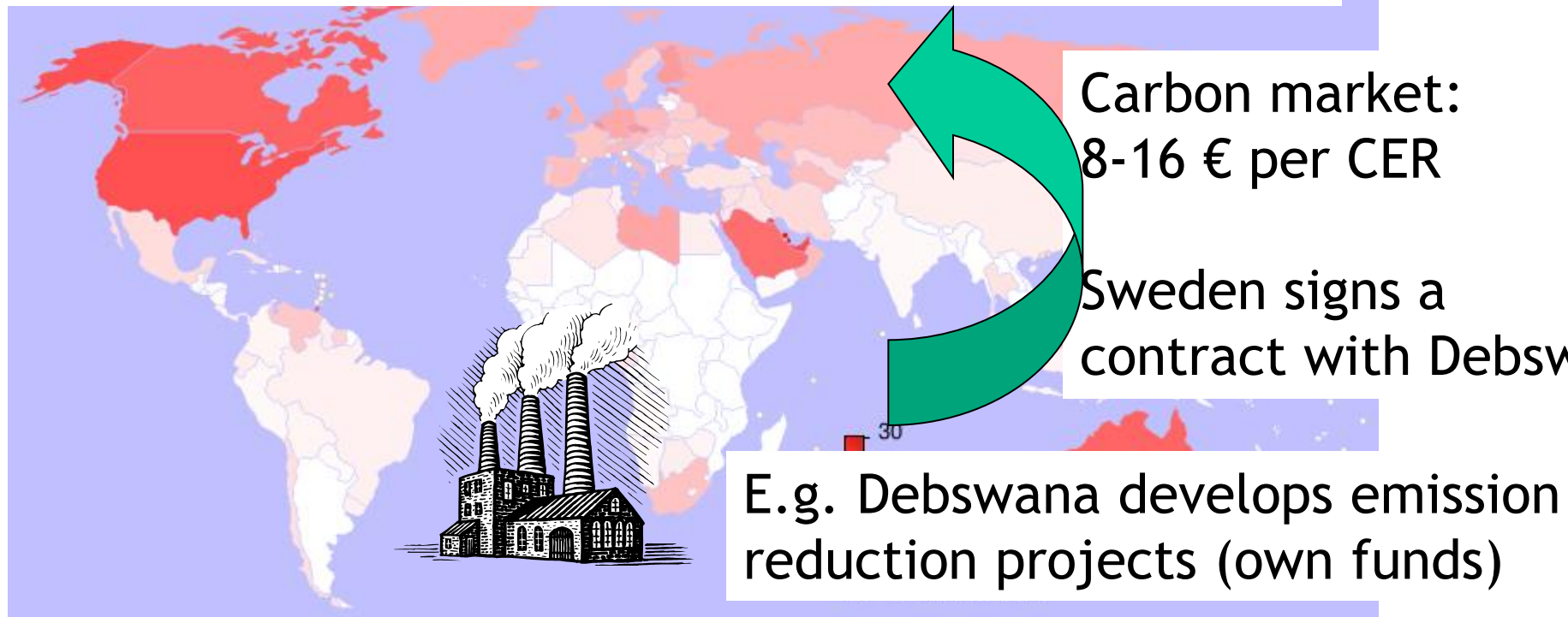
- Countries that can't reach their Kyoto targets can buy Emission Reductions (ER) made in developing countries (CDM = Clean Development Mechanism)
- With other words: Developing Countries can sell their ER to the World Carbon Markets (like any export commodity)

From: "Guidebook to financing CDM projects", UNEP Risö, 2007



To trade emission reductions

E.g. Sweden needs to buy Emission Reductions in a developing country to comply to their Kyoto targets



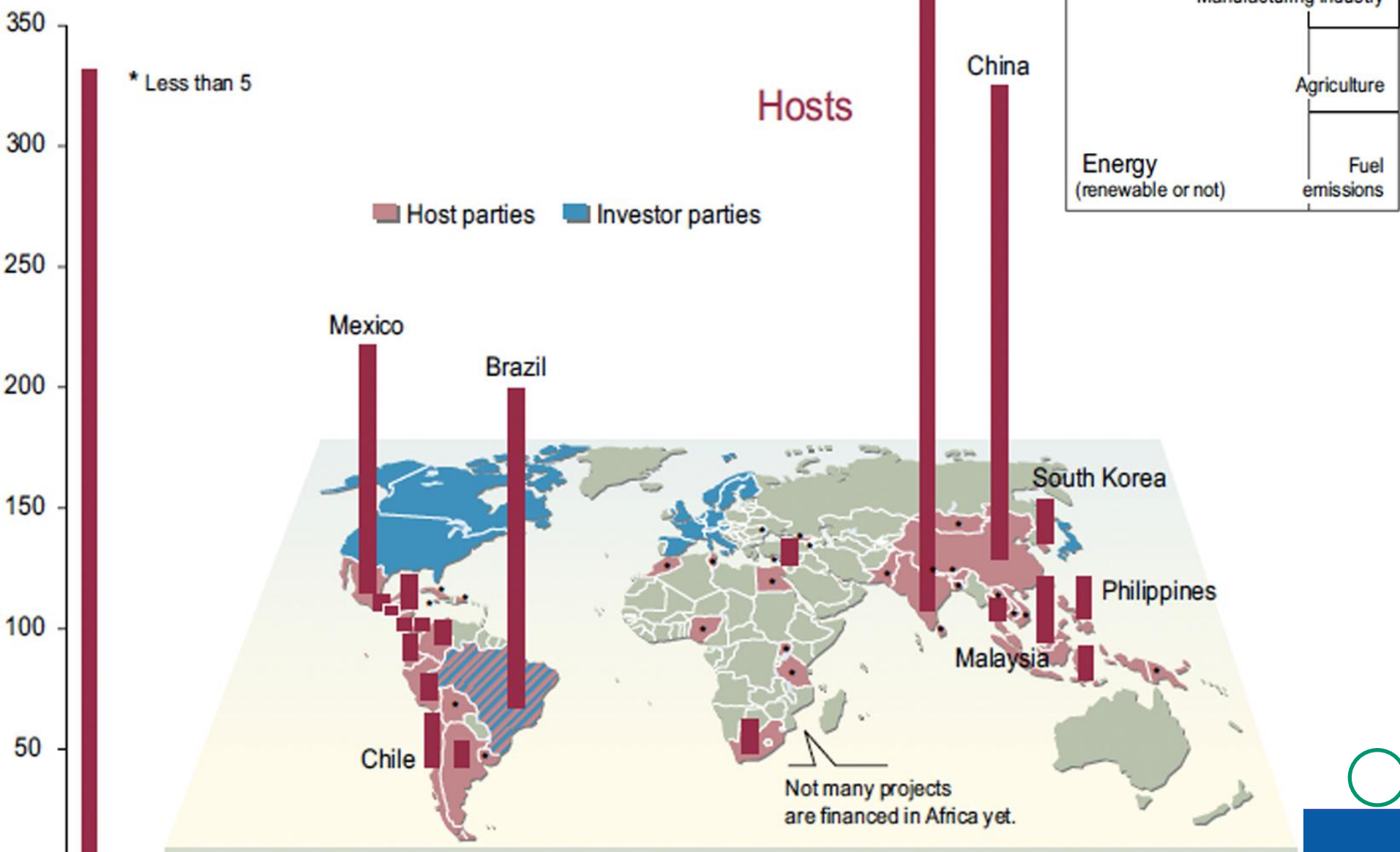
CER: Certified Emission Reduction (1 ton CO₂ eq) within CDM

CER sales becomes an additional income stream for Debswana

Registered projects implemented under Kyoto's "Clean Development Mechanism"

Source: United Nations Framework Convention on Climate Change, April 2008.

Number of projects by host parties





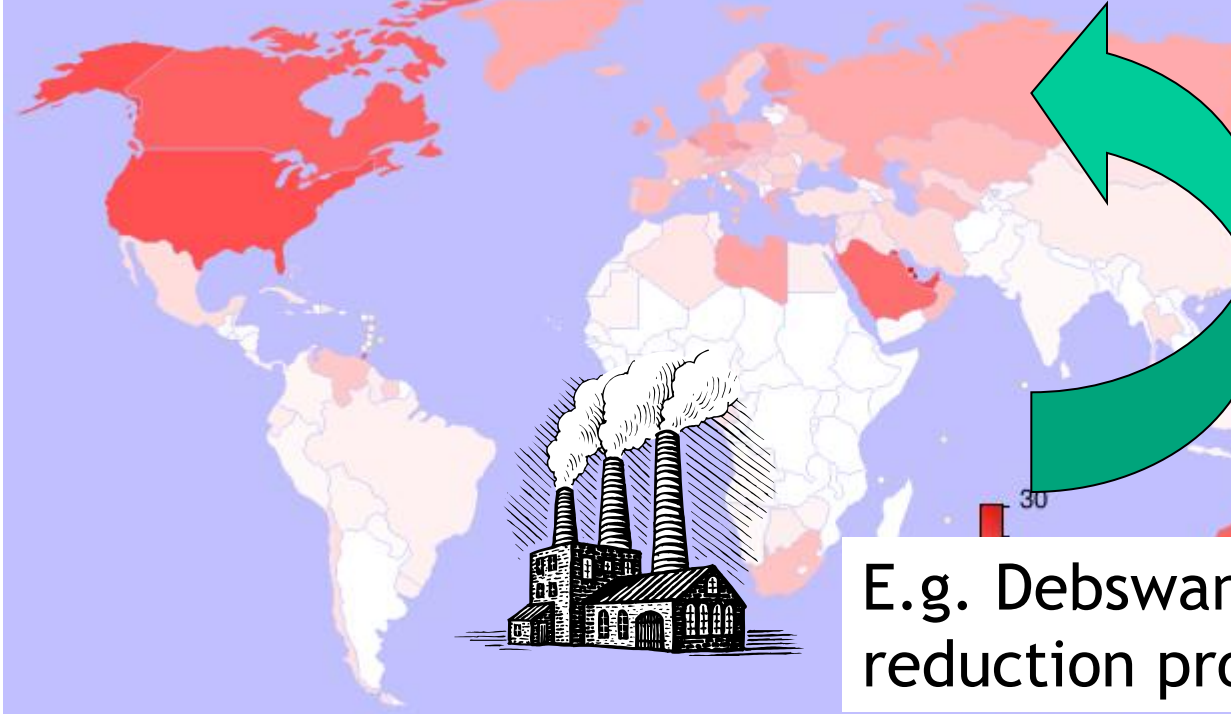
Two main markets

- The market for CERs
 - Certified Emission Reduction
 - Within the CDM, regulated by UN / Kyoto
 - Full fill compliance within Kyoto or allowances markets like eu
- The market for VERs
 - Verified Emission Reduction
 - or Voluntary Emission Reduction
 - No regulation - a free market
 - But there are standards and labels
 - Can't be purchased to full fill Kyoto compliance, only e.g. Corporate Social Responsibility targets



Companies have their own targets

E.g. **Volvo** could need to buy ERs in a developing country to comply to their Corporate Responsibility targets



Carbon market:
10-16 € per CER
01-15 € per VER

Volvo signs a contract with Debswana

E.g. Debswana develops emission reduction projects (own funds)

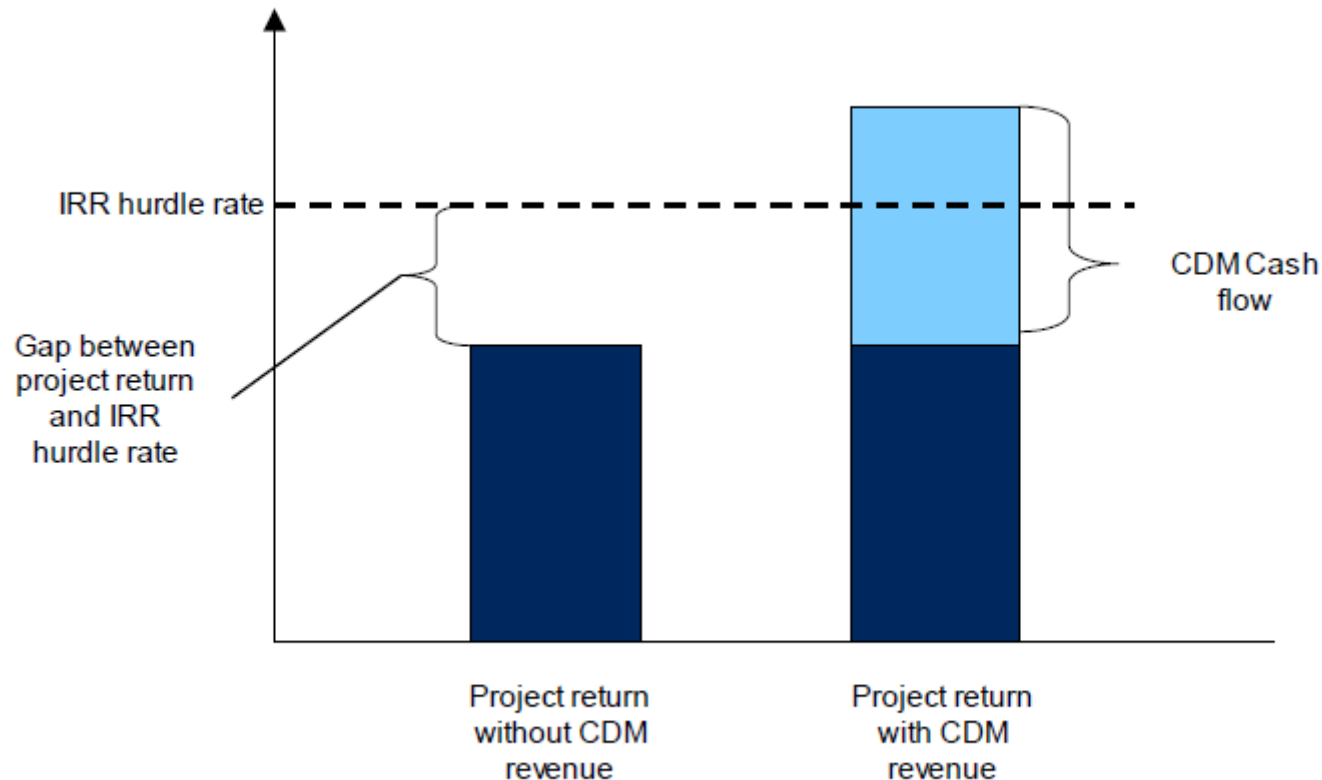
CER: Certified Emission Reduction (1 ton CO₂ eq) within CDM

VER: Verified Emission Reduction

CER/VER sales becomes an additional income stream for Debswana

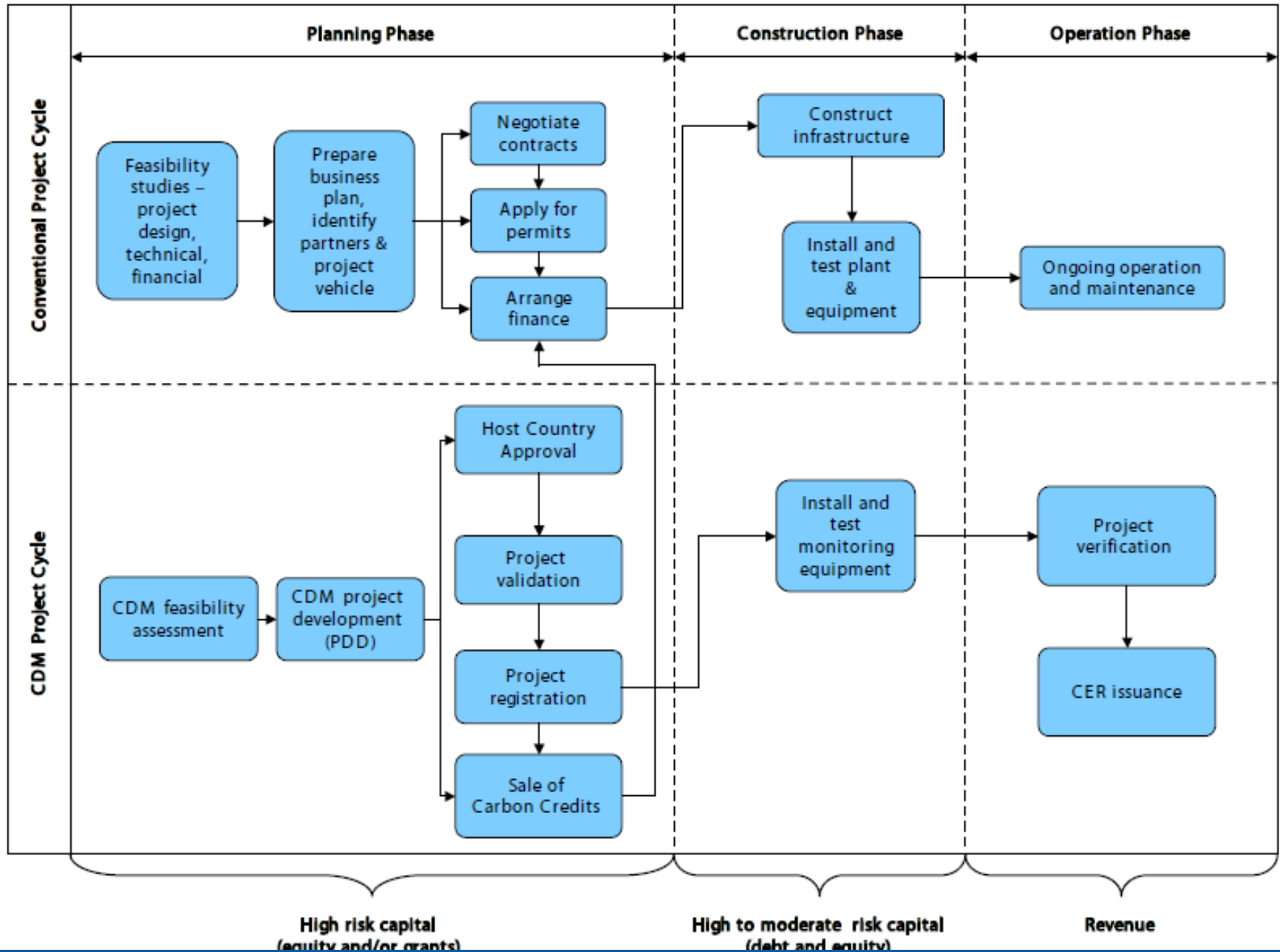


CDM is additional funding



From: "Guidebook to financing CDM projects", UNEP Risö, 2007

Figure 17: CDM project cycle compared with conventional project cycle





Thank you!

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