



CO-BENEFITS “A DMRC PERSPECTIVE”

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SUSTAINABLE LOW CARBON DEVELOPMENT IN ASIA: IGES-TERI

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CDM PROJECTS

Issues

- Do not necessarily reflect national needs on development
- Do not improve environment
- Do not contribute to Sustainable Development

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CDM PROJECTS

Issues

- **CDM has little to do with sustainable Development??**
- **Attracting money is higher priority**
- **What will happen if projects with little or no SD value continue to be promoted under CDM**

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CDM PROJECTS

Issues

- **Approval obtained by DNA on sustainability**
- **Some project may have more, some less of co-benefits. But all contribute to SD**
- **Projects with high co-benefits are economically unattractive even with CDM revenue**

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CO-BENEFITS

These establish non climate change benefits of climate mitigation policies

- **These vary widely**
 - **Direct vs Indirect co-benefits**
 - **Impact: Company, Local, Regional, National**
 - **Beneficiary: Project proponent, Community, Government**

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CO-BENEFITS

- **It makes sense to address needs of developed and developing countries simultaneously**
- **This project based approach will help enhance mitigation actions in developing countries**
- **Climate change will be addressed together with local environmental issues**

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DELHI METRO - BENEFITS

Sustainable Development

- **Environmental Improvement**
(less air pollutant emission – PM, SO₂, NO_x)

- **Social Impact**
(less time, positive health impact, accidents avoided etc.)

- **Economic Performance**
(better EIRR, positive image etc.)

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DELHI METRO - BENEFITS

S. No.	Parameter	2007	2009
1.	Vehicles Off The Road (Nos.)	16895	57953
2.	Annual Fuel Cost Saving (Rs. Crores)	114	200
3.	Saved Annual Vehicle Emission (tones)	30000	107500
4.	Saved Annual Vehicle Emission Saving Cost (Rs. Crores)	20	41
5.	Saved Vehicle (O&M) cost (Rs. Crores)	93	276

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DELHI METRO - BENEFITS

S. No.	Parameter	2007	2009
6.	All Accident Saved	196	255
7.	Fatal Accident Saved	21	51
8.	Saving in Time (minutes per trip)	33	28
9.	Annual Time cost saved (Rs. Crores)	310	947

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DELHI METRO - BENEFITS

Total Cost of All Benefits (Cost without discount)	2007*	2008	2009	2010	2011
	2072.92	3692.74	5503.83	7689.42	10287.39

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DMRC'S CDM PROJECT



**TITLE: “ Emission Reduction By Low GHG
Emitting Vehicles”**

UNFCCC Reference: AMS IIIC

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DMRC'S CDM PROJECT



- **Date of Registration 29th December 2007**
- **1st Railway Project**
- **Only the 2nd Transportation Project in the World**

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DMRC'S CDM PROJECT

Regenerative Braking Technology

- This technology regenerates electrical energy during braking (Decelarating) of Rolling Stock
- Conventional system ke is dissipated as heat
- Reg energy used by other trains in the line

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EMISSION REDUCTION

Years	Annual Estimation of emission reduction (in tonnes of CO2e)
2007-2008	37,007
2008-2009	39,698
2009-2010	39,698
2010-2011	39,698
2011-2012	39,698
2012-2013	39,698
2013-2014	39,698
2014-2015	39,698
2015-2016	39,698
2016-2017	39,698
Total estimated Reductions (tonnes of CO2e)	394285

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DMRC'S CDM PROJECT



Modal Shift
Name: "Metro Delhi, India"

**(ACM 016: Baseline Methodology for Mass
Rapid Transit Project)**

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DMRC'S CDM PROJECT



Years	Annual estimation of emission reduction in tCO _{2eq}
2010 (9 months)	359,121
2011	514,812
2012	536,447
2013	558,948
2014	582,347
2015	606,676
2016	631,970
2017 (3 months)	164,970
Total estimated reduction 1 crediting period (tones of CO_{2eq})	3,955,291
Total number of crediting years (1 st crediting period)	7
Annual average over the crediting period of estimated reduction (tCO_{2eq})	565,042

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THANK YOU

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