

# Tourism Circuit Development in Karnataka Jog Falls & Agumbe



**Project Development Advisor for the Development of Tourism Infrastructure facilities including Hotels, Restaurants & Civic amenities at Destinations along the Tourism Circuits on PPP.**

# Advertisement for REQUEST FOR PROPOSAL

**Newspaper Advertisement :**  
**Economic Times & Vijaya Karnataka**  
**Dated 31/05/2010**



# Jog Falls & Agumbe

- PPP Structure
  - Design-Finance-Build-Operate-Transfer (DFBOT)
  - Concession Period – 30 Years
- Investment Details
  - Estimated Project Costs:
    - Jog Falls: Rs. 16 Crores
    - Agumbe : Rs. 0.50 Crores
  - IRR : 20% +

# Jog Falls & Agumbe

## ▶ Tender Process

- Process- Single Stage (3- Envelope System)
- Last date for Bid Submission: 30/08/2010

## ▶ Project Details Available at

- Website: [www.ksiidc.com](http://www.ksiidc.com), [www.iidcindia.co.in](http://www.iidcindia.co.in), [www.ilfsindia.com](http://www.ilfsindia.com)

## ▶ Contact Details

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## Sustainable Action

### Energy

- Harness renewable sources - Mini-Hydel, Wind, Solar, Bio-methanation, Waste to Energy, Grid Buildings
- Retro-fitting thermal plants with solar heaters
- R&M of existing hydro units
- Allocation of waste land for solar thermal power plants
- Bio-ethanol (sugarcane, corn, cellulose plants)
- Bio-diesel (Jetropa, Pongamia, Mahua, Neem)
- Solar Photovoltaics
- Agriculture Pump metering / fitting solar panels

### Industries Sector

- Energy-intensive industries - Energy Audit
- Fast Track energy conservation and substitution measures
- Solid Waste Management

### Transportation

- Change over from private transportation to public transport
- Mass Rapid Transport Systems - Metro, Mono Rail, BRT

# Sustainable Infrastructure Action Plan

- Support Required by the Government of Karnataka
- Know how, and the technical assistance required; and
  - Funding for Sustainable Infrastructure
- Assessment of Funds and Phasing
- Stage I: Sector Strategies and Master Plan

Sustainable Infrastructure Action Plan for Karnataka				
Phasing	SIAP Theme	SIAP Key Steps	Activity Description for Karnataka	Fund Requirement (USD Mn)
Stage I: Six Months				
	A. Addressing the Access Gap through Core Sector Strategies	Sector Strategy	1. Master Plan for Infrastructure Sectors- Transportation, Energy, Water, ICT etc 2. PPP Regulation	1.0
	B. Maximizing Effectiveness through cross sectoral themes	1. Climate Change 2. Public Private Partnership 3. Rural-Urban Integration	1. Institutional Strengthening Program for Harnessing Karnataka Specific Cross Sectoral Synergy- Climate Change, PPP and R-U Integration	2.0
			2. Capacity Building	1.0

# Sustainable Infrastructure Action Plan

- Support Required by the Government of Karnataka
  - Know how, and the technical assistance required; and
  - Funding for Sustainable Infrastructure
- Assessment of Funds and Phasing
- Stage II: Sustainability Program – 6 Months – USD 22 Mn

Stage II: Six Months				
	C. Sustainability Program	1.Environment 2. Social 3. Governance 4.Viability	1. Funding for grading of projects against Environment, Social and Governance factors and Climate Change	0.5
			2. Capacity Building within Gov Stake Holders	1.5
			3. Awareness Building among Infrastructure users	2.5
			4. Create Infrastructure Index and undertake survey of users of these green infrastructure	0.5
			5. Setting up of Regulatory Structures	5.0
			6. Project Level Monitoring through a Robust MIS	5.0
			7. Supporting Viability funding	See below

*Contd.....*

# Sustainable Infrastructure Action Plan

- Stage – II continued

Stage II: Six Months (contd)				
	D. Leverage finance	1. Private Finance 2. Managing Risks for Public Finance 3. Mobilizing Aid Resources 4. Harmonizing Aid Policies through Partnerships	1. Development of program for financing projects based on their emphasis on key factors as Climate Change, Environmental, Social and Governance etc.	1.0
			2. Funding for grading of projects based on complex parameters	5.0
			3. Capacity Building	1.0
Stage III: After 12 Months				
	E. Creation of Fund and Project Funding		1. Creation of 'Sustainable Fund' for Project Grant/ Finance (Refer Table in Para 5.3 'Leveraging Finance')	8586.34
			<b>Total (USD Mn)</b>	<b>8612.34</b>

- Stage III: Creation of Fund and Project Funding



# Way forward

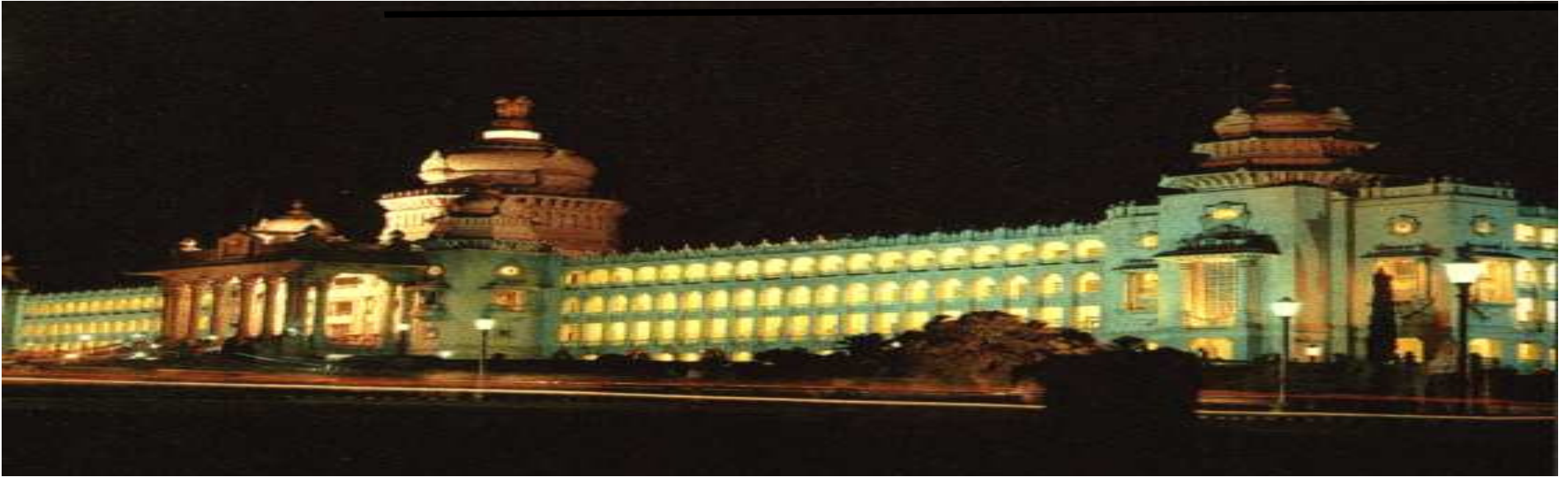
- **Phase I: 0-6 Months**
  - Addressing the Access Gap through Core Sector Strategies and Maximizing Effectiveness through cross sectoral themes
  - Master Plan for Infrastructure Sectors- Transportation, Energy, Water, ICT etc
  - Institutional Strengthening Program for Harnessing Karnataka Specific Cross Sectoral Synergy- Climate Change, PPP and R-U Integration
  - Capacity Building
- **Phase II: Rolling out Infrastructure Sustainability Plan- 6-12 Months**
  - Funding for grading of projects against Environment, Social and Governance factors and Climate Change
  - Capacity Building within Gov Stake Holders
  - Awareness Building among Infrastructure users
  - Create Infrastructure Index and undertake survey of users of these green infrastructure
  - Setting up of Regulatory Structures
  - Project Level Monitoring through a Robust MIS
  - Supporting Viability funding

# Way forward

- **Phase III: Project Implementation -After 12 Months**
  - **Development of program for financing projects based on their emphasis on key factors as Climate Change, Environmental, Social and Governance etc.**
  - **Funding for grading of projects based on complex parameters**
  - **Capacity Building**
  - **Creation of 'Sustainable Fund' for Project Grant/ Finance to the tune of 20% on projects meeting Sustainability Criteria.**

# Conclusion

- **Sustainable Infrastructure Development to follow triple- bottom concept- envisaged in Vision 2020 document (Oct 2008) of GoK**
- **Access, greater reliability and equitable distribution of Sustainable Infrastructure distinguishes the 'haves' from the 'have-nots' and paves way for human development, thus reducing the disparity among social classes**
- **GoK would endeavor to implement sustainable infrastructure and would actively seek the support of Multilateral Funding agencies in financial assistance and capacity building services**
- **GoK to request agencies like TERI to formulate a framework for implementation**
- **Mainstream sustainability**



# NAMASKARAGALU

Infrastructure Development Department  
Govt. of Karnataka

12/3/2010

*Happiness be unto all*<sup>112</sup>

# Why invest in Karnataka?

12/3/2010



## TOTAL RAIL PROJECTS IN KARNATAKA as on 01.04.2009

PLANHEAD	TOTAL Sanction as from 01.04.09	Target for 2009-10	Targeted section/ Remarks
New lines	1491 km	65km	▶ Kottur-Harihar
Gauge Conversions	187km	-	▶ -
Doublings	211 km	64km	▶ In patches

## COST SHARING PROJECTS WITH GOVERNMENT OF KARNATAKA.

SI No.	Project	Cost sharing	Remarks
1.	Sholapur - Gadag gauge conversion	1/2 : 1/2	Project completed and commissioned. Out of GoK share of Rs. 172.53 Cr, GoK has deposited Rs. 157.36 cr and <b>balance Rs. 15.17 cr is due.</b>
2.	Shimoga - Talguppa gauge conversion	1/2 : 1/2	In progress. Shimoga-Anandapuram (57 km) will be completed by 28-02-2010 and from Anandapuram-Talguppa (40 km) by 30.06.2010. GoK has paid Rs.76.50cr against Rs.114 cr their share and <b>balance due is Rs. 37.50 cr in 2009-10.</b>
3.	Kottur - Harihar new line	1/3 : 2/3	In progress. Will be completed for goods trains by 31.03-2010 and passenger trains by 31.07.10. GOK has paid Rs. 154.00 cr. Against Rs.201.39 cr and <b>balance due is Rs. 47.39 cr required from GoK for completing the project in 2009-10.</b>
4.	Bangalore - Kengeri - Ramanagaram doubling	1/3 : 2/3	Project completed. Electrification in progress. <b>Another Rs.20.89 cr is required from GoK for electrification, etc.</b>
5.	Ramanagaram - Mysore doubling	1/3 : 2/3	In progress at major bridges and in 3 block sections. GOK's share is Rs.324.67 cr. Rs. 48.15 cr has been paid by GoK so far. <b>Balance required is Rs. 267.52 cr. Planned for completion in 3 years.</b>
6.	Munirabad - Raichur new line	1/2 : 1/2	Project transferred from S.C.Rly in 2008-09 & commenced in Ginigera-Jabalguda section. GoK has provided Rs. 15.00 cr in 2008-09 against their share of Rs.257.75 cr. Tenders finalised for bridges upto Jabalguda.Tenders for bridges and earthwork beyond Jabalgudda could not be called as land is not available. <b>Balance required from GOK is Rs. 242.75 cr. Planned for completion in 5 years.</b>

**Note: In 2009-10, a total of Rs. 120.95 crore is due from GOK for completed projects and another Rs.100 cr for Bangalore- Mysore & Munirabad-Raichur apart from Rs.25 cr for ROBs (Total Rs.245.95 cr in 2009-10). So far received is NIL.**

# Present Power Situation in State

- ❑ Severe Power Shortage with demand - supply Gap of 22% ;
- ❑ As per 17<sup>th</sup> EPS peak demand is 7877 MW;
- ❑ Availability is about 6100MW;
- ❑ Average annual growth of 8-10%;
- ❑ Daily energy generation is 120MU;
- ❑ Daily energy demand is 150 MU (Restricted);
- ❑ Daily energy shortage is about 30MU;
- ❑ The State is constrained to impose load shedding.
- ❑ State Government has initiated all necessary action for Short term load management initiates to distribute power among urban and rural consumers.
- ❑ Crisis Management: 1000MW of high cost power being purchased daily from PTC/NTPCVVNL etc



# New Projects

- ❑ Long term action plan initiated for capacity addition.
- ❑ Major projects Established by 2014.
- ✓ 4000 MW UMPP at Kudgi in Bijapur dist through NTPC
- ✓ 1600 MW Coal based power project at Yermarus by KPCL JV with BHEL
- ✓ 800 MW Coal based power project at Yedlapura by KPCL JV with BHEL.
- ✓ 1600 MW pit head coal based power project at Godhana by KPCL & Govt of Chhattisgarh.
- ✓ Bellary, BTPS 2<sup>nd</sup> and 3<sup>rd</sup> unit by KPCL.
- ✓ Kaiga Nuclear power project Expansion of 2X700 MW

## New Projects (Contd)

- ✓ 400 MW Hydro power station at Gundia by KPCL.
- ✓ 1400 MW Gas based power plant at Bidadi by KPCL.
- ✓ 4000 MW capacity Addition through Renewable Energy sources; Renewable Energy Policy' announced to encourage Green energy.
- ❑ Establishing power projects through competitive bidding route private participation.
- ✓ 700MW Gas based power plants each at Belgaum, Gadag, Davanagere by PCKL
- ✓ 1320 MW Coal based power plants each at Gulbarga and Ghataprabha by PCKL.

# Fuel & Ecology Constraints

- ❑ State is devoid of fossil fuel resource such as Coal, Lignite or Natural gas.
- ❑ Hydro generation already saturated
- ❑ Eco-sensitivity of Western Ghats prevents coal based Coastal power plants, unlike AP & TN coast line.
- ❑ Shivana Samudra down-stream project on Cauvery being prevented.



# Infrastructure Development in Karnataka - Needs a Sustainable Paradigm Shift

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22 Oct 2010



# ***Namaskargalu***

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# Installed Capacity of Karnataka

Owners	Mode wise break-up													Total
	Thermal								Nuclear	Hydro (Renewable)		Res**		
	Coal		Gas		Diesel		Total Thermal			MW	(%)	MW	(%)	
	MW	(%)	MW	(%)	MW	(%)	MW	(%)	MW					
State	1970	21.08	0	-	127.92	1.37	2097.92	22.45	0	3518.2	37.64	452.4	4.84	6068.52
Private	260	2.78	220	2.35	106.5	1.14	586.5	6.27	0	0	-	1428.1	15.28	2014.6
Central	1072.67	11.48	0	-	0	-	1072.67	11.48	190.9	0	-	0	0	1263.57
Total	3302.67	35.34	220	2.35	234.42	2.51	3757.09	40.2	190.9	3518.2	37.64	1880.5	20.12	9346.69

# Year wise Renewable Energy (RE) Target

RE Source	Target MW	Year wise proposed capacity addition				
		2009-10	2010-11	2011-12	2012-13	2013-14
Wind Power	2769	530	580	530	530	599
Mini and Small Hydro	500	100	100	100	100	100
Cogen. In Sugar Industry	281	56	56	56	56	57
Biomass/Bio-gas	500	100	100	100	100	100
Waste to Energy	50	10	10	10	10	10
Solar PV and Thermal	100	20	20	20	20	20
<b>Total</b>	<b>4200</b>	<b>816</b>	<b>866</b>	<b>816</b>	<b>816</b>	<b>886</b>

# Progress report of village electrification as on 31-05-2009

Total Inhabited village (2001 census)	Villages electrified		Un-electrified villages
	Numbers	(%)	
27481	27458	99.9	23



# Status of Metering of IP Sets and BJ/KJ on March, 2008

Sl.No.		IP installations			BJ/KJ installations		
		Total	Metered	Metered (%)	Total	Metered	Metered (%)
1	BESCOM	552221	46392	8.40	610409	346460	56.76
2	GESCOM	241846	31968	13.22	439162	257577	58.65
3	HESCOM	492731	147283	29.89	595659	439079	73.71
4	MESCOM	183601	168392	91.72	131448	100354	76.35
5	CESC	185977	38896	20.91	300278	294912	98.21
6	HUKKERI	17683	5676	32.10	-	-	-
	<b>TOTAL</b>	<b>1674059</b>	<b>438607</b>	<b>26.20</b>	<b>2076956</b>	<b>1438382</b>	<b>69.25</b>

# Carbon Emission through Conventional Generation in the state

Emission (Million t-CO <sub>2</sub> )				
	2006-07	2008-09	2009-10*	2010-11*
State Coal	10.92	14.63	16.49	20.21
State Diesel	0.54	0.54	0.54	0.54
Private Coal	1.18	1.18	3.92	8.54
Private Gas	0.78	0.78	0.78	0.78
Private Diesel	0.50	0.50	0.50	0.5
<b>Total</b>	<b>13.92</b>	<b>17.63</b>	<b>22.23</b>	<b>30.57</b>

\* Calculated on the basis of installed capacity expected in the state in coming years and current grid emission of various technologies

# The Industries with large no. of factories in Karnataka (2004-05) (1/2)

Industries with no. of factories registered (nos)			
50-300	300-500	500-1000	1000+
(21) Manufacture of Paper & Paper products (245) (BM) & Water recycling	(17) Manufacture of Cotton Textiles (334) (COGEN)	(18) Manufacture of wool, Silk, Synthetic Fibre, Textiles (884) (Process heat / steam)	(15) Manufacture of Food products & beverages (1978) (BM)
(32) Manufacture Radio, Television & Communication equipment & apparatus (286)	(25) Manufacture Rubber, Plastic, Petroleum & Coal products (444) (Solid waste recycling)	(24) Manufacture Chemicals & Chemical products (except products of petroleum & coal) (583) (Process heat / steam)	
(20) Manufacture of Wood & wood products, Furnitures & Fixtures (170) (Solid Waste recycling)	(31) Manufacturing of Electrical, machinery & apparatus NEC (392)	(29) Manufacture of machinery, Machine tools & parts except electrical machinery (573)	(28) Manufacture of Metal products & parts except machinery & transport equipments (1209) (SWR)
(33) Manufacture of Medical precision & optical instruments, watches and clocks (134)	(50) Sale maintenance & Repairs of motor vehicles, motor cycles, retail sale of automotive (416)	(26) Manufacture of Non-metallc mineral products (572)	

# The Industries with large no. of factories in Karnataka (2004-05) (2/2)

Industries with no. of factories registered (nos)			
50-300	300-500	500-1000	1000+
(34) Manufacture of Motor vehicles, Trailers & Semi-trailers (121)	(14) Cotton ginning, Cleaning & baling (387) (EC)		
(36) Manufacture of Furniture, Manufacturing NEC (112)	(27) Basic metal & Alloy industries (331) (Heat recovery & conservation)		
(16) Manufacture of Beverages, Tobacco & Tobacco products (59) Solar air drying			
(19) Manufacture of Textile products (including wiring apparel other than footwear) (54)EC,SWR,Process heat / steam			
EC- Energy Conservation; BM - Bio Methanation ; SWR - Solid Waste Recycling Note : Prefix no in bracket shows the NIC number for Industry groups and numbers in braket after the industry name indicates number of factories under that particular industry (NIC group, 1998); in 2004-05. in the cell, the text in bold indicates the name of the clean energy technological solution that can be implemented into the category			

# Vehicular Growth in Karnataka since 1991 to 2008 (Lakhs Units)

Sl.No.	Year	Vehicles
1	1991	14.33
2	1992	15.83
3	1993	17.19
4	1994	18.76
5	1995	20.15
6	1996	22.5
7	1997	25.35
8	1998	28.05
9	1999	30.67

Sl.No.	Year	Vehicles
10	2000	33.52
11	2001	36.92
12	2002	39.96
13	2003	44.83
14	2004	48.75
15	2005	54.35
16	2006	62.2
17	2007	69.4
18	2008	75.19

Consumption (thousand tones) of major petroleum products by state (Public sector unit scale only) :  
Karnataka

Year	Nap thane	LPG	Petrol	SKO	ATF	HSD	LDO	FO	LSHS / HHS	Lubes / Greases	Bitumen	Others	Total
2001-02	371	415	482	525	91	2167	34	525	154	33		34	4831
2003-04	303	547	502	483	118	2372	47	493	87	35	195	22	5204
2004-05	262	629	506	472	148	2433	51	549	66	37	212	23	5388
2005-06	213	653	514	471	199	2388	41	517	25	36	282	30	5369

ATF : Aviation Turbine Fuel  
 SKO : Superior Kerosine Oil  
 HSD : High Speed Diesel  
 LDO : Light Deisel Oil  
 FO : Furnace Oil  
 LSHS / HHS : Low Sulpher Heavy Stock / Hot Heavy Stock

## Season-Wise Agricultural Crops recommended for different Agro-climatic Zones of Karnataka (1/2)

Zone No.	Name	Rainfall range (mm)	District (No. of Taluks)	Kharif	Rabi
1	North Eastern Transaction Zone	830-919	Bidar (5) & Gulbarga (2)	Jowar, Blackgram, Greengram, Tur, Bajra, Sunflower, Sesamum, Niger, Paddy, M.Milletts, Sugarcane	Bengalgram, Jowar, Wheat, Sunflower, Safflower, Linseed
2	North Eastern Dry Zone	633-807	Gulbarga (8) & Raichur(3)	Tur, Sunflower, Groundnut, Bajra, Greengram, Blackgram, sesemum, Jowar,Cotton,Sugarcane, Paddy	Bengalgram, Jowar, Wheat, Sunflower, Safflower, Linseed
3	Northern Dry Zone	465-786	Koppal (4), Gadag (4), Dharwad (1), Belgaum (5), Bijapur (5), Bagalkot (6), Bellary (7), Davangere (1), Raichur (2)	Sunflower, Groundnut, Bajra, Greengram, Horsegram, sesamum, Jowar,Paddy, Cowpea, M.Milletts, Cotton, Tur, Castor, Niger, Maize	Bengalgram, Jowar, Wheat, Sunflower, Safflower, Linseed, Cotton
4	Central Dry Zone	456-717	Chitradurga (6), Davangere (3), Tumkur (6), Chikmangalore (1), Hassan (1)	Groundnut, Raagi, Maize, Jowar, Sunflower, Tur, Avare, Paddy, Sesamum, Horsegram, Cotton	Jowar, Sunflower, Horsegram

## Season-Wise Agricultural Crops recommended for different Agro-climatic Zones of Karnataka (2/2)

Zone No.	Name	Rainfall range (mm)	District (No. of Taluks)	Kharif	Rabi
5	Eastern Dry Zone	679-889	Bangalore Rural (8), Bangalore Urban (3), Kolar (11), Tumkur (2)	Raagi, Paddy, Avare, Maize, Groundnut, Castro, Niger, Horsegram	Horsegram
6	Southern Dry Zone	671-889	Mysore (4), Chamarajanagara (4), Mandya (7), Tumkur (2), Hassan (2)	Paddy, Raagi, Jowar, Maize, Tur, Horsegram, Cowpea, Avare, Groundnut, Sesamum, Sunflower, Castro, Niger, Cotton, Tobbaco, Sugarcane	Raagi, Maize, Horsegram, Cowpea
7	Southern Transcation Zone	612-1054	Hassan (4), Chikmangalore (1), Shimoga (3), Mysore (3), Davangere (2)	Paddy, Raagi, Jowar, Maize, Tur, Horsegram, Cowpea, Avare,Groundnut, Sesamum, Sunflower, Castro, Niger, Cotton, Tobbaco, Sugarcane	Raagi, Horsegram, Paddy, Sunflower, Bengalgram
8	Northern Transaction Zone	618-1303	Belgaum (4), Dharwad (3), Haveri (6), Gadag (1)	Groundnut, Jowar, Maize, Paddy, Cotton, Sugarcane, Tobbaco, Bajra, Tur, Sunflower, Soyabean, Greengram, Horsegram, Avare, M.Millets, Cowpea	Jowar, Wheat, Maize, Sunflower, Bengalgram, Horsegram, Linseed, Safflower



# Consumption of Fertilizers (Lakhs tones)

Year	N	P	K	Total
2000-01	7.32	3.84	2.33	13.49
2001-02	6.71	3.6	2.18	12.49
2002-03	6.01	3.04	1.95	11
2003-04	4.93	2.4	1.86	9.19
2004-05	6.61	3.64	2.73	12.98
2005-06	7.54	4.35	3.35	15.24
2006-07	7.56	4.39	2.91	14.86
2007-08	7.9	3.87	3.3	15.07

# Districts with semi critical stage of water extraction

District	Annual reaperishable ground water resources	Natural discharge during non monsoon season	Net ground water availability	Irrigation draft (A)	Domestic & Industrial use draft (B)	Total Draft (A+B)	Ground water availability for future	Stage of ground water development (%)
Hassan	54421	2238	52183	31152	5709	36861	15906	71
Haveri	42515	1845	40670	26247	2870	29117	13182	72
Davangere	61472	1861	59610	42656	3176	45832	200075	77

# Watershed Development Program (Lakhs hectares)

Year	Cumulative
<b>Upto 2002</b>	<b>27</b>
<b>2002-03</b>	<b>29.1</b>
<b>2003-04</b>	<b>32.22</b>
<b>2004-05</b>	<b>35.42</b>
<b>2005-06</b>	<b>39.2</b>
<b>2006-07</b>	<b>42.65</b>
<b>2007-08</b>	<b>44.75</b>

# Annual average Ambient Air Quality in 2004-05

Name of the Location / Station	Type of Area	Air Quality			
		RSPM (g/m <sup>3</sup> )	SO <sub>2</sub> (g/m <sup>3</sup> )	NO <sub>x</sub> (g/m <sup>3</sup> )	SPM (g/m <sup>3</sup> )
Over the terrace of Regional office building plot no. 97, AIA, Tumkur	Industrial Area	81.16	45	54	229.1
KSPCB office building	Industrial Area	33.26	3.59	15.76	72.09
Baikampadi Industrial Area Mangalore during	Industrial Area	83	9.98	9.11	309
Vivekanandaiah Petrol Bank, Chitradurga	Commercial Area	248.45	12.42	6.3	84.05
Regional office building, Chitradurga	Residential Area	-----	10.35	5.97	192.16
Regional office KSPCB, Davangere	Residential Area	46.75	8.2	6.12	44.52
PWD office building, Davangere	Other Area	286	16.22	11.4	296
Port director's office, Karwar	Rural & Other Area	176.63	3.17	5.87	-----
KSRTC bus stand building, Hassan	Urban & Mixed Area	91	5.7	24.6	234

# Waste in Karnataka

<b>Municipal Solid waste</b>				
As regards municipal waste, on average 40% to 50% of the total is municipal and is generated in the six municipal corporations of the Karnataka and more than 76% of the municipal waste is generated by the Residential & market areas				
<b>Municipal Solid waste generated per day in 6 cities corporation of Karnataka for 2002</b>				
<b>City Corporation</b>	<b>Population</b>	<b>Waste Generated (Ton / day )</b>	<b>Waste collected (Tons / day)</b>	<b>Per capita waste generated (gms / day)</b>
Bangalore	5,882,162	2500	1400	425
Mangalore	551,701	250	200	453
Hubli / Dharwad	801,442	250	200	311
Mysore	794,677	230	183	289
Belgaum	516,155	120	100	232
Gulbarga	452,944	120	100	262
<b>Total</b>	<b>8,999,081</b>	<b>3,470</b>	<b>2,183</b>	<b>1,972</b>

Comparison between BAU and Projected Scenario model of Road Transportation in Karnataka in terms of Carbon emission in both cases

	2010-11			2020-21			2030-31		
	BP Km	CO <sub>2</sub> Emission (1000 tons of carbon equivalent)		BP Km	CO <sub>2</sub> Emission (1000 tons of carbon equivalent)		BP Km	CO <sub>2</sub> Emission (1000 tons of carbon equivalent)	
		BAU	Scenario Projected		BAU	Scenario Projected		BAU	Scenario Projected
Private & Par transit	127.15	1277.87	751.69	200.77	2017.69	1186.88	358.64	3604.35	1629.45
Bus	172.03	720.8	940.17	271.62	1138.1	1484.48	289.9	1214.67	2038.03
<b>Total</b>	<b>299.18</b>	<b>1998.67</b>	<b>1691.86</b>	<b>472.39</b>	<b>3155.79</b>	<b>2671.36</b>	<b>648.54</b>	<b>4819.02</b>	<b>3667.48</b>

# Challenges - Governance

- **Social in-equity in infrastructure need to be addressed**
  - **Access and affordability**
- **A holistic approach for develop and O&M is needed**
  - **Eg: Logistics infrastructure across the state**
- **Infra development based on sector policies**
  - **Capacity in GoK agencies in limited**
  - **Need for integrated policies**
  - **Institutional Mechanism for coordination**
- **Multiple player involved in Urban Infra**
  - **Central, state, city, private sector**
- **New infra players required**
  - **Similar to ESCOs in Energy Market : Who can invest in sustainable components and can charge tariffs**

## Development Vision (1/2)

			Units	Level	
				Present	2020
<b>A.</b>	<b>Economic Sector</b>				
<b>1</b>	<b>Agriculture</b>				
		Irrigated Area	% on potential	49	>90%
			Lakhs Hectares	30	61
			Lakhs Hectares		45
		Watershed Area	Lakhs Hectares	44.75	
		Agricultural Labour	% of total	61	35
		Agricultural Growth	%	0.8	4
<b>2</b>	<b>Public Transport</b>	On total trips	%	45	73
	(a) Public Transport with renewable energy		%	0	100
<b>3</b>	<b>Forest</b>	Area covered	%	6.7	33
<b>4</b>	<b>Industry Growth</b>		%	7.9	9
	(a) Industrial Employment		%	15	22
<b>5</b>	<b>Road</b>				
		Average	Km / sq.Km	1.07	1.50
		NH + SH	Km	21486	40000
		≥ 2 lanes	Km	6466	66456
		All weather Roads	%	60	100
<b>6</b>	<b>Electricity</b>				
		Infrastructure Capacity	MW		18500
		T&D Loss	%	28	< 15
		Agriculture IP Set metering	%	29	> 90



## Development Vision (2/2)

			Units	Level	
				Present	2020
7	Railways	Rail Density	Km /1000 sq.Km	17	28
8	Output per workers (Agri : Service)		Ratio	8:8	4:9
9	Cold Storage Capacity		1000 MT	250	4800
<b>B. Social</b>					
	Literacy Rate	Literacy Rate	%	67	100
		Access to Skill Training	%		100
	Health	IMR (Infant Mortality Ratio)	No.	48	10
		MMR (Maternal Mortality Ratio)	No.	228	25
	Population Spread	Urban	Crores	2.08	2.8
<b>C. Others</b>					
		Rural Poverty	%	20.8	< 5
		Urban Poverty	%	32.8	0
		Access to water	LPCD	27	100
		Slum population	%	7.8	0
<b>D.</b>		SPM		> 160	40

## Ongoing Cost Sharing Railway Projects in Karnataka

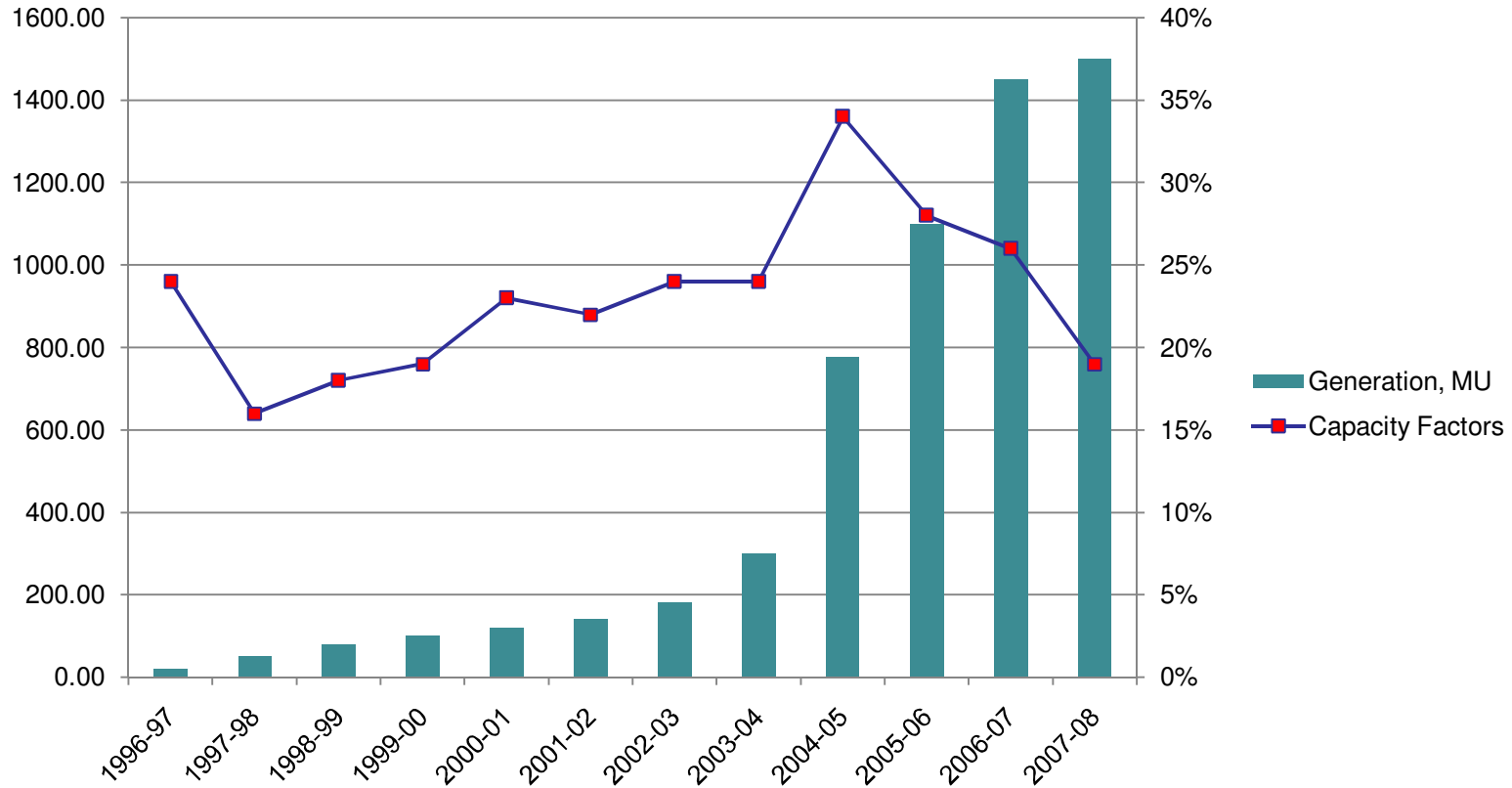
Sl.No.	Project Name	Length in KM	Project Cost (Rs. In crores)	Status
1	Solapur - Gadag (GC)	284	335.00	Completed
2	Shimoga - Talaguppa (GC)	97	225.00	Shimoga - Anandapuram GC Completed in 2009-10 Anandapuram - Talaguppa targeted for commissioning by March 2011
3	Ramanagaram - Mysore (DL)	93	487.00(ant)	Ramanagaram to Shettihalli and Mysore to Naganahalli targeted by March 2011 and balance by 2013
4	Kottur - Harihara (NL)	67	330.00	All works completed and section is ready for goods services. Passengers services will be introduced in 2011
5	Munirabad (Giniger) - Mehaboobnagar (NL)	170	1050.00	Works are in progress from (Giniger) Munirabad end
6	Bidar - Gulbarga (NL)	107	369.00	Work in Progress in Bidar District. In Gulbarga District land acquisition progress under finalisation.
<b>Total</b>		<b>818</b>	<b>2796.00</b>	

**GC**                      Guage Conversion  
**DL**                      Doubling  
**NL**                      New Line

## The States Potential in Renewable Energy

<b>Sector</b>	<b>Potential in MW</b>	<b>Allotted in MW, 2010</b>	<b>Commissioned in MW, 2010</b>
Wind	13236	9234	1511
Small Hydro	3000	2351	451
Cogeneration	1500	1078	648
Biomass	950	476	87
Solar	20000	129	6
<b>Total</b>	<b>38686</b>	<b>13268</b>	<b>2703</b>

# Year wise generation (MU) and capacity utilization factor (%) in Karnataka: 1996/97 to 2007/08



# Contents

- **Unsustainable Ecological Footprint**
- **Huge Social & Economic Challenges**
  - **Vision 2020 Sectoral Targets**
- **Lagging Infrastructure Development Program**
- **Policy Framework – Mainstreaming sustainability & Inclusiveness**
- **Sustainable Infrastructure Action Plan**



# Challenges

- **Climate Change**
- **Resource Crunch**
- **AIDS**
- **50% more natural resources than the earth can sustain**
- **By 2030 we will require TWO earths**

# Installed Capacity of Karnataka

Owners	Mode wise break-up													Total
	Thermal								Nuclear	Hydro (Renewable)		Res**		
	Coal		Gas		Diesel		Total Thermal			MW	(%)	MW	(%)	
	MW	(%)	MW	(%)	MW	(%)	MW	(%)						
State	1970	21.08	0	-	127.92	1.37	2097.92	22.45	0	3518.2	37.64	452.4	4.84	6068.52
Private	260	2.78	220	2.35	106.5	1.14	586.5	6.27	0	0	-	1428.1	15.28	2014.6
Central	1072.67	11.48	0	-	0	-	1072.67	11.48	190.9	0	-	0	0	1263.57
Total	3302.67	35.34	220	2.35	234.42	2.51	3757.09	40.2	190.9	3518.2	37.64	1880.5	20.12	9346.69



# Year wise Renewable Energy (RE) Target

RE Source	Target MW	Year wise proposed capacity addition				
		2009-10	2010-11	2011-12	2012-13	2013-14
Wind Power	2769	530	580	530	530	599
Mini and Small Hydro	500	100	100	100	100	100
Cogen. In Sugar Industry	281	56	56	56	56	57
Biomass/Bio-gas	500	100	100	100	100	100
Waste to Energy	50	10	10	10	10	10
Solar PV and Thermal	100	20	20	20	20	20
<b>Total</b>	<b>4200</b>	<b>816</b>	<b>866</b>	<b>816</b>	<b>816</b>	<b>886</b>

# Progress report of village electrification as on 31-05-2009

Total Inhabited village (2001 census)	Villages electrified		Un-electrified villages
	Numbers	(%)	
27481	27458	99.9	23