



GOVERNMENT OF KARNATAKA DEPARTMENT OF ENERGY

# KARNATAKA RENEWABLE ENERGY POLICY 2009 - 2014

To Harness Green, Clean Renewable Energy Sources for  
Environmental Benefits and Energy Security



PUBLISHED BY KREDL





# ಕರ್ನಾಟಕ ರಾಜ್ಯಪತ್ರ

ಅಧಿಕೃತವಾಗಿ ಪ್ರಕಟಿಸಲಾದುದು  
ವಿಶೇಷ ಪತ್ರಿಕೆ

ಭಾಗ - ೧

ಬೆಂಗಳೂರು, ಮಂಗಳವಾರ, ಫೆಬ್ರವರಿ ೯, ೨೦೧೦ (ಮಾಘ ೨೦, ಶಕ ವರ್ಷ ೧೯೩೧) ನಂ. ೧೫೫

## ENERGY SECRETARIAT

### PROCEEDINGS OF THE GOVERNMENT OF KARNATAKA

**Sub:** Karnataka Renewable Energy Policy 2009-14-reg.

#### PREAMBLE:

Building on its current strengths and a capacity of 24 Megawatts, Karnataka intends to establish a dynamic renewable sector with emphasis on different forms of generation-wind, mini hydro, bio mass, co generation and solar. There is need to have a clear policy framework to provide and sustain efforts in this direction.

The energy consumption in the State is anticipated to be around 64,000 MU per annum by 2015. At present, renewable energy sources contribute to about 4600 MU of energy per annum (11.5%) out of the total 40,000 MU available from various installed capacities. To achieve a 20% share, the renewable energy sources are required to contribute 12,800 MU by 2014. This necessitates a renewable energy capacity addition of 6600 MW by 2014. A clear -cut policy is, therefore, essential to regulate and ensure speedy development of renewable energy.

Till now, the State did not have clearly spelt out policy for development of Renewable Energy. Karnataka Renewable Energy development Limited (KREDL) is promoting RE projects through participation of the private sector in wind, mini hydro, bio mass, co generation respectively. Despite significant achievements, developers have complained of many impediments in the quick resolution of the projects. Assessed against our potential in Renewable Energy, the State can accomplish more substantial achievement to make it the number one Renewable Energy State in the Country. The Renewable Energy Policy at systematic and faster development of Renewable Energy sources to achieve a capacity of 6600 MW by 2014.

On its part, KREDL has attempted to promote Renewable Energy in the State in a number of ways. These include:

- a. Encouraging the private sector to identify and develop small capacity projects in wind, mini hydro, bio mass, co generation respectively.
- b. Create an information network for advancing RE understanding through communication, education and publicity.
- c. Promote emphasis on green energy, harmful effects of global warming and ozone layer depletion.
- d. Start demonstration projects to establish cost effectiveness, economic viability and the reliability of various technologies (eg. Wind Projects at Sogi and mavinhunda).
- e. Frequent interactions with developer to ensure capacity additions expeditiously.
- f. Promote greater awareness and compliance with energy conservation and energy efficiency issues.

The new Renewable Energy Policy attempts to stimulate addition to capacity generation by a minimum of 1000 MW each year. It has the following substantial objectives:

- a. Additional capacity of 42 MW by 2014.
- b. Emphasis on Energy Conservation and Energy Efficiency by a saving of 1500 MU per year (900 MW by 2014).

The policy proposed contains some key measures to address the constraints and ensure substantial capacity additions in the next 5 years:

- Renewable Energy Development is to be classified as an "Industry". Land is, therefore, to be made available to the developers by the Government through allotment by the Commerce and Industries Department Single Window System. This will obviate the extensive time delays currently taking place with the developers having to obtain permission for purchasing land from the Deputy Commissioner of the districts or other modes of purchase.
- A Green Energy cess at Rs. 0.05 per unit on commercial and industrial consumers to generate Rs. 55 crores annually. Out of Rs. 55 crores to be collected as cess, a part will be set aside for Energy Conservation Fund, part for Renewable Energy Project Financing and strengthening the evacuation system and the remainder for an integrated information and communication programme in the State. (Provision for the same has been made in the tariff proposals filed by the Distribution Companies).
- Constitution of a State Level Empowered Committee headed by the Chief Secretary to co-ordinate departmental issues and clearances in Renewable Energy Projects.
- Enforcement of time frame for completion of projects i.e. 3 years from the date of clearances.

In keeping with contemporary requirements and to utilize various environmental credits available, it is proposed that the KREDL be transformed into a dynamic result oriented entity. With substantial skill

and capacity addition KREDL will actively take up implementation of the RE Policy including Energy Efficiency, Conservation, Demand Side Management and CDM activities.

Several consultations were held with stakeholder Associations. The draft RE Policy has been discussed at various official levels, including the Chief Secretary on 22.10.2009. The draft policy was circulated among technical experts, financial consultants, Renewable Energy Developers and Government Departments. The opinions and suggestions offered by various Departments have been taken care of and they have been incorporated suitably in the policy.

In light of the above, a decision has been taken by the Government to formulate and adopt a Renewable Energy Policy for the period 2009-2014.

Hence the following Order:-

**GOVERNMENT ORDER NO. EN 354 NCE 2008 BANGALORE, DATED: 19TH JANUARY 2010.**

In the circumstances explained in the preamble, Government is pleased to announce the **Karnataka Renewable Energy Policy 2009-14** as detailed in the Annexure.

The Karnataka Renewable Energy Policy 2009-14 shall come into effect from the date of its publication in the Official Gazette and will remain in force till 2014 or until further Orders.

This Order issues in consultation with Finance Department, Forest, Environment & Ecology Department and Commerce & Industries Department. ETC and with the approval of the Cabinet vide No. C. 606/2009 dated 23.12.2009.

BY ORDER AND IN THE NAME OF  
GOVERNOR OF KARNATAKA

Sd/-

**(K. JAIRAJ)**

ADDITIONAL CHIEF SECRETARY  
TO GOVERNMENT,  
ENERGY DEPARTMENT

**To:**

The Compiler, Karnataka Gazette, Government Press for publication in the extra ordinary Gazette and supply 500 copies to this department.

**Copy to:**

1. The Accountant General (A&E), Karnataka, Bangalore.
2. The Chief Secretary to Government, Vidhana Soudha, Bangalore.
3. All ACS/Principal Secretaries/ Secretaries to Government.
4. The Secretary to Hon'ble Chief Minister, Vidhana Soudha, Bangalore.
5. The Secretary, Ministry of Power, Government of India, Shram Shakti Bhavan, Rafi Marg, New Delhi.
6. The Secretary, Ministry of New and Renewable Energy, Government of India, Block 14, CGO Complex, Lodhi Road, New Delhi.-110003.
7. The Chairman, Central Electricity Authority, Sewa Bhavan, R.K. Puram, Sector-1, New Delhi-110066.
8. The Chairman, Central Electricity Regulatory Commission, 3rd and 4th floor, Chandralok Building, 36, Janpath, New Delhi-110001.
9. The Managing Director, Karnataka Power Corporation Lid., No. 82 Shakti Bhavan, Race Course Road, Bangalore-560001.
10. The Managing Director, Karnataka Power Transmission Corporation Ltd., Kaveri Bhavan, Bangalore-560009.
11. The Managing bDirector, MESCOM/GESCOM/BESCOM/HESCOM/CESCOM.
12. The Managing Director, Karnataka Renewable Energy Development Limited, #19, Maj. Gen. A.D. Loganadhan INA Cross, Queen's Road, Bangalore-52.
13. The Secretary, Karnataka Electricity Regulatory Commission, 6th and 7th Floor, Mahalaxmi Chambers, No. 9/2 M.G. Road, Bangalore-560001.
14. The Chief Electrical Inspector, Mysugar Building, Ground Floor, J.C. Road, Bangalore-02.
15. The P.S to Chief Secretary (cabinet Section), Vidhana Soudha, Bangalore. (No. 606/2009 dated 23.12.2009).
16. The P.S. to Hon'ble Minister for Energy, Vidhana Soudha, Bangalore.
17. The P.S to the Additional Chief Secretary to Government, Energy Department, Bangalore.
18. The P.A. to Deputy Secretary to government, Energy Department, Vikasa Soudha, Bangalore.
19. All Sections of Energy Department.
20. SGF/office copy/spares.

**GOVERNMENT OF KARNATAKA**

No : EN 76 EMC - 2 / 2010

Karnataka Government Secretariat,  
Vikas Soudha,  
Bangalore, dated: 6.05.2010

**CORRIGENDUM**

In exercise of the powers conferred in para 24 of the Karnataka Renewable Energy Policy 2009-2014, the Government of Karnataka issues the following amendments to the Government Order No : EN 354 NCE 2008 Dated: 19th January 2010 under the headings :

**4. Scope of the Policy :-**

“ The provisions contained in this Renewable Energy Policy will be applicable to all the Renewable Energy Projects. This Policy will be applicable to all the Renewable Energy Projects sanctioned prior to the commencement of the policy and those Renewable Energy projects in the process of development including already commissioned Renewable Energy Prjects.”

**Shall be read as**

“The provisions contained in this Renewable Policy will be appliucable to all the Renewable Energy projects sanctioned after the date of notification in the official gezette.”

**6. Year wise Renewable Energy Target and Capital Investment 2009 to 2014**

“The year wise target for different Renewable Energy sources and the investment necessary during the policy period is given below.”

RE Source	Target MW	Year wise proposed capacity addition					Likely Total investment (Rs crores -at current prices)
		09-10	10-11	11-12	12-13	13-14	
Wind Power	2969	630	680	530	530	599	15680
Mini and Small Hydro	600	100	100	150	150	100	2700
Cogeneration in Sugar Industry	281	56	56	56	56	57	1120
Biomass / Bio Gas	300	60	60	60	60	60	2100
Waste to Energy	50	10	10	10	10	10	400
<b>Total</b>	<b>4200</b>	<b>856</b>	<b>906</b>	<b>806</b>	<b>806</b>	<b>826</b>	<b>22000</b>

**The following shall be substituted to the table**

RE Source	Target MW	Year wise proposed capacity addition					Likely Total investment (Rs crores - at current prices)
		09-10	10-11	11-12	12-13	13-14	
Wind Power	2969	630	680	530	530	599	15680
Mini and Small Hydro	600	100	100	150	150	100	2700
Cogeneration in Sugar Industry	281	56	56	56	56	57	1120
Biomass / Bio-Gas	300	60	60	60	60	60	2100
Waste to Energy	50	10	10	10	10	10	400
Solar PV/GSP Thermal Sector	126	6	30	30	30	30	1890
<b>Total</b>	<b>4326</b>	<b>862</b>	<b>936</b>	<b>836</b>	<b>836</b>	<b>856</b>	<b>23890</b>

**7 (i) Land identification for Renewabe Energy Projects :-**

“Further, keeping in view the welfare interested of the farmers, certain equity of not less than 5% of gross energy generated will be provided to take the landowner farmers as equity patners in the Renewable Energy Projects.”

**Shall be omitted.**

**7 (iv) Land Development for Renewabe Energy Projects**

“Karnataka Renewable energy Development Limited will sublease the developed lands to the Renewable Energy Developers for a period of 30 yers.

After 30 years the project stands transferred to the Government”

**Shall be read as**

“Karnataka Renewable Energy Development Limited will sublease the the developed lands to the Renewable Energy devepores for a period of 30 years,

Thereafter the project will be renewed for a period of 5 years at a time after the lease period subject to fulfillment of conditions stipulated by the Government.”



**10 (viii) Power Purchase Agreement (PAA) :-**

“The sale of electricity by power producers of Energy Supply company will be governed by the power purchase agreements executed between the power producers and witnessed by Karnataka Electricity regulatory commission. Power company of Karnataka limited will assign power purchase agreements to the ESCOMs with back-to- back arrangement.”

**Shall be read as**

“The sale of electricity by power producers of Energy supply company will be governed by the power purchase agreement executed between the power producers and witnessed by Karnataka Electricity regulatory commission. The Government will assign the power purchase agreements to the ESCOMs at the time of allotment.”

**13 (i) Strategy for wind projects**

“To avoid locking of huge capacities the wind project allotment will be restricted to 50 MW at a given area each time. In case of potential in the said location further allocation considered after successful commissioning of the allotted project.”

**Shall be omitted.**

BY ORDER AND IN THE NAME OF  
GOVERNOR OF KARNATAKA,

Sd/-

**(S.J. SAMPATH KUMAR)**

UNDER SECRETARY TO GOVERNMENT,  
ENERGY DEPARTMENT.

**To :**

The Compiler, Karnataka Gazette, Government Press for publication in the extraordinary Gazette and supply 500 copies to this department

**Copy to :**

1. The Accountant General (A&E), Karnataka, Bangalore.
2. The Chief Secretary to Government, Vidhan Soudha, Bangalore.
3. All ACS / Principal Secretaries / Secretaries to Government.

4. The Secretary to Hon'ble Chief Minister, Vidhan Soudha, Bangalore.
5. The Secretary, Ministry of Power, Government of India, Shram Shakti Bhavan, Rafi Marg, New Delh.
6. The Secretary, Ministry of New & Renewable Energy, Government of India, Ministry of New and Renewable Energy, Block-14, CGO Complex, Lodhi Road, New Delhi - 110 003.
7. The Chairman, Central Electricity Authority, Sewa Bhavan, R.K. Puram, Sector-I, New Delhi - 110 066.
8. The Chairman, Central Electricity Regulatory Commission, Central Electricity Regulatory Commission, 3rd & 4th Floor, Chanderlok Building, 36, Janapath, New Delhi - 110 001.
9. The Managing Director, Karnataka Power Corporation Ltd., No. 82, Shakti Bhavan, Race Course Road, Bangalore - 560 001.
10. The Managing Director, Karnataka Power Transmission Corporation Ltd., Kaveri Bhavan, Bangalore - 560 009.
11. The Managing Director, MESCOM / GESCOM / BESCOM / HESCOM / CESC.
12. The Managing Director, Karnataka Renewable Energy Development Limited, No. 19, Maj. Gen. Loganathan INA Cross, Queens Road, Bangalore - 560 052.
13. The Secretary, Karnataka Electricity Regulatory Commission, 6th and 7th Floor, Mahalaxmi Chambers, No. 9/2, M. G. Road, Bangalore - 560 001.
14. The Chief Electrical Inspector, No. 32/1-2, 2nd Floor, Cresnet Towers, Cresnet Road, Bangalore - 560 001.
15. The President, Indian Wind Power Association, Karnataka Council, No. 50, Millenium Towers, Queens Road, Bangalore - 560051.
16. The P. S. to Chief Secretary (Cabinet Section), Vidhana Soudha, Bangalore.
17. The P. S. to the Additional Chief Secretary to Government, Energy Department, Vikasa Soudha, Bangalore.
18. The P. A. to Deputy Secretary to Government, Energy Department, Vikasa Soudha, Bangalore.
19. All Sections of Energy Department.
20. SGF / Office Copy / Spares.

**Annexure to Government Order No. EN 354 NCE 2008  
Dated : 19.01.2010.**

**KARNATAKA RENEWABLE ENERGY POLICY-2009-14**

**INDEX**

Sl.No.	Particulars	Page No
1.	Vision	12
2.	Mission	12
3.	Objectives	12
4.	Scope of the Policy	13
5.	Goals	13
5. (i)	Renewable Energy Power Generation	13
	Proposed Targets for Renewable Energy Generation, 2009-14	13
5.2 (ii)	Energy Conservation & Energy efficiency	14
	Target for Energy Conservation	15
6	Year wise Renewable Energy target and Capital Investment 2009-14	15
6. (i)	Renewable Energy project Financing	15
6. (ii)	Akshaya Shakthi Nidhi (Green Energy Fund)	16
7	Land Policy for Renewable Energy Projects	16
7. (i)	Land Identification for Renewable Energy Projects	16
7. (ii)	Government Barren Lands meant for Industrial use	17
7. (iii)	Forest land	17
7. (iv)	Land Development for Renewable Energy Projects	17
7. (v)	Consent from Departments	17
7. (vi)	Statutory Clearances	18
8	Renewable Energy Special Economic Zone (SEZ)	18
9.(v)	Implementation of Renewable Energy Projects	18
9.(i)	Allotment Committee	19
9.(ii)	Clearance of Renewable Energy Projects	19
9.(iii)	Single Window Clearance	19

Sl.No.	Particulars	Page No
9.(iv)	Evacuation Arrangement	19
9.(v)	Time limits for project completion	19
10	Regulatory Issues	19
10.(i)	Grant of Incentives Available to Industries	19
10.(ii)	Renewable Energy Obligation	20
10.(iii)	Feed in Tariff	20
10.(iv)	Solar Tariff	20
10.(v)	Roof top Solar Tariff	20
10.(vi)	Wheeling of Electricity	20
10.(vii)	Banking of Electricity	20
10.(viii)	Power Purchase Agreement	21
10.(ix)	Settlements	21
10.(x)	Grid tie policy and Net Metering	21
10.(xi)	Exemption from Demand Cut	21
10.(xii)	Security Deposit and Royalty	21
11.	Policy on financial incentives	21
11.(i)	Government of India Incentives	21
11.(ii)	Entry Tax	21
11.(iii)	Value Added Tax (VAT)	21
11.(iv)	Incentive for Biomass Power Generation Projects	21
11.(v)	Letter of credit	21
11.(vi)	Registration	22
12.	Energy Conservation and Energy Efficiency	22
12.(i)	Strategic Action Plan	22
12.(ii)	Energy Conservation Programs	23
12.(iii)	Energy Conservation Fund	24
12.(iv)	Energy Auditing	24
12.(v)	Energy Obligation	24
13.(i)	Strategy for Wind Projects	24

Sl.No.	Particulars	Page No
13.(ii)	Strategy for Small Hydro Projects	25
13.(iii)	Strategy for Biomass Projects	26
13.(iv)	Strategy for Urban, Municipal and Industrial waste	26
13.(v)	Cogeneration in Industries	26
13.(vi)	Solar Thermal and Solar Photovoltaic	26
13.(vii)	Tidal Energy and Geothermal Energy	27
14.	Benefits under Clean Development Mechanism	27
15.	Facilitation	27
16.	Organizational Development and HR	28
17.	Renewable Energy Vision Group	28
18.	Award Scheme	28
19.	Environmental Issues	28
20.	Local Employment	28
21.	Corporate Social Responsibility	29
22.	Education, Publicity, and Awareness	29
23.	Monitoring	29
24.	Amendments, Relaxation, Interpretation of the Policy	29
25.	Policy Implications on Departments	30 to 32

## **KARNATAKA RENEWABLE ENERGY POLICY - 2009-2014**

### **1. Vision**

To harness Green and clean Renewable Energy Sources in the state for environment benefits and Energy Security. To initiate energy efficiency measures in all sectors for sustainable growth.

### **2. Mission:**

1. To enhance the contribution of environment friendly Renewable Energy sources, to the socio-economic development and supplement rural energy needs through speedy and expeditious commissioning of sustainable Renewable Energy projects.
2. To create conditions conducive to private/ public/community participation and investment in Renewable Energy power projects.
3. To achieve commercial viability and expeditiously operationalize the Renewable Energy Projects.
4. To enhance the contribution of Renewable Energy in the total installed capacity of the state from 2400 MW to about 6600 MW by 2014.
5. To conserve 7901 MU (900 MW) by 2014 through the Energy Efficiency & Energy Conservation measures in all sectors.

### **3. Objectives:**

1. Development, propagation and promotion of Renewable Energy sources and Technologies.
2. Development of Eco-friendly Projects and Harnessing of Natural Resources to avail Green Power.
3. Acceleration of identification, development and implementation of new Renewable Energy projects.
4. Encourage the industries, in addition to sugar industry, with cogeneration potential to set up co-gen plants expeditiously.
5. Provision of "single window" service for technical consultation, sources of finance and project clearance.
6. Decentralized and micro level power generation through renewable energy sources to provide energy supply to agriculture, industry, commercial and household sector.
7. Creation of suitable environment for private sector participation in Renewable Energy Power Generation.
8. R&D, Publicity and Popularization of Renewable Energy.
9. To establish linkages with national and international institutions for active collaboration in development, demonstration and commercialization of new and emerging Renewable Energy technologies.
10. To Take Concrete steps for Energy Conservation and Energy Efficiency and Clean Development Mechanism (CDM).

**4. Scope of the Policy:** The policy will be applicable for the development of all sectors of Renewable energy Sources including Energy Conservation and Energy Efficiency. The policy is valid for a 5 year period up to 2014. This policy supersedes all the policy guidelines/instructions issued in this behalf from time to time. The provisions contained in this Renewable Energy Policy will be applicable to all the Renewable Energy Projects. This policy will be applicable to all the Renewable Energy projects sanctioned prior to the commencement of the policy and those Renewable Energy projects in the process of development including already commissioned Renewable Energy projects. Under the policy, Government has the right to approve capacity allotment Government Order essential to become eligible for availing the benefits for the renewable energy projects. Under this policy, it is obligatory to sell the electricity generated from the Renewable Energy Projects commissioned to the respective geographical ESCOMs in which the projects located, at the Tariff determined by KERC, under a long term Power purchase agreement. The policy covers the Energy Efficiency and Energy Conservation along with Demand Side Management (DSM) and Clean Development Mechanism (CDM) implementation. Once the target fixed under this policy is achieved, a new policy shall be launched. For Cogeneration in Sugar industries a separate policy will be brought out by the Cooperation department and the Industries and Commerce department for comprehensive development of the sector. Similarly for Bio-Fuels the Bio-Fuel Board will come out with a separate policy.

**5. Goals:** The policy sets twin goals of (i) Renewable Energy power Generation and (ii) Energy Conservation & Energy efficiency.

**5. (i) Renewable Energy power Generation:** Presently Renewable Energy Sources contribute about 4600 MU of energy per annum (11.5 %) of the total 40000 MU available from various installed capacities (8600 MW including share from CGS) in the state. The energy demand is projected to attain 10 % growth. Committed to the green energy the state has mandated, vide GO No EN 216 NCE 2006 dated 2.3.2007, to enhance the upper limit share of Renewable Energy mix to 20% in the total quantum of energy. Over the next five years the energy consumption is anticipated to be around 64000 MU per annum. To attain 20 % Renewable Energy mix the Renewable Energy sources required to contribute 12800 MU by 2014. This sets the tone for doubling the installed capacity of the various RE sources combined together. Considering the average plant load factor of various Renewable Energy sources (25 %) this necessitates the cumulative Renewable Energy capacity addition of about 5850 MW by 2014. However, the policy has a goal of commissioning 4200 MW additional capacity with accumulative Renewable Energy capacity addition of 6600 MW by 2014.

In the above background the Green Power option for Karnataka are as follows.

1. Wind power projects.
2. Mini, Micro and Small Hydropower projects (up to 25 MW).
3. Co-generation in sugar and other Industries.
4. Biomass and Biogas projects.

5. Solar photovoltaic and Solar Thermal Power Generation. Solar Hybrid Systems and Solar applications in Domestic and Industrial Sector.
6. Municipal Solid waste, Industrial Liquid/Solid Waste Power Projects including Bio-fuels & Bio Diesel Projects.
7. Tidal Wave Energy/Geo-Thermal Energy.
8. Other Renewable Energy Sources not spelt above, viz: synthetic Fuels, Heat recovery Systems in various Industries.

For the various above Renewable Energy sources there are proven technologies. The targets for significant Renewable Energy sectors are set as below.

**Installed Capacity & Proposed Targets for RE Generation, 2009 -14**

RE Source	Potential MW	Installed capacity MW	Capacity addition by 2014 MW	
			Target	Cumulative
Wind Power	12950	1368	2969	4337
Mini and Small Hydro	3000	416	600	1016
Cogeneration in Sugar Industry	1500	535	281	816
Biomass/Bio-gas	1000	81	300	381
Waste to Energy	135	--	50	50
<b>Total</b>	<b>18500</b>	<b>2400</b>	<b>4200</b>	<b>6600</b>

(Energy Consumption data Source: KPTCL Reports)

There are about 20,000 industries which have boilers and turbines for manufacture of their products like, steel, rice, paper, textile etc. Cogeneration units could be set up in these units. As per rough estimate, about 2000 MW of power can be generated from these industries by setting up cogeneration plants.

However, the tidal wave energy and Geo-thermal energy are still in early stages and Technology Demonstrations from laboratory scale Research & Development to Field level will be encouraged by establishing Prototype Demonstration Projects to produce Energy from Tidal wave and Geo-Thermal Energy.

**5.2(ii) Energy Conservation & Energy efficiency:** One unit of energy saved is equivalent to two units of energy generated. Energy Efficiency and Energy Conservation is a cheaper option than Generation. The state government is committed to implement the Energy Conservation Act 2001 and accordingly introduce Efficiency measures in all sectors of economy and attain the Energy Conservation. Of the total energy consumption major share of energy is consumed by Agriculture sector (35 %), other sectors consume Industrial sector (24 %), Commercial sector (14 %), Domestic sector (21 %), Municipal Utilities and others (6 %). The Planning Commission of India estimated that the potential for Energy Conservation in various sectors of economy is about 25 % (Bulletin on Energy Efficiency: IREDA, volume 8; January 2008



page 16). It is targeted to conserve 25 % of energy consumed in each of the sectors. During the policy period it is targeted to conserve about 7901 MU of energy as a cumulative of all the major sectors by 2014. The Energy conservation sector wise Goals are as below.

**Sector Wise Target for energy conservation during the policy period, 2009-2014:**

S.No.	Sector	Consumption		Energy conservation Target (25 %) MU	
		MU	% consumption	MU 2009 to 14	Per Annum
1	Agriculture	10814	35	2703	540
2	Industries	7263	24	1815	363
3	Domestic	6690	21	1672	334

S.No.	Sector	Consumption		Energy conservation Target (25 %) MU	
		MU	% consumption	MU 2009 to 14	Per Annum
4	Commercial	4006	14	1001	200
5	Municipal Utilities and others	2841	6	710	142
	<b>Total</b>	<b>31614</b>	<b>100</b>	<b>7901</b>	<b>1579</b>

**6. Year wise Renewable Energy Target and Capital investment 2009 to 2014:**

The year wise target for different Renewable Energy sources and the investment necessary during the policy period is given below:

RE Source	Target MW	Year wise proposed capacity addition					Likely total investment (Rs crores - at current prices)
		09-10	10-11	11-12	12-13	13-14	
Wind Power	2969	630	680	530	530	599	15680
Mini and Small Hydro	600	100	100	150	150	100	2700
Cogeneration in Sugar Industry	281	56	56	56	56	57	1120
Biomass/Bio-gas	300	60	60	60	60	60	2100
Waste to Energy	50	10	10	10	10	10	400
<b>Total</b>	<b>4200</b>	<b>856</b>	<b>906</b>	<b>806</b>	<b>806</b>	<b>826</b>	<b>22000</b>

**6. (i) Renewable Energy Project Financing:** It is estimated that from the targets of additional capacity of 4200 MW Renewable Energy power in the next 5 years by 2014 entails an investment of about Rs 22,000/-

crores at current prices. During the previous years, the investment in the various Renewable Energy developments has come from the private entrepreneurs. However during the previous three years of Renewable Energy development, in the state, on an average annually about 300 MW Renewable Energy capacity additions brought in about Rs 1,800 crores investment by the private sector. It is expected that the present policy initiative may bring in an additional investment of Rs 1,600 crores annually by the private sector. With this the private sector investment would amount to Rs 17,000 crores during the policy period. The profit making Central and State Public Sector Undertakings may also invest in the Renewable Energy projects and may bring in Rs 5,000 crores.

**6. (ii) Akshaya Shakthi Nidhi (Green Energy Fund):** In order to facilitate Renewable Energy project financing and Energy Conservation and Efficiency measures Green Energy Fund "Akshaya Shakthi Nidhi" will be established. "Green Energy Cess" of Rs 0.05 (five paise) per unit would be levied on the electricity supplied to commercial and industrial consumers. It is estimated to generate about Rs 55 crores annually. Out of the Rs 55 crores, 10 % of this fund to the tune of Rs 5 crores will be set apart as contribution to Energy Conservation Fund for Energy Conservation activities. The balance Rs 50 crores will be set apart for Renewable Energy project financing. The Akshaya Shakthi Nidhi will be administered by KREDL for promotion of Renewable Energy particularly in Public Private Participation (PPP) mode, decentralized generation and distribution Renewable Energy projects for the benefit of rural sector. The funds may also be utilized for land acquisition and land development activity for Renewable Energy projects including Net Present Value and compensatory afforestation, soil moisture conservation etc for forest land clearance.

**7. Land Policy for Renewable Energy Projects:** The availability of suitable land and making the land available expeditiously is a major issue for RE development. To realise the targeted potential of 4200 MW during the policy period about 12000 Ha of various categories of lands like Government Barren lands, Revenue lands, Private lands, Panchayat lands and Forest lands etc are estimated to be necessary in different districts of the state. To address the land issue following is proposed.

**7. (i) Land Identification for Renewable Energy Projects:** Inventory of surplus and unused land available with Public Sector Undertakings, State Govt., Urban Local Bodies/ Gram Panchayath lands and suitable private waste lands, unproductive single crop agricultural lands will be undertaken District wise, by the Deputy Commissioners to identify lands for the Renewable Energy projects. Care will be taken to exclude archaeological heritage lands, prayer and temple lands, burial grounds and monuments etc. The Government will provide such available lands, waste lands for developing the Renewable Energy projects under the provisions of Section 71 of Land Revenue Act to Karnataka Renewable Energy Development Limited. Further necessary amendments to section 79(a), 79(b) and 80 of the Karnataka Land Reforms Act are to be made to enable the Renewable Energy project developers to purchase suitable private land directly from the owners of the land.

For waste to energy Renewable Energy projects the Municipal Bodies will identify and keep the lands at the disposal of Karnataka Renewable Energy Development Limited. The identified lands will be acquired through the Karnataka Industrial Area Development Board (KIADB), under the provisions of The Karnataka Industrial Policy, and made available to the Karnataka Renewable Energy Development Limited for the Renewable Energy projects. Further, keeping in view the welfare interest of the Farmers, certain equity of not less than 5% of gross energy generated will be provided to take the land owner Farmers as equity partners in the Renewable Energy projects. Non Agricultural conversion for the express purpose will be accorded within a period of one month from the date of applying for the same. Government will review the applicable stamp duty.

**7. (ii) Government. Barren lands meant for Industrial Use:** The barren Government lands, reserved, as per the industrial planning for industrial use, at declared Renewable Energy sites, 10% of such lands will be kept at the disposal of Karnataka Renewable Energy Development Limited for developing the land to set up the Renewable Energy power projects.

**7. (iii) Forest Land:** Wherever Forest land is identified for the Renewable Energy projects the same will be processed and considered by the Karnataka Forest Department under the provisions of the Forest Conservation Act (1980) subject to the Ministry Of Environment & Forest guidelines within a period of 4 (four) months.

**7. (iv) Land Development for Renewable Energy Projects:** The identified Revenue, Private and Forest lands will be developed by Karnataka Renewable Energy Development Limited to facilitate setting up of various Renewable Energy projects expeditiously. The Akshaya Shakthi Nidhi Funds will be utilised to develop the lands including the payment towards Net Present Value and Compensatory Afforestation in case of Forest Lands. This will enable the State to offer ready to use developed land to set up Renewable Energy projects. Karnataka Renewable Energy Development Limited will sub lease the developed lands to the Renewable Energy developer for a period of 30 years. After 30 years the project stands transferred to the Government. Land-Lease Rent will be as per the prime lending rate over current market price as on the date of handing over of the project, subject to land availability and financial limits on case-to-case basis. However, it is not permissible to mortgage the lands by the Renewable Energy developers to any financial or other agency/institution/body.

**7. (v) Consent From Departments:** The Karnataka Renewable Energy Development Limited / Government will obtain consent from the concerned departments like Forest about the location visa-versa the Wild Life Sanctuaries, National Parks, Eco-sensitive Zones etc. From Irrigation department to the effect that the proposed Projects(s) does not infringe with the drinking and irrigation rights of the local inhabitants, from Revenue department regarding approval under the Karnataka Land Reforms Act. Consent from the Gram Panchayat etc, Departments will offer their opinion within 90 days time. The Administrative Department will monitor the reports in a time bound manner.

**7. (vi) statutory clearances:** Various statutory clearances that are essential for the development and commissioning of the Renewable Energy projects will be dealt by the Karnataka Renewable Energy Development Limited with the concerned departments and agencies. The developers will apply in the formats prescribed to the different departments and furnish a copy to K Karnataka Renewable Energy Development Limited. The Karnataka Renewable Energy Development Limited will pursue with the departments and co-ordinate for speedy approvals and clearances within 90 days for all departments / agencies and 120 days in case of Forest clearance. The issues pending for longer periods will be placed before the Quarterly Review Meetings held at the level of the Chief Secretary, Government of Karnataka. Regarding the lands developed by Karnataka Renewable Energy Development Limited. The Karnataka Renewable Energy Development Limited will obtain all statutory clearances from different departments before hand and offer such lands for Renewable Energy Project development.

**8. Renewable Energy Special Economic Zone (SEZ):** The Renewable Energy and allied sector requires to be supported with Renewable Energy equipment manufacturing industries. Renewable Energy Sources like wind and solar require considerable extent of land for setting up manufacturing units of Solar Photo Voltaic and wind Turbine etc. The Renewable Energy manufacturing industrial activity needs to be supported with land.

Under the Industrial Policy 2009 the state has identified areas covering Bidar, Belgaum, Bagalkot, Shimoga and Mandya Districts for Sugar and co-gen, power development. Similarly areas covering Raichur, Bellary, and Bijapur & Chitradurga Districts for Power Generation sector specific industrial zone development. It is proposed under this policy that the Government will keep 10% portion of these lands at the disposal of Karnataka Renewable Energy Development Limited to develop them for Renewable Energy projects and allied Renewable Energy industries. Further 10% of lands will be set apart for Renewable Energy project in all future SEZs to be identified under Industrial Policy 2009 and also in the already approved SEZs at Shimoga, Hassan, Bangalore, Udupi, Mysore and Bellary. 10% of all SEZ lands will be kept at the disposal of Karnataka Renewable Energy Development Limited to develop Renewable Energy projects.

Further action will be taken to establish Renewable Energy SEZ under the provisions of the Industrial Policy 2009, particularly in the backward areas of Karnataka to promote setting up of solar manufacturing units and other Renewable Energy allied manufacturing units. Waste lands and surplus unproductive lands of about 2000 hectares will be identified for the purpose.

**9. Implementation of Renewable Energy Projects:** Various measures will be put in place to facilitate expeditious implementation of Renewable Energy Projects. Renewable Energy projects Identified by Karnataka Renewable Energy Development Limited will be offered for development on Public Private Partnership/ Build Own Operate Transfer Mode on developed lands ready to set up the Renewable Energy Projects specially in wind and Mini Hydro projects.

**9. (i) Allotment Committee:** A committee under the Chairmanship of Principal Secretary, Energy Department will consider for allotment of capacity of the renewable energy projects to the private entrepreneurs. The allotment committee will meet periodically, at least once every quarter, to consider the various Renewable Energy proposals. The Karnataka Renewable Energy Development Limited will place the proposals received during the preceding quarter before the allotment committee with due scrutiny/evaluation and recommendations. The Allotment Committee will be constituted and separately notified.

**9. (ii) Clearance of Renewable Energy Projects:** Clearance of Renewable Energy projects involves sanctions/clearances from a number of Government Agencies/Departments. The concerned department will give necessary approval and clearance within 90 days of the application submitted. KREDL will monitor with the concerned departments.

**9. (iii) Single Window Clearance:** A State Level Empowered Committee with the Chief Secretary Government Of Karnataka as Chairman will provide single window clearance for developing the Renewable Energy Source Power Plants. The Single Window will review the issues relating to the statutory clearances of various departments. The clearances / approvals which are not accorded within the specified time period will be dealt by the Single Window empowered committee. Inter departmental co-ordination will be strengthened to achieve better results. Benefits of supportive policies will be taken to the maximum extent. The composition of the Empowered Committee will be separately notified.

**9. (iv) Evacuation Arrangement:** Often the Renewable Energy projects are located in remote areas wherein the evacuation arrangements/substations are not readily available and the project commissioning depends on grid strengthening. To overcome the situation Karnataka Power Transmission Company Limited and Karnataka Renewable Energy Development Limited will jointly undertake the survey of LV, HV and EHV Substations and required transmission and distribution lines necessary for the Renewable Energy projects. A committee will examine the Grid issues related to the Renewable Energy projects. Karnataka Power Transmission Company Limited will undertake the augmentation of transmission lines and laying of new lines and receiving stations as required. Respective Renewable Energy Project Developers will bear the cost of transmission lines from the project site to the substation as per grid norms.

**9. (v) Time Limit for project Completion:** It is mandatory for the developer to complete the project in all respect and commission the project with grid synchronization within a period 3 years from the date of the statutory clearances. Karnataka Renewable Energy Development Limited will endeavour to obtain all required statutory clearances within 6 months period.

**10. Regulatory Issues:** Following facilities will be extended to all the Renewable Energy Projects.

**10. (i) Grant of Incentives Available to Industries:** Generation of electricity from Renewable Energy Sources will be treated as Industry under the provisions of the Industrial policy 2009 and incentives available to industrial units under such schemes will also be extended to the Renewable Energy Power Projects irrespective of the Zone.

**10. (ii) Renewable Energy Obligation:** The state Government is committed to procure & utilize the Renewable Energy power as required and determined by Government of Karnataka by time to time, subject to Karnataka Electricity Regulatory Commission (KERC) guidelines. Due grid strengthening will be undertaken to meet this commitment. The state Government reserves the first right of refusal in respect of purchase of power produced by the Renewable Energy Sources which come under this Renewable Energy Policy.

**10. (iii) Feed in Tariff:** Various sources of Renewable Energy power procurement by the Energy Supply Companies/distribution licensees will be at Tariffs as determined by the KERC. When plant completes 11 years have to sell power to Energy Supply Companies on Tariff based on variable cost subject to KERC norms.

**10. (iv) Solar Tariff:** KERC has determined a Tariff of Rs. 3.40 per unit. The Ministry of New & Renewable Energy (MNRE) Government of India supported Solar Grid connected Power projects of 1 MW and above. MNRE has allowed an incentive upto Rs. 12 per KWh for Solar PV and upto Rs. 10 per KWh for Solar Thermal projects in addition to the Tariff allowed by KERC. Under this policy Solar Grid connected Power projects will be encouraged as per the above policy of the Ministry of New And Renewable Energy.

**10. (v) Roof Top Solar Tariff:** The Roof Top Grid connected solar KWp level projects of 5 KWp to 100 KWp will be allowed connecting at 415 V, 3 phase, 11 KV level of distribution system of the licensee in such a manner that the maximum energy injection will not be more than 70% of the consumption from the distribution licensee's source by the Solar Roof Top consumer. Any injection in a billing period exceeding 70% of the consumption will be treated as inadvertent and will not be considered for commercial purpose; neither the deficit is carried forward to next billing period. Such injection will be settled on Net Basis with the consumption of the said consumer from the distribution licensee's source in each billing period. Roof Top Grid connected solar power quantum fed to the Grid will be eligible for a Tariff of Rs 3.40 per KWh along with Net Metering facility. If any incentives available from Ministry of New and Renewable Energy Government of India, it will be passed on to the Developer. However, Roof Top systems will be additionally eligible for any other subsidies extended to the Roof Top Projects. Solar Photo Voltaic systems below 2 KWp will be battery backed isolated stand alone systems. Isolated Solar Photo Voltaic sources up to 200 KWp will be for Rural Applications.

**10. (vi) Wheeling of Electricity:** wheeling charges @ 5 % will be applicable subject to the KERC norms.

**10. (vii) Banking of Electricity:** The banking facility for the power generated shall be allowed as determined by KERC from time to time for the energy banked with the Karnataka Power Transmission Company Limited / distribution licensee. Energy banked beyond the time prescribed will be utilized and paid for by the Karnataka Power Transmission Company Limited / distribution licensee at tariff applicable as per KERC norms.

**10. (viii) Power Purchase Agreement (PPA):** The sale of electricity by Power Producer of Energy Supply Company will be governed by the Power Purchase Agreement executed between the Power Producer and witnessed by Karnataka Electricity Regulatory Commission. The Power Purchase Agreement will be executed in a time bound manner. Power Company of Karnataka Limited will assign Power Purchase Agreements to the ESCOMs with back to back arrangement.

**10. (ix) Settlements:** All transactions between the Karnataka Power Transmission Company Limited / ESCOMS /Distribution Licensee and the producer involving wheeling or sale of power will be settled on monthly basis. The Karnataka Power Transmission Company Limited / distribution licensee will pay interest on payments delayed beyond a month @ State Bank of India short term Prime Lending Rate for delayed amount for actual period of delay.

**10. (x) Grid Tie Policy and Net metering:** Net metering facility will be extended to Solar power systems installed on commercial establishments and individual homes connected to the electrical grid to feed excess power back to the grid with power credits accruing to the Photovoltaic energy producer.

**10. (xi) Exemption from Demand cut:** Exemption of demand cut to the extent of 50% of the installed capacity assigned for captive use purpose, will be allowed.

**10. (xii) Security Deposit and Royalty:** The Government will determine suitable Security Deposit for the Renewable Energy projects to bring in earnestness in project implementation. The quantum of royalty to be levied on energy generation from Renewable Energy sources will be determined by the Government.

**11. Policy on Financial Incentives:** Following incentives will be extended to all the Renewable Energy Projects.

**11. (i) Government Of India Incentives:** The various concession and incentives allowed by Ministry of New And Renewable Energy /Government Of India regarding Detailed Survey & Investigation/Detailed Project Report, Generation Based Incentive etc will ipso-facto continue to be passed on by the State Government to the project developer through Karnataka Renewable Energy Development Limited.

**11. (ii) Entry Tax:** Entry tax and other fiscal incentives to Renewable Energy generation units are in accordance with the Industrial Policy 2009-10.

**11. (iii) Value Added Tax (VAT):** The Value Added Tax applicable on various Renewable Energy equipments and instruments as well as the Energy Efficient and Power saving appliances etc, like the Renewable Energy and energy Efficient consumer durables directly purchased by the consumers will be considered for suitable revision under the provisions of Karnataka State Sales Act.

**11. (iv) Incentives for Biomass Power Generation projects:** The Government of Karnataka will facilitate Biomass power Plants with an enabling Tariff atmosphere in Co-ordination with KERC.

**11. (v) Letter of Credit:** The ESCOMs will extend the facility of Letter of Credit to the Developer for

realizing payment in scheduled period for the Renewable Energy power sold to the ESCOM. The cost for opening the Letter of Credit shall be reimbursed to the ESCOMS from Akshaya Shakthi Nidhi Funds by Karnataka Renewable Energy Development Limited.

**11. (vi) Registration:** The various agreements executed by the Renewable Energy project developers with different departments of Government regarding capacity allotment, project implementation, Revenue & other land lease including Forest land lease agreements will be considered for revision of registration fee towards registering the respective agreements under the relevant provisions of Karnataka Stamps & Registration Act by suitable Amendment.

**12. Strategy for Energy Conservation and Energy Efficiency (EC&EE):** Karnataka Renewable Energy Development Limited is "The Designated Agency" vide no. DE 22 PSR 2002 dated. 13.5.2004, to coordinate, regulates and enforces the provision of the "The Energy Conservation Act 2001". The Government of Karnataka vide no. EN 396 NCE 2006 dated. 13.11.2007 and corrigendum, No. EN 87 NCE 2008 dated. 8.4.2008 notified the following under section 18, Energy conservation act 2001. (i) The Mandatory use of solar water heating systems. (ii) Mandatory use of Compact Florescent Lamp (CFL) in Government Buildings / aided institutions / Boards/ Corporations. (iii) Mandatory use of ISI mark Energy Efficient Motor pump sets, Power capacitor, Foot valves in Agriculture sector and (iv) Promotion of Energy Efficient Building design. With a view to facilitate and enforce the implementation of various provisions of Energy Conservation Act-2001 and to take policy decisions, a State Level Committee has been constituted vide GO No EN 87 NCE 2008 dated 3.4.2009. The committee will guide on the following matters.

- Energy conservation & Efficiency policy.
- State Energy Conservation Strategy and Action Plan.
- Issuance of government regulations and orders to promote Energy Conservation.
- Establishment of a State Energy Conservation Fund.
- Demand Side Management (DSM) activities.
- Technical assistance and financial incentives to be offered for EC activities.

The Karnataka Renewable Energy Development Limited will supervise, drive and enforce Energy Efficiency measures in the state and implement the Demand Side Management (DSM).

**12. (i) Strategic Action Plan:** In the direction to implement the Energy Conservation Act 2001 Karnataka Renewable Energy Development Limited will prepare a strategic action plan. Thrust areas for the Strategic Action plan will be, (i) Regulatory activities for enforcing Energy Conservation Act in State. (ii) School and collage education, policy promotion & research. (iii) Information dissemination on Energy Efficiency. (iv) Co-ordination with other state Designated Agencies. (v) Developing Energy Efficiency/DSM programs. (vi) Delivery Mechanism for Energy Efficiency programs. As part of the Strategic Energy Conservation Plan, Karnataka Renewable Energy Development Limited will develop a



set of databases to support the development and implementation of EC programs, and launch a general information and education campaign to promote energy conservation activities.

**12. (ii) Energy Conservation programs:** To achieve the Energy Conservation and Energy Efficiency objectives Karnataka Renewable Energy Development Limited as apart of Strategic Energy Conservation Plan will implement a set of proactive energy conservation programs. These programs will be implemented in cooperation with relevant state government agencies and the private sector. Karnataka Renewable Energy Development Limited will develop the preliminary designs of 12 energy conservation programs, which will be implemented during the policy period. A list of the programs is provided below.

**Programs to be implemented during 2009, 2010**

1. Home Bright - Residential High-Efficiency Lighting Program, CFL/LED/Electronic chokes
2. School Collage curriculum - Capacity building and Training.
3. Public Buildings Partenership Program - Energy Efficiency implementation in public buildings using ESCOMs route.
4. Solar/LPG water heating - Mandatory Solar/LPG Water Heating Program.
5. Energy Efficiency Financing - Financing of energy efficiency improvement using the Energy Conservation Fund.

**Programs to be implemented during 2011 to 2014**

6. SME Program - Energy efficiency improvement in small and medium enterprises.
7. Work Bright Program - Commercial High-Efficiency Lighting Program, CFL/LED/Solar Lighting.
8. Motor Renewable Energy Power - High Efficiency Motor Rewinding Program.
9. Agricultural Efficiency- Energy efficiency improvement in agriculture by modification & retrofitting, Star Rated Pumps/Solar Pumps, non metallic PVC/polyethylene pipes for suction and delivery, friction free foot valves.
10. Bright Streets - Municipal Street Lighting Program Using advanced technology, CFL/LED/Solar/On-OffTimer.
11. Green Buildings Program - Green Buildings Program - Construct one or two new Green Buildings in each district of the state, ECBC Code. The Green Building concept will be mandatory for all corporate buildings and the buildings constructed by the developers in all the city corporation limits of the state under the suitable amendment to building bye-laws.
12. Municipal Energy Efficiency Program - Improvement of energy efficiency in Municipal Water Pumping, Effluent Treatment and Waste to Energy.

**12. (iii) Energy Conservation Fund:** In order to overcome the financial barriers in the implementation of Energy Efficiency activities by energy consumers in Karnataka an Energy Conservation Fund (Energy Conservation Fund) will be established. The Karnataka Energy Conservation Fund Rules 2007 Dtd 1.9.2007 have been issued under section 16 of the Energy Conservation Act, providing for the Energy Conservation Fund. Under the policy it is proposed to augment the fund with a contribution of Rs 5 crores annually from Akshaya Shakthi Nidhi for 5 years till 2014. The Fund will facilitate the development and growth of an Energy Efficiency infrastructure that includes energy service providers such as ESCOMs to help consumers develop and implement cost-effective Energy Efficiency projects. Karnataka Renewable Energy Development Limited will develop the rationale for use of the funds and eligibility for receiving funding for Energy Efficiency projects etc. The Energy Conservation Fund may also be utilised for Energy Conservation Awards and Publicity Awareness Campaigns capacity building and Trainings etc. The Energy Conservation Fund will be managed and administered by a committee with Managing Director Karnataka Renewable Energy Development Limited as Chairman and members being Chief Electrical Inspectorate to the Government, Government of Karnataka, Managing Director BESCO, one representative of Bureau of Energy Efficiency, Government Of India, one representative of Central Power Research Institute Bangalore and Secretary Federation of Karnataka Chamber of Commerce & Industry.

**12. (iv) Energy Auditing:** Energy Auditing and adopting Energy efficiency measures will be mandatory for all Industrial and commercial installations of 600 KVA and above contract demand and this will be monitored the Karnataka Renewable Energy Development Limited. All LT-2 and LT-4 consumers to adopt Energy Efficient measures as per Government Order dated 13.11.2007 and Energy department will approach KERC for amendments in ES&D code. Similarly Energy department and Urban Development and Housing Departments will come out with proposals to amend the rules for mandatory use of solar water heaters / CFLs/ LEDs etc. accordingly all the urban local bodies will make amendments in the by laws to enforce Solar Water Heating systems as per Government Order dated. 13.11.2007. In this regard the State Government will approach KERC to obtain necessary clearances. To promote Solar Water Heaters (SWHS), a rebate in electricity bill for domestic users at the rate of Rs 100 per month will be extended on installation of Solar Water Heaters. Energy Efficiency and Energy conservation measures are mandatory for all Public Utilities. These measures will lead to saving of about 1000 MW in the first 5 years and up to 20% in the next 5 years. To popularize Energy Conservation the Energy Conservation awards will be given.

**12. (v) Energy Obligation:** Large Industries having 2000 KVA and above as connected load, should produce at least 5 per cent of their requirement through captive power plants using Renewable Energy Sources.

**13. (i) Strategy for Wind projects:** Under the policy it is proposed to develop additionally 2969 MW of wind power projects during the five years up to 2014. This would involve a total investment of Rs 15680 crores. To facilitate successful expeditious commissioning of the targeted wind projects the various

statutory clearances will be cleared through single window mechanism. Karnataka Renewable Energy Development Limited will undertake Wind Resource Assessment and offer the identified windy sites for development on Public Private Participation/Build Operate Own and Transfer (BOOT) mode. To avoid locking of huge capacities the wind project allotment will be restricted to 50 MW at a given area each time. In case of potential in the said location further allocation considered after successful commissioning of the allotted project. Further only 3 sites will be considered including the ones under the process of development. The government waste lands in windy locations identified for industrial development will be offered to set up wind Projects. The capacity of the earlier commissioned wind projects which are more than 10 years old will be considered for augmentation by replacing with efficient higher capacity Wind Turbine Generators. Earlier allotments not commissioned beyond time period will be reviewed. Small wind energy generators will be promoted up to 10 kw for stand alone systems.

The Karnataka Power Corporation Limited is the Karnataka public sector undertaking is the premier Power Generating Company in the State. A priperencial allotment of Wind Power Projects above 500 MW and Solar Power Projects above 100 MW will be considered. The followings geographical regions in Karnataka State are reserved for allotment of Wind Power Projects to Karnataka Power Corporation Limited.

- (a) 50 MW at Kappadagudda Extension.
- (b) 270 MW at Hill ranges of Guledagudda -Gudur.
- (c) Hill ranges of Sureban, Yere Kittur, Kallur, Mallur and Basidoni.
- (d) Hill ranges of Halolli to Katkol (Godachi, Khanpet, Torgal)
- (e) Hill ranges of Halagatti, Mudakavi, Tadasi, Vasan, Govinakoppa.
- (f) Hill ranges of Soudatti to Ugargol.
- (g) Hill ranges of Hanumana Hatti to Kakti.
- (h) Zalki of Indi Taluk.

**13. (ii) Strategy for Small Hydro Projects:** During the policy period, it is targeted to harness 600 MW of power through mini hydro projects involving Rs. 2700 crores of investment. Karnataka Renewable Energy Development Limited will take steps to identify the potential sites watershed basin wise including canal based projects and offer the identified sites for development on Public Private Partnership/Build Operate Own Transfer mode. The Mini Hydro Project proposals which do not involve diversion of the water flow resulting in drying up the stream/river stretch will be considered for development. Keeping in view the environmental issues, the Mini Hydro projects in the Western Ghats' Districts/Forest areas will be restricted to maximum 5.00 MW and preferably Run of the River (ROR) projects encouraged. To facilitate successful expeditious commissioning of the targeted hydro projects the various statutory clearances will be facilitated through single window mechanism. Earlier allotments not commissioned beyond time period will be reviewed. PICO Hydel projects (less than 10 KWH) will be identified by Karnataka Renewable Energy Development Limited in a fast track mode and central financial assistance of 90 % of

the PICO Hydel project cost provided by Ministry of New and Renewable Energy will be passed on to the eligible beneficiaries speedily.

**13. (iii) Strategy for Biomass projects:** The state has 10.5 million Hectors of arable land which generates around 15 million metric tons of agricultural/agro-processing unit residues excluding Baggasse out of which about 7 million metric tons is estimated to be surplus biomass as per the IISC, Bangalore study. The state with 3 million hectors of forest land offers Forest residues plus dry Bamboo biomass sources. During the policy period, it is targeted to harness 300 MW of power through biomass projects based on Rankine Cycle/Biomass Boiler and Otto Cycle/ Biogas Plant or Biomass Gassifier. The Biomass plants will be linked to organic fertilizer production units with key input being the waste coming from the Biomass power plant. To offset the negative factors the biomass projects will be encouraged by extending enabling Tariff atmosphere. The government waste lands will be identified and offered to set up Biomass Projects.

**13. (iv) Strategy for Urban, Municipal and Industrial waste:** During the policy period, it is targeted to harness 50 MW of power through urban, municipal and industrial liquid/solid waste projects. Power generation based on municipal sewerage treatment plants in Bangalore and other cities are identified as priority areas. The Municipal corporations will identify the land for the projects. Installation of digesters to convert green waste to methane gas in all Kalyana Mantaps, Hotels and such other establishments for power generation will be encouraged and supported in both new and existing establishments.

**13. (v) Cogeneration in industry:** During the policy period, in order to encourage cogeneration in various industries, it is proposed to encourage and support industries which have opportunity to cogenerate power. These industries will be encouraged by extending capital subsidy scheme as one time grant put in place vide Government Order dtd. 22.10.1998 subject to surplus power fed to the grid.

**13. (vi) Solar Thermal / CSP and Solar PV:** Grid connected solar projects of 1 MW and above are considered priority projects. Roof Top small scale Solar PV Installations will be encouraged with Net Metering facility to feed surplus power generated to the Grid. Under Solar Karnataka Programme it is targeted for 25000 Solar Roof Tops of 5 to 10 kwp with Net Metering will be taken up with a 250 MW potential during next 5 years with a generation potential of 350 MU. For villages/habitations where grid connectivity not feasible or not cost effective, off-grid solutions based on stand-alone lighting systems, technologies like solar photovoltaic/solar wind hybrid systems, Solar lights and lanterns will be taken up for community lighting purpose. Solar School and Institution programs will be implemented. Gram Panchayat and Local bodies will be involved in decentralized solar implementation. Solar steam generating systems at institutions and industries will be encouraged. Solar water pumps, water purification systems, Milk Pasteurization plants, solar application to cottage industries will be priority areas. Solar passive building technology will be encouraged through legislative measures. To conserve electricity in peak hours solar water heaters, solar lighting systems, solar hoardings etc will be encouraged in domestic, commercial and industrial applications. Solar cities will be developed in the state. All City Corporations, Municipalities will amend their bye - laws with due mandatory provisions for providing solar water

heating facilities, right at planning/building stage, both for residential & commercial categories. It will be mandatory for all the public buildings to have solar devices to meet energy requirements and other applications.

**13. (vii) Tidal energy and Geothermal energy:** To harness and develop the tidal wave energy Technology Demonstrations from laboratory scale Research & Development to Field level will be encouraged along with establishing Prototype Demonstration Projects to produce energy from tidal wave. To explore the possibility of harnessing and development of Geothermal Energy Research & Development assessment in collaboration with premier scientific and technological institutes will be explored.

**14. Benefits under Clean Development Mechanism (CDM):** Government of Karnataka designated Karnataka Renewable Energy Development Limited as the Nodal Agency vide no. EN 94 NCE 2005 dated 17.6.05 for CDM. In Karnataka, about 31 RE projects have availed 80,62,9540 of CERs (Carbon Emission Reduction Rates) by 2008. There is further scope to avail CDM benefits. Karnataka Renewable Energy Development Limited will facilitate to avail CDM benefits in case of Renewable Energy projects and Energy Efficiency & Energy Conservation projects and Demand Side Management (DSM) projects. Karnataka Renewable Energy Development Limited will also take steps to bunch the various Demand Side Management, Solar application and Energy Efficiency programmes in domestic/ commercial and utility sectors to avail CDM benefits. The CDM awareness programs will be held by Karnataka Renewable Energy Development Limited. The CDM eminent consultants will be empanelled by Karnataka Renewable Energy Development Limited. A separate Division in Karnataka Renewable Energy Development Limited will deal with CDM process. The Karnataka Renewable Energy Development Limited (KREDL) will facilitate bundling of various Renewable Energy Projects to avail maximum CER benefits under the UNFCCC/Keyto protocol.

**15. Facilitation:** Karnataka Renewable Energy Development Limited (KREDL) will be the nodal agency for Renewable Energy development, Energy Efficiency and Energy Conservation programmes and implementation of the RE Policy. Karnataka Renewable Energy Development Limited will facilitate Demand Side Management and CDM activities in the State. Karnataka Renewable Energy Development Limited will receive and examine the Renewable Energy Project proposals and submit to Government along with its recommendations. The Government will issue capacity allotment Government Order after due consideration. Karnataka Renewable Energy Development Limited will undertake Wind resource Assessment study and identify windy potential sites and notify for development. Similarly Karnataka Renewable Energy Development Limited will generate data base on Mini Hydel sites with location and potential capacity details etc. Karnataka Renewable Energy Development Limited will take steps to develop model development plan to harness targeted capacities of various Renewable Energy Sources. Karnataka Renewable Energy Development Limited will equip itself with technical particulars, costs, approved and validated Renewable Energy equipments and vendor particulars etc after due prequalification process. Karnataka Renewable Energy Development Limited will undertake quarterly

review of progress of various stages of approved Renewable Energy projects and take measures to resolve issues if any with concerned department/agency. Information kiosks will be set up in Karnataka Renewable Energy Development Limited for easy access of information. Investors guide / Information booklets will be made available for information of Renewable Energy investors. All relevant information will also be made available to the Renewable Energy investors in website / on-line. Karnataka Renewable Energy Development Limited will undertake Information, Communication and Education (ICE) activity regarding Renewable Energy, various Ministry of New And Renewable Energy programmes and also Energy Conservation. Karnataka Renewable Energy Development Limited will bring out annual reports on the progress in implementation of the Policy.

**16. Organizational Development and Human Resource:** For effective implementation of this policy and delivery of the organisational objectives the organisational pattern of Karnataka Renewable Energy Development Limited will be reviewed and strengthened appropriately by the Government. Dedicated Divisions to deal with Operations, Land, CDM, Demand Side Management and Energy Efficiency Divisions will be established / strengthened. In this respect Karnataka Renewable Energy Development Limited will associate with leading National and International institutes of repute.

**17. Renewable Energy Vision Group:** Renewable Energy Vision Group will be constituted by the Government. The vision group will guide the orderly development of Renewable Energy and trade in the State. Regular interaction will also be held with financial institution / banks and such agencies to sort out various issues coming on the way of implementation and successful operation of Renewable Energy projects. The vision group will also look into the Energy Conservation & Energy Efficiency aspects.

**18. Award Scheme:** The Renewable Energy project successfully commissioned during the original agreement period will be awarded with a certificate of appreciation by the government and a cash incentive from Akshaya Shakthi Nidhi Trust as determined.

**19. Environmental Issues:** The Renewable Energy developer will make suitable financial provisions for mitigation of adverse impacts as per the approved Environment Impact Assessment plan, Environment Management Plan and mitigation of degradation of environment, watershed area management, afforestation and soil moisture conservation due to disturbance of eco-system will be implemented at the Project cost. It is required to follow environmental related issues concerning disposal of blasting muck and soil etc, at appropriate dumping sites. Renewable Energy Projects will be encouraged to adopt cleaner development techniques in their activities. They will also be motivated to go for green technologies and processes to protect the environment and ecology. Enterprises adopting such best practices will be recognized with state awards every year.

**20. Local Employment:** The Renewable Energy projects will provide employment to the local people, in respect of all the unskilled/skilled staff and other non-executives required for execution, operation and maintenance of the Project. In regard to technical manpower like engineers and other executives, the

Renewable Energy developer Company will give preference to the candidates conversant with customs, culture, language and dialect of Karnataka.

**21. Corporate Social Responsibility (CSR) and Local Area Development:** Adoption of Corporate Social Responsibility (CSR) by the renewable Energy Project investors will be persuaded. They will be urged to provide training to local people, fine tune the available skills and also promote furnishing schools. The Government will constitute a Local Area Development Committee (LADC) to monitor Corporate Social Responsibility. The Deputy Commissioners shall be the Chairman of the Local Area Development Committee and other members will be nominated by the Government, which will include the representatives of Renewable Energy Project Developers. Concerned Assistant Commissioner will be the Member Secretary.

**22. Education, Publicity and Awareness:** The state government is committed to undertake Publicity and awareness activity to promote and popularize the use of Renewable Energy Resources, and Energy Efficiency and Energy Conservation measures. Necessary curriculum will be introduced in the school and college syllabus. Karnataka Renewable Energy Development Limited will organize workshops and exhibitions. Karnataka Renewable Energy Development Limited will associate with other institutions like Mahatma Gandhi Institute for Rural Energy & Development and other premier national and international agencies, to organize training programs across the Departments for promotion of renewable energy, energy efficiency and energy conservation.

**23. Monitoring:** A high level Inter Departmental Review Committee will be constituted to regularly monitor implementation of all provisions of the policy. This committee will also ensure issue of necessary Government. Orders by various departments in relation to the policy without loss of any time for mid-course corrections, if required for smooth implementation of the Policy.

**24. Amendments/Relaxation/Interpretation of the Policy:** Government of Karnataka will have powers to amend/relax/interpret any of the provisions under this policy.

### Policy Implications on Departments

1	Karnataka Electricity Regulation Commission	<p>Concurrence to levy 5 Paise Green Cess on Industrial and Commercial power Consumers. About 11200 MU consumed by two sectors. Concurrence for Solar Tariff and Roof Top Net Metering.</p>
2	Finance Department, Government of Karnataka	<p>Concurrence for levy of green Cess on Industrial and Commercial Consumers</p> <p>Approval for creation of Akshaya Shakthi Nidhi.</p> <p>Akshaya Shakthi Nidhi operation modalities Transfer of proceeds at Rs 50 Crores annually.</p> <p>Energy Conservation Fund creation approval for Rs 5 Crores annually from Akshaya Shakthi Nidhi to Energy Conservation Fund.</p> <p>Budget to Energy Department for timely Renewable Energy Settlement and provision for Letter of Credit for the same.</p> <p>Approval for award scheme involving cash incentive from Akshaya Shakthi Nidhi for timely Renewable Energy project commissioning.</p> <p>Review of Value Added Tax (VAT) on Renewable Energy and Energy efficiency equipments and consumer goods sold in retail.</p> <p>Financial approval for Strengthening of Karnataka Renewable Energy Development Limited.</p>
3	Revenue Department, Government of Karnataka	<p>Expeditious Land Identification - Karnataka Renewable Energy Development Limited to co-ordinate. About 4500 Ha Revenue and government lands to be identified and reserved for Renewable Energy Projects under the Provisions of Section 71 of Land Revenue Act. (Renewable Energy project occupy 3 Ha per MW average. Total area required 12000 Ha, 30 % forest, 40 % Revenue and 30 % private lands).</p> <p>Expeditious NA approval</p> <p>Necessary amendment to the Karnataka Stamp &amp; Registration Act to revise Agreement registration fee.</p> <p>CSR co-ordination with Renewable Energy Projects and local administration.</p>



4	Industries Department (SEZ)	<p>Government of Karnataka Government of Karnataka approved the SEZ in Shimoga, Hassan, Bangalore, Udupi, and Mysore of 7440 Ha. 10 % of this is to be identified in the hills and barren lands, about 744 Ha. For Renewable Energy projects.</p> <p>Exclusive 2000 Ha SEZ to be set up for Renewable Energy and allied industry.</p> <p>All future proposed SEZs to provide 10 % land for RE Projects.</p> <p>Processing benefits to be extended under Industrial policy to the Renewable Energy Projects.</p>
5	Forest Department, Government of Karnataka	<p>To facilitate identification of 3600 Ha Forest lands free of National Parks and Sanctuary and process FC clearance and Karnataka Renewable Energy Development Limited will co-ordinate. NPV and CA implication Rs 400 crores.</p>
6	Irrigation Department, Government of Karnataka	<p>Necessary Approvals within time frame and land clearances, about 200 to 300 Has of irrigation lands.</p>
7	Energy Department, Government of Karnataka	<p>Connected Government orders, State Level Empowered Committee- Single Window agency, Inter Departmental Review Committee, Renewable Energy Vision Group</p> <p>PCKL nodal agency for Power Purchase Agreement.</p> <p>Letter of Credit to the Developer for realizing payment in scheduled period for the Renewable Energy power sold.</p> <p>All transactions between the Karnataka Power Transmission Company Limited./ distribution licensee and the producer involving wheeling or sale of power will be settled on monthly basis.</p> <p>Delay beyond a month @ State Bank of India short term Prime Lending Rate for delayed amount for actual period of delay.</p> <p>The Renewable Energy project successfully commissioned during the original agreement period will be awarded with a certificate of appreciation by the government and a cash incentive from Akshaya Shakthi Nidhi.</p> <p>Administrative approval for strengthening Karnataka Renewable Energy Development Limited.</p> <p>Grid Strengthening by Karnataka Power Transmission Company Limited.</p> <p>Approval to take up MW scale and Roof Top Solar projects.</p>

8

Labour Department,  
Government of Karnataka

To monitor employment provided. Renewable Energy projects to provide employment to the local people, in respect of all the unskilled/skilled staff and other non-executives required for execution, operation and maintenance of the Project. In regard to technical manpower like engineers and other executives, the Renewable Energy developer Company will give preference to the candidates conversant with customs, culture, language and dialect of Karnataka.

Sd/-

**(K.JAIRAJ)**

ADDITIONAL CHIEF SECRETARY  
TO GOVERNMENT,  
ENERGY DEPARTMENT





KARNATAKA RENEWABLE ENERGY DEVELOPMENT LTD.

No. 19, Maj.Gen.A D Loganathan  
INA Cross, Queen's Road  
Bangalore - 560052.

PHONE: 080-22282221 / 22207851 / 22208109

FAX: 080-22257399

WEBSITE: [www.kredl.kar.nic.in](http://www.kredl.kar.nic.in)

EMAIL: [kredlnce@yahoo.co.in](mailto:kredlnce@yahoo.co.in)