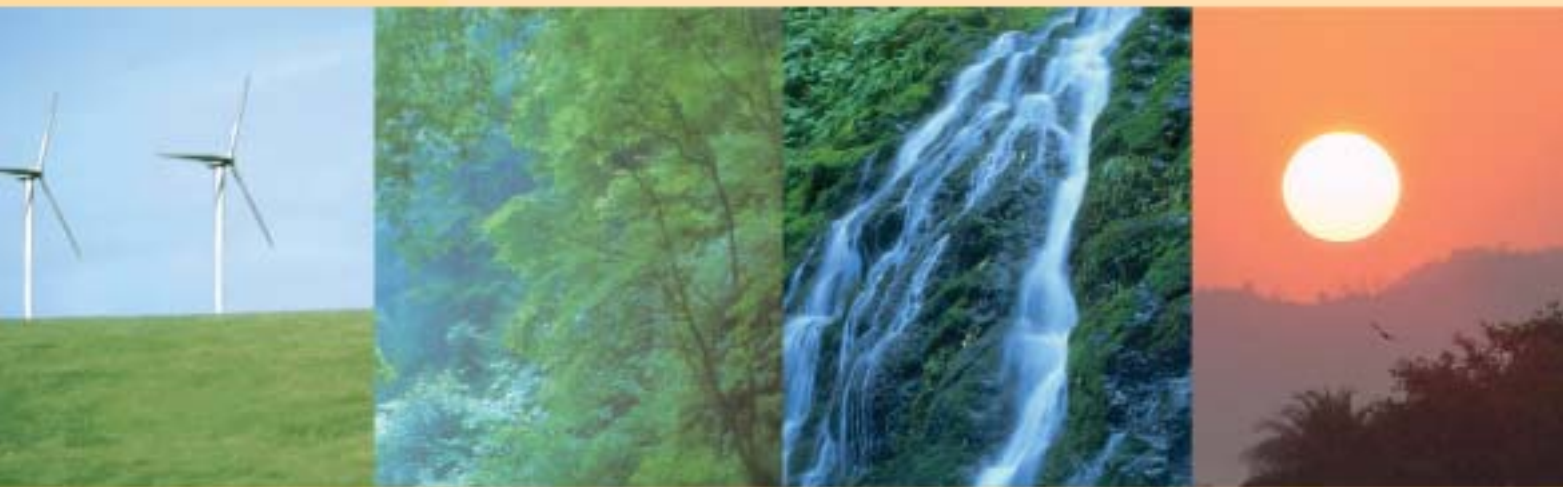


# ANNUAL ACTIVITY REPORT



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**ORISSA RENEWABLE ENERGY  
DEVELOPMENT AGENCY**

RENEWABLE ENERGY TECHNOLOGIES FOR SUSTAINABLE DEVELOPMENT

# OUR VISION

A large, glowing lightbulb is the central graphic. Inside the bulb, there is a composite image: a bright sun at the top, a misty mountain range in the middle, and a power plant with cooling towers at the bottom. The lightbulb is set against a light orange background.

- ▶ **10% of all new power capacity addition for the period upto 2012, to come from Renewable Energy(RE).**
- ▶ **Cover all Remote Un-electrified Villages through Renewable Energy by 2012.**
- ▶ **Accelerate the use of Renewable Energy in all sectors of the economy.**

### From the Chairman's desk....



Renewable energy holds the key to future energy, food and economic security. After two decades of research, development and pilot scale studies, the time has arrived to mainstream renewable energy. Several initiatives in this direction are being taken up world wide. Apart from solar, wind and hydro resources, biomass and bio-fuels are now emerging as highly promising resources both from energy and environment points of view. Mission - "power to all" can never be a success without these two.

Since it's inception in 1984, the Orissa Renewable Energy Development Agency has put in relentless efforts for the promotion and development of renewable energy resources in the state. The recent UNDP-DESI Development Project of Komna block and the vegetable oil based village power project of Danagbhuin village are some of the landmark achievements of this organisation.

While success needs replication, failure calls for more in-depth study. Therefore, proper documentation of all activities in this relatively new field of science is a must.

I am indeed very happy that OREDA has taken this initiative to document its activities and experiences and publish it in the shape of an annual report. It is surely going to benefit all those in the field of renewable energy.

I wish them all success.

A handwritten signature in black ink, appearing to read 'Sanjeeb Kumar Sahoo'.

(Sanjeeb Kumar Sahoo)



Orissa Renewable Energy Development Agency (OREDA), under the Department of Science & Technology, Government of Orissa is a Society constituted under Societies Registration Act-1860. The main objectives of this Agency in the development of new and renewable resources of energy are:

- (i) to encourage the development and accelerated utilisation of renewable energy sources wherever they are technically and economically viable;
- (ii) to improve the access to and availability of renewable, decentralised sources of energy particularly for the rural population;
- (iii) to contribute towards balanced rural and urban development as well as development of backward, hilly and tribal areas by enabling the use of locally available decentralised renewable energy sources and
- (iv) to reduce environmental degradation resulting from deforestation.

## Activities

The important activities which have been taken up and implemented by this Agency during 2005-06 are as follows:

### Battery Operated Vehicle

OREDA has successfully launched operation of two 10-seated battery operated vehicles at Nandankanan Zoological Park for Zoo rides. The vehicles are in operation and a major attraction for tourists. Revenue collected through sale of tickets for zoo rides during 2005-06 amounted to Rs. 1,12,560.00.



*Battery operated Vehicle in Nandankanan Zoological Park*

### Electrification through Bio-fuel

In order to demonstrate the viability of non-edible vegetable oils as engine fuels, OREDA has taken up a R&D Project with the financial assistance of Science & Technology Department, Government of Orissa.



*SVO run Engine in Dangabuini village*

Under this Project a retrofit has been developed for running all types of stationary IC Engines on vegetable oils in the Straight Vegetable Oil (SVO) mode. Dangabuini, a village in Ganjam district has been electrified by running a 3.5KW DG set with use of Karanja Oil which is available in large quantities in the locality.

### **Bio-Diesel from Non-edible Vegetable Oils**

For assessment of the potential of production of Bio-diesel from different locally available non-edible vegetable oils, OREDA has set up a 75 ltr./batch capacity Bio-diesel unit in its premises along with a laboratory for conducting various experiments in this regard.



*Bio-diesel production facility in OREDA*

A MOU has been signed with Ghumsur Forest Development Agency for supply of Karanja and other non-edible vegetable oils.

### **Small & Mini Micro Hydro Projects**

OREDA commissioned the second unit of 20 KW Micro Hydel Project at Badaghagara in Keonjhar district. 110 KW Mini Hydel Project at Sunei in Mayurbhanj district is being revived and is likely to be commissioned by May, 2006.

### **Wind Energy**

ORISSA has Wind Power potential of 1700 MW. Six potential sites have been identified in the State for harnessing this power. To begin with, 2-MW demonstration Wind Power Project is being set up at



*Wind Power Project*

Damanjodi in Koraput district to demonstrate techno-commercial feasibility of such project with a view to attract private investment in the sector. The detailed Project Report for the demonstration Wind Power Project at Damanjodi has been prepared by ITCOT, and submitted to MNES, Govt. of India for their approval and sanction.

***OREDA has entered into international associations with Global Village Energy Partnership(GVEP) and Renewable Energy & Energy Efficiency Partnership (REEEP).***

### **Village Energy Security Programme**

Village Energy Security Programme launched by MNES during 2005-06 is a unique initiative that addresses issues much beyond just power supply. It envisages meeting the total power requirement of a village in all sectors so as to ensure holistic development of the village. As biomass and bio-fuels have been identified as the major source of power under this programme villages laying in the fringes and within forests are more suitable for coverage under VESP.

In the very first year of its launching, MNES sanctioned ten VSEP projects in favour of Orissa, three of these will be implemented by the State Forest Department and the balance seven by five NGOs.

Work in Masipadar Village under Jeypore Forest Division and Mahishiakada Village in Dhenkanal District has already started. In Mahishiakada Village the VEC has already placed orders for Gasifier System and construction of shed under its direct supervision. The VEC has also placed orders for a Electrical materials for power transmission / distribution system. Similarly Bio-gas and Chulla installation is also about to begin in this village.

Similar action in other villages is also being taken up through the VECs under direct supervision of the respective implementing agencies.

It is expected to complete all the sanctioned projects as per schedule. Further it is proposed to take fifty more villages under VESP during the financial year 2006-07.

## Remote Village Electrification Programme (RVEP)

The Remote Village Electrification Programme (RVEP) entails electrification of Remote Un-electrified Census Villages through non-conventional energy sources. 6474 remote un-electrified census villages have been identified in the State by MNES. The scope of the programme is to cover



*Community Television in Kotrabeda village of Komna Block powered through Solar Power Plant*

- (i) Electrification of all un-electrified remote census villages by 2007.
- (ii) To provide electricity to all households of unelectrified remote census villages by 2012.

Detail Project Reports for more than 500 remote census villages for electrification through non conventional energy sources have been prepared and submitted to MNES, New Delhi for sanction.

## Renewable Energy Awareness / Education Park (REAP), Bhubaneswar



*Model of Renewable Energy Park in Bhubaneswar*

REAP, Bhubaneswar has been christened as "Biju Patnaik Energy Park". Estimated to be established at a total cost of Rs.96.50 lakhs. The Park would enter-alia, have the following objectives:

- (a) Create awareness about renewable energy and its application in daily life among all categories of people.
- (b) Educate common people about energy conservation practices.
- (c) Attract entrepreneurs towards renewable energy based business.
- (d) Provide students and researchers pertinent data about history and development of renewable energy resources and devices.

The Park is under an advanced stage of completion and is expected to be open for public in June, 2006.



## Energy from Waste

OREDA has been appointed as the Business Development Associate by H & UD Department, Government of Orissa for setting up of Municipal Solid Waste (MSW) based power project in the State. Expeditious steps are being taken to assist the H & UD Department to ground WTE Project for the twin cities of Cuttack and Bhubaneswar.

## Integrated Rural Energy Planning (IREP)

IREP was previously being implemented by taking a Block as a Unit of implementation. Now this has been modified and District is the Unit. During the current financial year, the programme was implemented in Koraput district with installation of Renewable Energy Saving devices, Bio-gas Plants, Improved Chullahs and SPV Lighting Systems.



*Solar Street Light*

## National Bio-gas and Manure Management Programme (NBMMP)

The National Bio-gas and Manure Management Programme (NBMMP) is a high priority Central Sector Scheme, and a part of the 20-Point Programme. It can be used for cooking and lighting purposes. It also provides rich organic manure. 1.96 lakhs Bio-gas Plants have been constructed in the State. During the year 2005-06 1500 Bio-gas plants have been constructed.

## Clean Development Mechanism (CDM) - Carbon Trading

OREDA has been declared the State level Agency of UNDP-MOEF for Development of Small Scale Clean Development Mechanism (CDM) Projects in the State. CDM is a mechanism under the Kyoto protocol that enables the Developing nations to trade certified Emission Reductions resulting from Renewable Energy, Energy efficiency and carbon sequestration projects to prospective buyers of the Developed world. The CDM cell of OREDA is actively involved in the preparation of Project Idea Notes and Project Designs Documents.

## Development of CDM Projects through Ecnoler International Inc.

Besides its own initiation for development of CDM projects under the frame work of MOEP-UNDP, OREDA has also signed a MOU with

Ecnoler International Inc. of Canada for development of small/large scale CDM Projects in the State. With Canadian support PDDs of a 2 MW Wind Projects, 4.5 MW Hydro projects and electrification of 1000 remote villages through different renewable energy resources are being developed.

### **Renewable Energy Policy**

*Policy guidelines on matters relating to promotional and fiscal incentives for power generation from Non-Conventional Energy Sources in the State. The main objectives of the Policy are to reduce dependency on conventional sources of power generation. Other objectives are,*

- (i) Protecting the environment,*
- (ii) Generation of employment on a large scale,*
- (iii) Generation of grid quality power from NRSE, so as to reduce dependence on conventional sources of power;*
- (iv) Encourage entrepreneurial investment in NRSE,*
- (v) Provide such rational fiscal and promotional incentives so as to provide conducive atmosphere to attract private investment.*

### **Consultancy, Training Programmes, Workshops etc.**

Improvement in Energy Efficiency has significant potential for reduction in energy consumption. Areas of energy efficiency can be obtained through proper energy audit. OREDA has created facility for providing energy audit service to Government/ Private/ Industrial establishments. OREDA has already received offers from five Government Organisations for undertaking the energy audit. With a view to provide accelerate renewable energy activities in the State, OREDA has taken up Consultancy services in the fields of Solar Passive Architecture, Energy Audit and Carbon Trading.

OREDA has undertaken the works of providing comprehensive architectural services for their new staff colony and Energy audit of Orissa Mining Corporation.

### **Workshop on Energy Efficiency Capacity Building**

OREDA conducted a 5-day training programme from 18.8.2005 to 22.8.2005 on Energy Efficiency capacity building at Bhubaneswar.

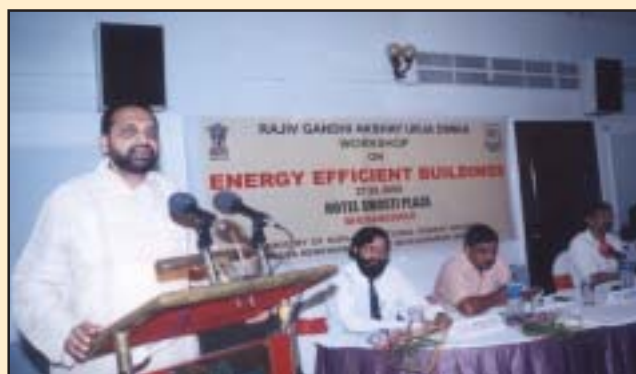
The programme was sponsored by IREDA and IRGSSA, New Delhi. The workshop was the first of its kind in Orissa wherein 35 participants from Government, PSUs, Educational Institutions and NGOs participated. They were imparted training on various techno-commercial aspects of adoption of energy efficiency measures.



*Training Programme on Energy Efficiency Capacity Building, Bhubaneswar*

### **Workshop on Energy Efficient Buildings**

A one-day workshop on “Energy Efficient Buildings” was conducted on 27.8.2005 at Bhubaneswar on the occasion of Akshaya Urja Diwas-2005. 70(Seventy) representatives from different Government Departments, PSUs, Educational Institutions and NGOs participated



*Workshop on Energy Efficient Buildings, Bhubaneswar*

in the seminar. Solar Passive Architecture, Photovoltaic, Efficient Energy management in Building. Clean Development Mechanism etc. were discussed by experts in the workshop.

### **Business Meet on Small Hydro Electric Projects and Wind Power Generation**

An one-day Business Meet on Small Hydro Electric Projects and Wind Power Generation was conducted on 10.01.2006 at Bhubaneswar in collaboration with IREDA, New Delhi and PDC, Bhubaneswar. About 100 participants from industries, business houses, Government Department, PSUs etc. had participated in the Business Meet. Experts on Hydro and Wind Energy, financial experts from IREDA discussed the various technical, commercial and implementation aspects of Hydro and Wind Projects in Orissa.

### **Regional Workshop on Remote Village Electrification**

In collaboration with MNES, a two-days Regional Workshop on Remote Village Electrification was organised by OREDA on 22nd &

23rd September, 2005 at Bhubaneswar. The workshop was attended by representatives from Jharkhand, State Government Departments and other Organisations.

OREDA has entered into international associations with Global Village Energy Partner and Renewable Energy (GVEP) & Energy Efficiency Partnership (REEEP).

### **UNDP-DESI Development Project:**



*Community Bio-Gas Plant in Mahulbhatta village of Komna block*

The UNDP-DESI Development Project that envisaged Demonstration of decentralised energy systems and capacity building to manage decentralised energy systems in the context of remote village electrification was completed in Komna block of Nuapada District during the year 2004. A total of twentyfive villages have been electrified through

different locally relevant renewable energy resources like solar, biomass, bio-gas etc. Though the equipment installed in the villages are covered under long-term maintenance contract, the day to day management



*Community Bio-Gas Plant in Dharbhhatta village of Komna block*



*Solar PV Power Plant in Salepada village of Komna Block*

of the project is being carried out by the respective village energy management committees under the aegis of the respective panchayat energy management committees. Each panchayat energy management committee has been given a corpus fund of Rs. 4 lakhs. The tariff collected from

the users and the in the interest accrued from corpus fund is used for the day to day management and upkeep of the project.

This institutional mechanism employed to ensure sustainability of the projects is being closely



*Solar home lighting system in Sunabeda village of Komna block*

observed by the Post management and follow up cell of OREDA at Komna block. The cell also assist the village and panchayat committees in carrying out their day to day works as and when required.

### Aditya Solar Shop

For easy accessibility of Renewable Energy Technologies (RET) to the public, 2 Aditya Solar Shops have been established. The Aditya Solar Shop at Berhampur is managed by OREDA. The total sale from the shop during 2005-06 was Rs. 11,67, 307/-

### SPV Water Pumping System

Till date 53 sets of SPV-WPS have been commissioned in Orissa. During 2005-06 one SPV water pumping System was installed at Aranga of Khurda District.



*Solar PV water pumping system*

### Biomass Gasifier Power Generation



*Biomass Gasifier system in Deodhara village of Komna block*

Deodhara Village in Komna Block of Nuapara District has been commissioned with a 10 KW Capacity Gasifier System for electrification of the village. Local youth have been trained to undertake the maintenance & upkeep of the system. 17 acres of land have been planted with fast growing trees for making the system sustainable.

### Awareness Generation, Publicity & Exhibition during the year 2005-06

During the year 2005-06, several steps were taken by OREDA to popularise Renewable Energy Devices, Non-Conventional Energy Processes and Appropriate Technologies. Video Films under Bio-Energy & Solar Energy Programmes have been prepared and telecast in the Regional Door Darshan Kendra in their sponsored programmes as



*OREDA stall in NCSC, Bhubaneswar*

well as in GRAMSAT PROGRAMME. Documentary Film of 10 minutes duration on step-by-step construction of Bio-gas and its benefits has also been prepared and telecast on GRAMSAT Evening Transmission Programme. Further, a 30-



OREDA stall in Adivasi Exhibition, Bhubaneswar



OREDA stall in Kharavela Mahostava, Bhubaneswar

second and a 10-second Bio-gas advertisement has been prepared and telecast in the Prime Time of two Regional Channels. The Radio Jingles prepared on Bio-gas Programme have been broadcast for a period of 30-days on Prime Time of All India Radio, Cuttack.

OREDA participated in several Melas & Festivals. Stalls to demonstrate NRSE Devices were put up at the Bali Yatra at Cuttack, Dhanu Yatra at Bargarh, Puri Beach Festival at Puri, National Kharvela Festival at Bhubaneswar and State level Annual Adivasi Exhibition at Bhubaneswar. OREDA also participated in several District level Exhibitions like Parab at Koraput, Keonjhar Mahostav at Keonjhar, Gajapati Utsav at Parlakhemundi & a district level Exhibition at Sundargarh. OREDA issued several advertisements in regional newspapers and periodicals to motivate the people on each and every NRSE device.



OREDA stall in Puri Beach Festival

### **Celebration of Rajiv Gandhi Akshaya Urja Diwas in Orissa**

The Rajiv Gandhi Akshaya Urja Diwas (RGAUD) was celebrated with pomp and grandeur. As a part of the celebration, a Mass Rally and an exhibition women football match was organised at Bhubaneswar. Painting,



Flag Off Ceremony of the Mass Rally

Essay Writing and Debate competitions were also organised.



Essay competition of RGAUD



Closing Ceremony of RGAUD



Felicitating of Scientist

## FUNDS RECEIVED FROM GOVT. OF INDIA / GOVT. OF ORISSA DURING THE YEAR 2005-2006

MNES, GOVERNMENT OF INDIA		(Rs. in Lakhs)
1.	Rajiv Gandhi Akhsya Urja Diwas	- 31.75
2.	Regional Review Meeting on RVEP	- 0.75
3.	District Advisory Committee	- 30.00
4.	NRSE Exhibition, 2005-06	- 2.87
5.	RVEP Training	- 4.75
6.	VESP at Suanpal Village	- 4.96
7.	VESP at Mahisiakda Village	- 8.90
8.	VESP at Siunni Village	- 11.50
9.	VESP at Jamugunda Village	- 10.75
10.	NBMMP (Bio-gas) 2003-2004	- 224.60
	<b>Total</b>	<b>- 330.83</b>
GOVERNMENT OF ORISSA		
Non-Plan		(Rs. in Lakhs)
1.	OREDA Headquarters Administration	- 17.00
State-Plan		
2.	OREDA Headquarters Administration	- 20.00
3.	Research and Development (State Level Energy Park)	- 20.00
4.	NBMMP (Bio-gas)	- 9.94
5.	IREP	- 15.00
6.	Research & Development Project operating stationary engines on SVOs.	- 1.10
	<b>Total</b>	<b>- 66.04</b>
	<b>Grand Total</b>	<b>- 83.04</b>





# Press Clippings



## OERC goes for greener pastures

Express News Service

**Bhubaneswar:** Taking a big eco-friendly step, the Orissa Electricity Regulatory Commission (OERC) has directed bulk supplier Gridco and distcos to purchase 200 million units (MUs) of power from renewable sources for 2006-07.

The unit cost of renewable energy should not exceed the highest generation cost of thermal stations of eastern region, the commission's order stated.

Hearing a petition filed by Greenpeace India, the commission observed that Electricity Act, 2003 calls for promotion of co-generation and generation of electricity from renewable sources. However, till now, no concrete proposal regarding setting up of power stations based on renewable sources has come to the commission.

However, the petitioner as well as the representatives of Orissa Renewable Energy Development Agency (OREDA) and Indian Renewable Energy Development Agency (IREDA) - respondents in the case - were of the opinion that once the commission fixes the quantum of energy to be purchased from green sources, developers will

### POWER-FUL MOVE

be interested to set up plants, OERC chairman D.C. Sahoo and member B.C. Jena observed.

The commission stated that tariff of the renewable energy will be determined in accordance with the Electricity Act, 2003 while the regulator will determine the cost of generation.

In fact, with this, Orissa becomes

one of the very few states to go in for green power promotion.

Karnataka Electricity Regulatory Commission's regulations issued last year stated that each distribution licensee shall purchase from renewable sources a minimum of 5 per cent and a maximum of 10 per cent of the electricity consumption targeted annually.

Maharashtra has also made it compulsory for the distcos to procure power from renewable sources but has not mentioned any specific percentage.

At present, Orissa generates 11,116 MUs of power and Greenpeace had maintained that if the it has to be augmented by 10 per cent, renewable sources have to be tapped. Since solar power is expensive and bio-mass is still unorganised, power from wind or small hydro sources can be harnessed.

# Press Clippings

**4** The New Indian Express, Bhubaneswar  
Tuesday, May 10, 2005

## Investment in renewable energy set to get a boost

Express News Service

Bhubaneswar, May 9: Sachin Tendulkar and Aishwarya Rai have invested in green energy projects in Maharashtra and Rajasthan. Can Orissa bring them here?

To put it in plain words, can Orissa go a step further and create a suitable environment for investment in renewable power?

The Orissa Electricity Regulatory Commission (OERC)'s recent order which was on Monday hailed by environmental NGO Geopre-ace as a 'considerable green-leap' has already paved the way by making it compulsory for bulk suppliers, discoms and trading companies to purchase 200 million units (MU) of renewable energy during 2006-07.

The OERC order, dated April 23, had come in response to a petition filed by the environment NGO, Geopre, in fact, is one of the few states to have taken such an eco-friendly step.

It is time Orissa Renewable Energy Development Agency (OREDA) started taking initiatives to implement RE projects in the State by ensuring the right kind of invest-

ment climate. Director, Campaigns of Geopre-ace, Shalendra Yeshwant told mediapersons here on Monday.

Last year, the State could not avail its 600 crore from the Centre as RE projects did not materialise despite availability of funds, he added.

Since Orissa currently generates one MU unit energy from renewable sources, the direction to purchase 200 MU is a considerable green-leap. Climate and Energy Campaigner K. Srinivas said adding, 'the State can choose a combination of 30 mega watt (MW) wind power, a 20 MW small hydro and 30 MW from bio-gas plants.'

This would entail an investment of about Rs 125 crore which, in ecological terms, translates into reduction of 225 metric tonnes of carbon dioxide emission into the atmosphere per year in Orissa alone.

Besides, every unit of RE saves Rs 5.5 on health and environment heads which means 200 MU would save Rs 110 crore and create at least 300 jobs, Yeshwant said. Orissa has a potential to generate 1000 MW wind power and 600 MW biomass energy besides solar energy.

## Alternative bio-fuel to replace diesel

TIMES NEWS NETWORK

**Bhubaneswar:** There's good news for those who own diesel-run vehicles in Orissa. The state government has recently endorsed a project to produce bio-diesel, an eco-friendly substitute that will cost Rs 16 per litre.

Minister of state for science and technology Rabi Narayan Nanda has announced that all vehicles of his department will use bio-diesel from October 20 onwards.

This development comes in the wake of the Orissa Renewable Energy Development Agency (OREDA), a state-owned enterprise that has been successfully producing bio-diesel at a mini plant set up on its premises here. At present, the plant is producing about 600 litres of bio-diesel from non-edible vegetable seeds like "polang" and "karanj".

According to chief executive of OREDA, Ajit Bharthuar, bio-diesel produced by the enterprise would be used on an experimental basis by the science and technology department. "Soon, we will make an attempt to launch the product in the market," he added.

He said a mini plant to produce bio-diesel could be set up with an investment of nearly Rs 2.5 lakh.

## ସମ୍ବାଦ

ଅଗଷ୍ଟ, ୨୦୦୫

# ଅକ୍ଷୟ ଭର୍ଦ୍ଦୀ ବିଦ୍ୟ ପାଳନ ପ୍ରସ୍ତୁତି କମିଟି ବୈଠକ

ବୁବନେଶ୍ୱର, ୮୮ (ଇନିପ) : ଅଗଷ୍ଟ ୭୦ ତାରିଖ ରାତାବ ପାଣି ଅକ୍ଷୟ ଭର୍ଦ୍ଦୀ ବିଦ୍ୟ ପାଳନ କରାଯିବ । ଏପିପାଇଁ ତିନି ତାରିଖ ଦିନ ଚଳାଉଥିବ, ବିଜ୍ଞାନ ଓ ଜୀବିଗଣ୍ଡା ଶାନ୍ତିମୟୀ ବିଦ୍ୟାଳୟରେ ଏକ ପ୍ରସ୍ତୁତି କମିଟି ବୈଠକ ଅନୁଷ୍ଠିତ ହୋଇଥିଲା । ଏହି ବିଦ୍ୟ ପାଳନରେ ଅକ୍ଷୟ ଭର୍ଦ୍ଦୀ ଓ ମାତୃତ୍ୱର ଆୟୋଜନ, ଚର୍ଚ୍ଚ, ସଦନା, ଭବନ ପ୍ରତିଷ୍ଠାପନାମାନ କରାଯାଇ କୃତୀ ପ୍ରତିଷ୍ଠାପନାକୁ ପ୍ରୋତ୍ସାହିତ କରାଯିବ । ଏହାଛଡ଼ା ତିନିତଳ ବିଜ୍ଞାନ ବିଭାଗ ମଧ୍ୟ ପ୍ରସ୍ତୁତ କରାଯିବ । ଅକ୍ଷୟ ଭର୍ଦ୍ଦୀ ବିଦ୍ୟ ପାଳନ ପ୍ରସ୍ତୁତି କରାଯିବା ପ୍ରତ୍ୟେକ ସଦନାରେ ଏକ ସାଧାରଣ ସଭା ଆୟୋଜନ କରାଯାଉଛି ।

ଏହି ବୈଠକରେ ପ୍ରତ୍ୟେକ ଓ ଭୋଦତମନ ମଧ୍ୟ ସେତାଣି କେବଳ ନିର୍ଦ୍ଦେଶ ଦିଏ ଯେ ପ୍ରସ୍ତୁତି, ମୁଖ ନିର୍ଦ୍ଦେଶ କେବଳ ତତ୍ତା, ଓ ରୋଡ଼ୀର ମୁଖ ନିର୍ଦ୍ଦେଶ ଅତି ଉତ୍ସାହ, ବିଜ୍ଞାନ ଓ ଜୀବିଗଣ୍ଡା ବିଭାଗ ଅତିସ୍ଥିତି କାହିଁକି କାହିଁକି ପ୍ରମୁଖ କେତେକ ଆଲୋଚନାରେ ଅତି ପ୍ରସ୍ତୁତି କରାଯିବ ।

# ଆରଭିଇପି ଯୋଜନାରେ ରାଜ୍ୟର ହଜାରେ ଗାଁ ସାମିଲ ହେବ

ବୁବନେଶ୍ୱର, ୮୮ (ଇନିପ) : ଅଗଷ୍ଟ ୭୦ ତାରିଖ ରାତାବ ପାଣି ଅକ୍ଷୟ ଭର୍ଦ୍ଦୀ ବିଦ୍ୟ ପାଳନ କରାଯିବ । ଏପିପାଇଁ ତିନି ତାରିଖ ଦିନ ଚଳାଉଥିବ, ବିଜ୍ଞାନ ଓ ଜୀବିଗଣ୍ଡା ଶାନ୍ତିମୟୀ ବିଦ୍ୟାଳୟରେ ଏକ ପ୍ରସ୍ତୁତି କମିଟି ବୈଠକ ଅନୁଷ୍ଠିତ ହୋଇଥିଲା । ଏହି ବିଦ୍ୟ ପାଳନରେ ଅକ୍ଷୟ ଭର୍ଦ୍ଦୀ ଓ ମାତୃତ୍ୱର ଆୟୋଜନ, ଚର୍ଚ୍ଚ, ସଦନା, ଭବନ ପ୍ରତିଷ୍ଠାପନାମାନ କରାଯାଇ କୃତୀ ପ୍ରତିଷ୍ଠାପନାକୁ ପ୍ରୋତ୍ସାହିତ କରାଯିବ । ଏହାଛଡ଼ା ତିନିତଳ ବିଜ୍ଞାନ ବିଭାଗ ମଧ୍ୟ ପ୍ରସ୍ତୁତ କରାଯିବ । ଅକ୍ଷୟ ଭର୍ଦ୍ଦୀ ବିଦ୍ୟ ପାଳନ ପ୍ରସ୍ତୁତି କରାଯିବା ପ୍ରତ୍ୟେକ ସଦନାରେ ଏକ ସାଧାରଣ ସଭା ଆୟୋଜନ କରାଯାଉଛି ।

# Press Clippings

The New Indian Express  
Bhubaneswar

Thursday  
June 23, 2005

## A smooth ride on battery-run vehicles Nandankanan to introduce non-polluting transport from mid-July

By SOMNATH SAMANT

Bhubaneswar, June 22: The big cats and fellow inhabitants at Nandankanan Zoological Park, will soon relish a pollution-free and tranquil ambience. With battery-operated vehicles to be introduced shortly, the zoo can be made cleaner and greener.

These noiseless vehicles will be introduced by the Orissa Renewable Energy Development Agency (OREDA) in collaboration with the zoo authorities to ferry visitors inside the zoo. Contemporary in looks, the nine-seater vehicles have been manufactured by Mahindra and Mahindra. OREDA will provide the operating staff. Chief Executive of OREDA Aju Bhanthuar said in the initial stage, two vehicles will be pressed into service. More will be added if these run successfully.

Each year the zoo, spread over an area of 1.66 sq km, draws around 10 lakh visitors. Visitors are taken around in buses for viewing the animals including the tiger and lion safaris. But this causes noise and air pollution which the animals living in wild are not accustomed to. Bhanthuar said the vehicles will prove useful to the elderly and little ones who get tired covering the zoo on foot.

Animal parks across India including the Delhi zoo have pressed such vehicles into service for maintaining pollution-free environment and providing comfort to the visitors.

At present a wide range of battery-operated vehicles are being promoted by the Ministry of



A prototype battery-run vehicle that will be used for a non-polluting ride—Express

Non-Conventional Energy Sources:

The range includes one-seater passenger vehicles as well as two and four-seater cars.

These vehicles have been plying on Indian roads for the last 10 to 12 years and their performance is time-tested.

Bhanthuar noted that entry to the Taj Mahal is allowed only on such vehicles for visitors, who refuse to walk one km distance by foot.

Chief Minister Naveen Patnaik is slated to inaugurate the service at the zoo during mid-July.

୧।୫।୨୦୦୫, ଭୁବନେଶ୍ୱର

ସମସ୍ତ

### ଗ୍ରୀଡ଼କୋକୁ ଓଇଆରସିର ନିର୍ଦ୍ଦେଶ : ଅକ୍ଷୟ ଶକ୍ତି କିଣ

ଭୁବନେଶ୍ୱର, ୩୦/୪ (ସଂପ୍ର): ଅକ୍ଷୟ ଶକ୍ତିର ବିକାଶ ପାଇଁ ଗାଜପାଟଣା ବିଦ୍ୟୁତ୍ ନିୟାମକ ଆୟୋଗ ଗ୍ରୀଡ଼କୋକୁ ଏବଂ ଗୁରୁପୁରୁଷ ନିର୍ଦ୍ଦେଶ ଦେଇଛି । ଏହି ନିର୍ଦ୍ଦେଶରେ ଆୟୋଗ ୨୦୦୫-୦୬ ପ୍ରତି ବର୍ଷ ପାଇଁ ୨୦୦ ମିଲିୟନ ପୁରୁଷ ବିଦ୍ୟୁତ୍ ଶକ୍ତି ବିକିଳ ଅକ୍ଷୟ ଶକ୍ତି ବିକାଶ ସଂଗଠନକୁ ଗାଜପାଟଣା ବିଦ୍ୟୁତ୍ ନିୟାମକ ଆୟୋଗର ଅଧିକାରୀଙ୍କୁ ନିର୍ଦ୍ଦେଶ ଦେଇଛି । ବିଦ୍ୟୁତ୍ ଆୟ ୨୦୦୦ ଲକ୍ଷ ଟଙ୍କା ଏହି ନିର୍ଦ୍ଦେଶ ବିଧିବଦ୍ଧରେ ମଧ୍ୟ ଏଥିରେ ସ୍ଥିର

ଧର୍ମୀ ବ୍ୟବସାୟ ଏକ ବେଶ୍ ବଡ଼ ବ୍ୟୟ ଉପଯୋଗୀ । ଆୟୋଗ ଧାରା ୮.୬ (୧)ର ଅନୁଯାୟୀ ଗାଜପାଟଣା ବିଦ୍ୟୁତ୍ ନିୟାମକ ଆୟୋଗର ଅଧିକାରୀଙ୍କୁ ନିର୍ଦ୍ଦେଶ ଦେଇଛି । ଏହି ନିର୍ଦ୍ଦେଶ ମଧ୍ୟ ୨.୫ ପ୍ରତିଶତ ବ୍ୟୟ ବିଦ୍ୟୁତ୍ ନିୟାମକ ଆୟୋଗର ଏହି ନିର୍ଦ୍ଦେଶ ଅନୁଯାୟୀ ଗାଜପାଟଣା ବିଦ୍ୟୁତ୍ ନିୟାମକ ଆୟୋଗର ଅଧିକାରୀଙ୍କୁ ନିର୍ଦ୍ଦେଶ ଦେଇଛି । ଏହି ନିର୍ଦ୍ଦେଶ ଅନୁଯାୟୀ ଗାଜପାଟଣା ବିଦ୍ୟୁତ୍ ନିୟାମକ ଆୟୋଗର ଅଧିକାରୀଙ୍କୁ ନିର୍ଦ୍ଦେଶ ଦେଇଛି ।

କିନ୍ତୁ ଏହି ନିର୍ଦ୍ଦେଶରେ ଗାଜପାଟଣା ବିଦ୍ୟୁତ୍ ନିୟାମକ ଆୟୋଗର ଅଧିକାରୀଙ୍କୁ ନିର୍ଦ୍ଦେଶ ଦେଇଛି । ଏହି ନିର୍ଦ୍ଦେଶ ଅନୁଯାୟୀ ଗାଜପାଟଣା ବିଦ୍ୟୁତ୍ ନିୟାମକ ଆୟୋଗର ଅଧିକାରୀଙ୍କୁ ନିର୍ଦ୍ଦେଶ ଦେଇଛି । ଏହି ନିର୍ଦ୍ଦେଶ ଅନୁଯାୟୀ ଗାଜପାଟଣା ବିଦ୍ୟୁତ୍ ନିୟାମକ ଆୟୋଗର ଅଧିକାରୀଙ୍କୁ ନିର୍ଦ୍ଦେଶ ଦେଇଛି ।

### ଗ୍ରୀଡ଼କୋକୁ... (୧ମ ପୃଷ୍ଠାକୁ)

ନିର୍ଦ୍ଦେଶ ଦେଇଛି । ଏହାପରେ ଧାରା ୬.୨ (୧) ଅନୁଯାୟୀ ଗାଜପାଟଣା ବିଦ୍ୟୁତ୍ ନିୟାମକ ଆୟୋଗର ଅଧିକାରୀଙ୍କୁ ନିର୍ଦ୍ଦେଶ ଦେଇଛି । ଏହି ନିର୍ଦ୍ଦେଶ ଅନୁଯାୟୀ ଗାଜପାଟଣା ବିଦ୍ୟୁତ୍ ନିୟାମକ ଆୟୋଗର ଅଧିକାରୀଙ୍କୁ ନିର୍ଦ୍ଦେଶ ଦେଇଛି । ଏହି ନିର୍ଦ୍ଦେଶ ଅନୁଯାୟୀ ଗାଜପାଟଣା ବିଦ୍ୟୁତ୍ ନିୟାମକ ଆୟୋଗର ଅଧିକାରୀଙ୍କୁ ନିର୍ଦ୍ଦେଶ ଦେଇଛି ।

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### Oreda to market bio-diesel soon

Bhubaneswar, Oct 11: The Orissa Renewable Energy Development Agency (Oreda)'s research on bio-diesel production has become successful.

The State-owned agency is producing about 600 litre bio-diesel everyday and will soon launch it in the market. The bio-fuel will be made available at a price of Rs 16 a litre which will be way cheaper than diesel. What's more, it will be eco-friendly.

The mileage and speed of diesel-run vehicles will stay unchanged when bio-fuel is used, Oreda sources claimed.

In fact, Science and Technology Minister B.N Nanda has decided that all the official vehicles of the department will use bio-diesel from October 20.

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## Press Clippings

The New Indian Express  
Bhubaneswar

Friday,  
March 24, 2006

### Reaching beyond Komna

# MNES to light up more tribal villages in State

Express News Service

Bhubaneswar, March 23: Buoyed by its Komna experience, where renewable energy could illuminate a habitation of 206 Chutkia-Bhunjia tribals in Nuapada, the State Government is all set to spread the light to more villages where it has been a dream for ages.

Ministry of Non-Conventional Energy Sources (MNES), which had sanctioned the solar photo voltaic (SPV) project for Komna, has sanctioned another 14 projects to Orissa under Village Energy Security Programme.

Significantly, MNES granted a total of 100 such projects in the country, of which, Orissa has managed to grab a sizeable number.

The projects would be grounded from April. The first one will be unveiled at Masipadar village under Jeypore block of Koraput district.

In fact, these projects have been distributed to most of the tribal district pockets including Koraput and Keonjhar. This time bio-mass gasifiers would be installed at the project sites instead of

SPV plant. The Orissa Renewable Energy Development Agency (OREDA) which is implementing the programme in the State found that gasifiers encounter less operational problems.

In all 14 villages, 20 KW gasifiers (two 10 KW units) would be installed, each of which can light up at least 100 households.

"But lighting up these remote habitations is not the only objective. We are linking livelihood activities such as irrigation and rice hullers with energy security," said Chief Executive, OREDA Ajit Bharthuar. To implement these projects, MNES would extend financial assistance, while a set of local agencies would participate.

At Jeypore, Forest Department will be the implementing agency for the Masipadar project whereas a number of NGOs are evincing interest.

The project cost would be shared in a ratio of 90:10 by the MNES and implementing agencies. In fact, all these 14 projects would be carried out on a pilot basis, while their performance will decide more support in the future from MNES.



THE PIONEER, BHUBANESWAR

THURSDAY JANUARY 12, 2006

## Power first, industrialisation later

Pioneer News Service

Bhubaneswar

THERE IS an urgent need to ensure sustainable power supply in Orissa to support the upcoming industrial revolution. The energy requirement of the State is estimated to leapfrog to 19,185 million units by the end of 2013 from the current requirement of 13,143 million units. The Orissa Renewable Energy Development Agency (OREDA) is paving the way for energy independence by tapping various sources of

renewable energy.

OREDA recently organised a business meet to promote entrepreneurship by developing small hydropower projects and wind farms in the State. Experts provided technical know-how as well as financial policy related information to set up small hydropower projects with a capacity of up to 25 MW in the most by utilising water from small streams, rivulets, canal falls and wind energy.

The small hydro projects have many advantages like limited investment, shorter gestation period, environment friendly, having mini-

mum CO<sub>2</sub> emission and suited for remote areas. They are also more profitable than large hydropower projects.

Chairman of Project Development Consultant of OREDA, KC Mohaspaira urged the Government to make necessary changes in the energy policy like fixing the cost of energy at Rs 2.25 per unit, providing banking facility, exempting water cess and liberal debt equity ratio.

Apart from unlimited solar energy, the State has about 3000 MW of other renewable energy resources such as 350 MW small hydro, 1800 MW

of wind energy, 350 MW of biomass energy and 28.50 MW of waste energy.

"OREDA has identified more than 18 sites for small hydro projects having a capacity of 25 MW. Recently OREDA has taken up the revival of two projects at Sunel and Badaghagra," informed joint director of Oreda Ajit Bharthuar.

Lauding the efforts of OREDA for using renewable energy, Minister for Science and Technology Babi Narayana Nanda said necessary amendments would be made at the policy level to make it more people friendly.



## Press Clippings

Thursday,  
June 30, 2005

The New Indian Express  
Bhubaneswar **3**

### New energy lights up this village

By Sangeeta Sarangi

Bhubaneswar, June 29: On the face of it, Deodhara village under Korina block of Nuapada district presents a picture of poverty, hunger and starvation. But unknown to many, this sleepy nondescript hamlet is today scripting a success story in the non-conventional energy sector.

The credit goes to biomass gasifier, an indigenous energy producing generator developed by the Energy Research Institute, Mumbai. The moment the unit is switched on, the village springs to life with its houses and roads illuminated. At 6 p.m. when the village is lit, elders gather in the brightly illuminated community centre for evening rendezvous while mothers and their little ones gather in front of the TV set to catch the popular programmes.

The technology is robust, thirty times cheaper than solar energy, entails less maintenance cost and can be augmented at any given time, said Ajit Bhanuwar, Chief Executive of Orissa Renewable Energy Development Agency, the project executing agency.

The unit was set up under UNDP funded rural electrification programme. Titled 'decentralised energy system for integrated development of Korina block', the programme was launched in 2000 under the County Cooperation Framework I.

It aims at providing affordable grid-quality power to the backward villages of the block, he added. Biomass gasifier has the potential to produce 10 KW of power per day. It burns twigs in a controlled fashion to produce carbon monoxide and hydrogen, which when blend together produce gas for running the generator.

The generator is fed with one kg of wood per hour to produce one kilo watt energy per hour. As the village is lit for six hours in the evening, roughly 60 kg of wood is consumed per day. Thanks to the technology, he said, all the 60 families are enjoying quality power without fluctuation and transmission losses. The extra power generated is being used for irrigation. Though each villager sheds out Rs 30 per month, Bhanuwar said, the benefits accrued has far exceeded the cost burden.

Villagers have been trained to operate and maintain the generator. Its establishment has also led to afforestation in the periphery. Buoyed by its success, OREDA has selected three more villages for establishment of biomass gasifier under the Village Energy Security Programme. The programme will be taken up by the Ministry of Non-Conventional Energy Sources.

The New Sunday Express  
Bhubaneswar **3**

### 1st bio-tech park coming up in City

Bhubaneswar: The State's first bio-technology park will come up in the City next month and this will give a big boost to research and development in the sector.

Minister of State for Science and Technology Rabi Narayan Nanda made this announcement on Saturday while replying to a question from Raghunath Mohanty (BJD). A bio-diesel policy is in finalisation stage and will be announced shortly, the Minister said. At present, the Science and Technology Department is holding talks with other administrative departments like Forest, Agriculture and Cooperation for large-scale plantation of jatropha and other oil seeds for bio-diesel production.

A pilot project on jatropha cultivation has been launched in KBK districts by Orissa Renewable Energy Development Agency (OREDA). Tribal farmers in the Integrated Tribal Development Agency (ITDA) and Modified Area Development Agency (MADA) areas are being encouraged to go for large-scale jatropha cultivation. The Planning Commission is encouraging all the States to go for bio-diesel as an alternative for petrol and diesel. In the first phase, OREDA has set up a 600-litre per day capacity bio-diesel extraction plant and all vehicles used by the agency are running on bio-diesel. If the need arises, another extraction plant will be set up. The National Oil Seeds and Vegetable Oil Foods Limited is providing subsidy for jatropha cultivation and other vegetable oil seeds, he said. He further said the State Government is in the process of holding negotiations with Indian Oil Corporation (IOC) and Indian Railways for marketing of bio-diesel. •ENS

## DR. WOLF JOHNSSEN VISITS OREDA



*Dr. Wolf Johnssen, Chief Scientist, Electro Farming, Germany and his colleague Mr. Yannis Gagjanis(left) making presentation before Mr. P. K. Nayak, IAS (Secretary, Science & Technology Department, Govt. of Orissa) on the prospect of Installation of the prototype in Orissa while visiting OREDA on 25th Sept., 2005.*

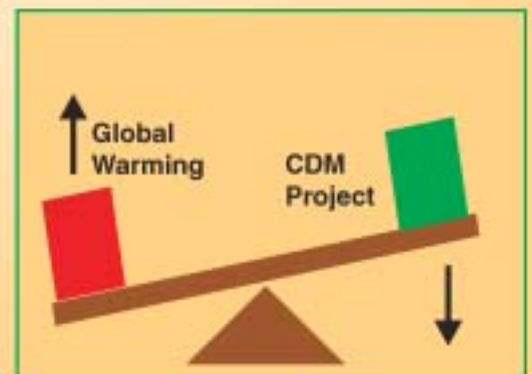


*Officials of OREDA and Science and Technology Department, Government of Orissa, attending the presentation.*

## *Renewable Energy Technologies for Sustainable Development*



OREDA is the designated State Level Agency of UNDP-MOEF for Development of Clean Development Mechanism (CDM) Projects in the State. CDM is a mechanism under the *Kyoto Protocol* that enables the Developing Nations to trade Certified Emission Reductions resulting from Renewable Energy, Energy Efficiency and Carbon Sequestration Projects to prospective buyers of the Developed World.



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