



# ENVIS

## Newsletter



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# ENERGY

Through the lens of

# CLIMATE CHANGE





Fossil fuels — coal, petroleum, and natural gas — are our main sources of energy, producing the vast majority of fuel, electricity, and heat used by people across the globe. In 2005 a whopping 86 percent of energy used worldwide came from fossil fuel combustion. Unfortunately fossil fuels are also the primary culprit behind climate change. And while natural processes can absorb some of this CO<sub>2</sub>, an estimated 4.1 billion metric tons of it is added to our atmosphere each year (CBD 2014). Thus, annual total greenhouse gas (GHG) emissions arising from the global energy supply sector continue to increase. Combustion of fossil fuels continues to dominate a global energy market that is striving to meet the ever-increasing demand for heat, electricity and transport fuels. GHG emissions from fossil fuels have increased each year, despite greater deployment of low- and zero-carbon technologies (particularly those utilizing renewable energy); the implementation of various policy support mechanisms by many states and countries; the advent of carbon trading in some regions, and a substantial increase in world energy commodity prices. Without the near-term introduction of supportive and effective policy actions by governments, energy-related GHG emissions, mainly from fossil fuel combustion, are projected to rise by over 50%. Thus, Mitigation has therefore become even more challenging (IPCC, 2007). Therefore, policies will need to be region specific and both energy and non-energy co-benefits should be taken into account. Effective policies supporting energy-supply technology development

and deployment are crucial to the uptake of low-carbon emission systems and should be regionally specific. Policies in several countries have resulted in the successful implementation of renewable energy systems to give proven benefits linked with energy access, distributed energy, health, equity and sustainable development. In short, the world is not on course to achieve a sustainable energy future. The global energy supply will continue to be dominated by fossil fuels for several decades. To reduce the resultant GHG emissions will require a transition to zero- and low-carbon technologies. This can happen over time as business opportunities and co-benefits are identified. However, more rapid deployment of zero- and low-carbon technologies will require policy intervention with respect to the complex and interrelated issues of: security of energy supply; removal of structural advantages for fossil fuels; minimizing related environmental impacts, and achieving the goals for sustainable development (IPCC, 2007).

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# CLIMATE CHANGE AND ENERGY: INSIGHTS AND INITIATIVES FROM THE STATE OF TAMIL NADU

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Scientific studies have repeatedly shown the need to prevent the increase in global emissions so that the planet's average temperature does not exceed 2° C over pre-industrial levels (Singh 2011). For the case of India, the world's fourth largest economy and fifth largest greenhouse gas (GHG) emitter, accounting for about 5% of global emissions. Importantly, India's emissions increased 65% between 1990 and 2005 and are projected to grow another 70% by 2020 (IEA, 2007). This rapid growth and the accompanying increase in GHG raise national concerns about climate change. As it develops, India is moving to reduce emissions intensity to protect its people and environment (NRDC, 2014) and therefore addressing "Climate Change and Energy" stands as one of the prime concern for India.

In this purview, on June 30, 2008, India has released its first National Action Plan on Climate Change (NAPCC) outlining existing and future policies and programs addressing climate mitigation and adaptation. The plan identifies eight core "national missions" which includes priority areas, such as energy efficiency and solar initiatives (C2ES, 2008). Nevertheless, India has taken significant steps to address the energy security from the lens of climate change. Some of the potential steps taken are enabling (i) access to clean energy and (ii) enhancing sustainable development and mitigating climate change. It includes (a) patterns of consumption, (b) increased industrial energy efficiency, (c) policies to promote energy efficiency and renewable energy e.g. electricity from renewable, enhancing efficiency of power plants, introduction of labeling programme for appliances, energy conservation building code,

energy audits of large industrial consumers, (d) accelerated introduction of clean energy technologies through the Clean Development Mechanism (CDM) (GoI, 2007).

However, for the case of Tamil Nadu State, it has seen a substantial growth in its population coupled with rapid urbanization and industrialization resulted in a fairly steep demand for electricity and energy in the State. Despite of these daunting challenges, Tamil Nadu is undertaking a range of sectoral initiatives that are climate friendly and the State plans to continue to foster such initiatives by providing an enabling environment. In par with NAPCC, Tamil Nadu has prepared its State Action Plan on Climate Change (SAPCC) addressing various issues of climate change including "Power and Renewable Energy". It articulates (a) overview and status of power and renewable energy of Tamil Nadu (electricity consumption pattern, transmission and distribution losses, renewable energy trends, rural electrification, energy efficiency and conservation, other energy use), (b) institutional mechanisms governing the energy sector, (c) key current concerns of energy sector, (d) climate change energy demand and generation concerns (energy consumption and heat island effect, water and hydropower and generation, forests and fuel wood use, Irrigation and electricity use, adequacies to address the challenges of climate change from the lens of power and renewable energy) (e) greening the energy sector (Renewable Energy Potential) in the state of Tamil Nadu and renewable energy development plans; enhanced energy conservation.



Thus, from the lens of climate change, it is imperative to state that Tamil Nadu has a high level of industrialization, with high rate of domestic consumption and any negative impact on generation or availability of electricity to the State can affect industries. Further, due to successive failure of monsoons, farmers have increased their reliance on ground water for irrigation. In a climate change constrained world and with increasing depletion of ground water resources, farmers would have to resort to using high horse power irrigation pump sets leading to an increase in energy usage. In addition, rapid growth of urban centres could have an impact on urban domestic consumption of electricity and this would require strengthening of electricity distribution network in urban centers. However, the State has very high renewable energy potential and is tapping it. The State has also been implementing energy efficiency and conservation measures to the maximum extent. Tamil Nadu generates approximately 7500 MW of wind energy which constitutes 40% of the country's total wind installed capacity.

In this context, the SAPCC of Tamil Nadu envisages following key strategies to address climate concerns for the energy sector. The key strategies include (i) promoting Energy efficiency and sustainable use of electricity at all levels and categories of usage (such as identifying and converting the lighting devices in all key Government buildings to energy efficient lighting by 2015; in a phased wise manner, converting all street and public lighting to LED Lighting; energy auditing of all Government buildings) (ii) promotion of building star rating systems and incorporate building bye-laws for energy conservation; (iii) program for awareness building on BEE star labelled appliances; (iv) initiating and Implementing demo projects on energy efficiency in commercial sector; (v) stringent implementation of Demand Side Management across all key energy sectors; (vi) investment to strengthen grid and smarten the Grid. This would also include imposing norms on Independent Power

Producers; (vii) particularly for large wind farms of 10 MW and above to a accuracy of 70 percent; (viii) take a lead to setup as upload dispatch centre for renewable energy generation; (ix) reducing the dependence on Central Grid of Energy Supply by augmenting own clean electricity generation capacities; (x) in addition to promoting wind, proactive policies to promote solar generation as well; (xi) exploring possibilities of decentralized renewable; (xii) Increasing de-centralized energy applications; (xiii) Ensuring energy access for all (SAPCC 2013).

Thus, realizing the urgency of climate change challenges for energy sector, Government of Tamil Nadu has taken appropriate interventions prudently. The strategic advance of Government of Tamil Nadu to address this issue i.e. "climate change and energy" for the state of Tamil Nadu foresees a systematic move towards sustainable development. Importantly, it ensure the approach of Tamil Nadu "towards balanced growth and resilient" state to address the challenges and demand of energy from the lens of climate change.



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## EVENTS

### Wildlife week celebrations at the CSI Monahan Girls Hr. Sec. School, Chennai

Wildlife week celebrations were organized at the CSI Monahan Girls Hr. Sec. School, Royapettah, Chennai in collaboration with the Department of Environment, Government of Tamil Nadu. Dr. H. Mallaeshappa I.F.S., Director, Department of Environment inaugurated the programme and emphasized the students' role in imparting environmental awareness to the society. Officials of the Department of



Environment spoke on the various initiatives taken by the Government of Tamil Nadu to conserve Bio diversity. A total of 325 students from NGC / Eco clubs of 115 schools from Chennai participated in the Green day Competitions (Essay, Oratorical and Painting) on various titles related with Wildlife Week. Dr. Jayanthi, M., I.F.S., Additional Director, Department of Environment, distributed the prizes to the winners of various competitions.



### Two day exhibition “FARMVILLE” at SBOA school, Chennai

The best way to attempt to bring about a change in the attitudes in the society is through children. With this realisation SBOA Matriculation Higher Secondary School in Anna Nagar conducted an awareness exhibition titled Farmville '14. The exhibition involved setting up a model farm with a potter, cows, grass, ducks and an agriculture exhibition, transforming the school into a mini farm on 18<sup>th</sup>



November 2014. This was done to instill the importance of sustainable agriculture for the future. Dr. Jayanthi M., I.F.S., Additional Director, Department of Environment, Government of Tamil Nadu inaugurated the programme. Staff of the ENVIS Centre also participated in the programme and created awareness.



## One day training programme for the NGC teacher co-ordinators

The one day training programmes for the NGC teacher co-ordinators were conducted by the Department of Environment, Government of Tamil Nadu at the Guindy National Park on 24<sup>th</sup> October 2014. Dr. H. Malleshappa, I.F.S., Director, Department of Environment, inaugurated the programme and interacted with the NGC teacher coordinators from various districts. He asked the NGC teacher coordinators to evaluate themselves and how



they could improve the performance of their district. The Director, Department of Environment also assured the NGC teacher coordinators that the Department will provide all the support for creating awareness on various environmental issues such as plastic avoidance etc. Dr. Jayanthi M., I.F.S., Additional along with staff of the ENVIS centre also participated in the workshop.

## ENVIS Advisory Committee Meeting

The ENVIS Advisory Committee meeting was convened by the Director of Environment at his chamber on 25<sup>th</sup> November at 11.00 AM. The meeting was conducted to review the activities of the ENVIS centre by the Advisory Committee members. Dr. J.K. Patterson Edward, Director, SDMRI, Dr. K.Dhanasekaran, Retd. Professor, Anna University, and Dr. G.S. Vijayalakshmi, Retd., Professor, Manonmaniam Sundaranar University, who constitute the



ENVIS Advisory Committee members were present. The Director of Environment welcomed the gathering and explained about the ENVIS scheme to the Advisory committee members. The Activities of the ENVIS centre were elaborated by the Senior Programme Officer. After the brief presentation, the Advisory committee members appreciated the ENVIS activities and gave suggestions to strengthen the ENVIS activities.

## Review meeting for the preparation of the district environment profiles of the eco-sensitive areas of Tamil Nadu

The review meeting for the preparation of the district environment profiles of the eco-sensitive areas of Tamil Nadu was convened by the Dr. Jayanthi M., I.F.S., Additional Director, Department of Environment at the Director's chamber on the 25<sup>th</sup> November 2014 at 11.30 A.M. The meeting was conducted to review the action taken by the consultants to prepare the district environment profiles of eco-sensitive areas of Tamil Nadu. The Additional Director of Environment explained the various corrections that need to be carried out to finalize the district environment of eco-sensitive areas of Tamil Nadu.



## One day workshop for the District Eco club Coordinator

The Department of Environment conducted a one day workshop for the District Eco club Coordinator on 10<sup>th</sup> December 2014. The programme was held at DPI campus, Chennai. Thiru L. Durai., State coordinator, NGC, welcomed the district ECO club coordinators who were present at the workshop. Dr. Jayanthi M., I.F.S., Additional Director, Department of Environment addressed the gathering and highlighted the various activities to be carried out by the ECO clubs.



Dr. H. Mallehappa, I.F.S., Director, Department of Environment delivered the presidential address and urged the coordinators to perform well in their district so that environmental awareness reaches every corner of the state. Tmt. C. Usharani Joint Director, Directorate of school education, DPI Campus, along with various resource persons participated in the workshop. The staff of the ENVIS centre also participated in this programme.

## 3<sup>rd</sup> Indian Biodiversity Congress (IBC) 2014

Indian Biodiversity Congress (IBC) is the largest get together of scientists, conservationists, environmentalists, civil society groups and local communities in India, a platform to discuss the current status of biodiversity in India an inclusive colloquium to forward strategies and policies to conserve the rich biodiversity heritage of the country. The SRM University along with CPR Foundation conducted the 3<sup>rd</sup> Indian Biodiversity Congress from 18<sup>th</sup> to 20<sup>th</sup> of December 2014 at the SRM University, Chennai. Dr. Jayanthi M., I.F.S., Additional Director, Department of Environment along with staff of the ENVIS presented a paper at the Congress.



## Consultative workshop on participatory biodiversity conservation in KMTR

To commemorate the Silver Jubilee of Kalakad Mundanthurai Tiger Reserve a consultative workshop was conducted by the Kalakad Mundanthurai Tiger Reserve from 18<sup>th</sup> to 20<sup>th</sup> December 2014. Thiru



M.S.M. Anandan, Hon'ble Minister for Forest, inaugurated the workshop. Shri Hans Raj Verma, I.A.S., Principal



Secretary, Environment and Forest Department, Government of Tamil Nadu delivered a special address and commended the efforts taken by the EDC members to conserve the rich biodiversity of KMTR. He further stressed that this trend needs to continue for the prosperity of the people as well as conservation of faunal species.

Dr. H. Mallehappa, I.F.S., Director of Environment, participated and presented a paper on the best eco-development practices and the success story of peoples participation in KMTR.



# ENERGY-SAVING TIPS

cut electricity use at home  
by 10% or more!



1. Use a fan instead of an air-conditioner to keep cool.

2. If you use an air-conditioner, set the temperature at about 25°C.



3. Switch off home appliances at the power socket.



4. Choose energy efficient light bulbs (e.g. compact fluorescent lamps).



5. Choose an energy efficient appliance (e.g. air-conditioner, refrigerator) with more ticks on the energy label.



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