

# FINANCING INSTRUMENTS FOR ADDRESSING CLIMATE CHANGE AND POLLUTION: LESSONS LEARNED FROM MAHARASHTRA

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**January 2015**

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The State of Maharashtra has been a pioneer in implementing fiscal instruments to address air pollution and climate change related issues. In the process, the State has also generated significant revenues that were supposed to be utilized towards vehicular pollution management, and promotion of renewable energy and energy efficiency measures. This policy brief analyses three such fiscal instruments with the objective of strengthening the design and implementation of such measures.

## Introduction

The issue of availability of funds has been identified as one of the major stumbling blocks in achieving India's climate mitigation and adaptation goals. This is true not only for national plans and programs, but also sub-national ones, particularly the implementation of the State Action Plans for Climate Change (SAPCCs). Till date 25 States have developed their SAPCCs. The total financial requirement for implementing 13 of these plans, which have provided detailed cost estimates stands at USD 71.4 billion<sup>1</sup>.

Although State Governments are relying primarily on Central funds and international financing, there are several innovative fiscal instruments that the State can design and implement. One of the most common ones that several Indian States have used in the past is to levy a per unit tax/charge on output of polluting firms. This tax/charge not only encourages the promotion of less polluting alternatives, but also raises significant revenues for the State, which

can subsequently be used to fund or subsidize climate-friendly technologies. The State of Maharashtra has been a pioneer in implementing several such fiscal instruments to address air pollution and climate change related issues.

In the process, the State has also generated significant revenues that were supposed to be utilized towards vehicular pollution management and promotion of renewable energy and energy efficiency measures in the State. This policy brief analyses existing financing instruments in Maharashtra using a combination of desk research and data and information gathering through Right to Information (RTI) queries, one-on-one meetings with relevant Government officials and a consultation workshop attended by Maharashtra Government officials and select academics and think tanks<sup>2</sup>. Three such financing instruments were analysed – Green Tax, Green Cess and the Urjankur Nidhi Fund.

1 Compiled by the authors from the various SAPCC documents

2 This consultation workshop was organized jointly by the Institute for Financial Management and Research and Conservation Action Trust on January 29, 2014 in Mumbai, Maharashtra

# Review and Analysis of Various Financing Instruments in Maharashtra

## (A) GREEN TAX

The Maharashtra Government introduced a Green Tax in 2010, on the lines of the tax already enforced in many other States. Also referred to as the 'Environment Tax', it is intended to reduce emissions from old vehicles plying on the roads. Under this tax regime, 15-years-old two-wheelers and cars running on petrol would have to pay Rs. 2000 and Rs. 3000 for a period of five years, respectively and diesel cars will pay Rs. 3,500 for the same period. Auto rickshaws with an eight year lifespan (15 years, for CNG/LPG autos) will be levied Rs. 750 for five years. Battery operated and electric vehicles are totally exempt from paying this tax. The tax is not fully enforced in all of Maharashtra. The State Government is now making attempts to cover Mira Bhayander, Vasai-Virar as well as Pune. Details regarding year-wise collection of Environment Tax are provided in the table below.

**Table1: ENVIRONMENT TAX COLLECTED BY GOVERNMENT OF MAHARASHTRA**

Year-Wise Collection of Environment Tax	Amount (Rs. Thousands)
2010-2011	118230
2011-2012	422680
2012-2013	385004

Source: RTI application

## Analysis and Discussion

The environment tax that is collected is deposited under the head "(01) (05) 00210132", which forms part of the consolidated funds of the Government. There is very little information in the public domain on the use of this fund. In response to a detailed RTI application on the procedure regarding utilization of proceeds from the environment

tax, the Transport Department noted that the procedure for utilization of revenue from the tax has been provided under section 11 of BMV Tax Act, 1958. The response also mentioned that barring a token provision of Rs. 2,000 under the expenditure head of '(01) (08) 20410528' for the Transport Commissioner's office and Rs. 2,000 under the expenditure head of '(01) (08) 20410537' for the field offices, no other expenditure has been incurred by the Transport Department towards the utilization of environment tax in the financial year 2013-14.

Till date, the Maharashtra Government has collected a total amount of Rs. 126 crore as revenues from the environment tax. Out of this, Rs. 15 crore has been utilized towards building fitness health centers in Nasik<sup>3</sup>. The stated objective of the environment tax as per the Motor Vehicles Act is that such a tax is being collected for the purpose of prevention and control of air pollution. While there is information on the revenues being collected by the Transport Department and given to the State Government, the expenditure on relevant schemes and programs, which is more crucial for planning interventions at the State level, is not known.

It is also unclear as to whether any other Government Departments have attempted to utilize the funds collected. The other issue to consider is whether the tax has been effective in curbing air pollution in the State. The rate of tax is very low and perhaps inadequate to deter vehicle owners from using old vehicles and purchasing new ones. In fact, tax instruments by themselves, may not be able to achieve the desired pollution mitigation outcomes.

Other innovative policy measures, such as congestion tax, parking reforms, keeping vehicles off the road on certain days/times of the week etc. need to be pursued in order to mitigate pollution, reduce congestion, and

3 Personal communication with the transport Department, Government of Maharashtra

increase vehicle speed and occupancy. The Tamil Nadu government has mooted the CUMTA (Chennai Unified Metropolitan Transport Authority), which is tasked with adopting a coordinated and unified approach to transportation in the State. The Maharashtra Government could perhaps look into a similar mechanism and subsequently discuss the need for funds for targeted measures on air pollution.

## (B) GREEN CESS

Recognizing the importance of renewable energy towards energy security and achieving other environment and development goals, the Govt. of Maharashtra considered it necessary to create a separate fund in order to accelerate

the generation of electricity from renewable sources in the State. The purpose of this fund was to support renewable energy projects on a wide scale, partly through subsidies and partly by providing finance on commercial terms. A Green Cess of Rs. 0.04 (4.00 paise) per unit on all industrial and commercial power consumers was introduced in 2004. The Cess was later increased to Rs. 0.08 (8.00 paise per unit), effective May, 2008. The amount collected under Green Cess is deposited in the Consolidated Fund of the State and is released as per budgetary procedure. The total amount of revenues generated from this Cess is not known. However, an amount of Rs. 145.90 crores<sup>4</sup> has been released to the Maharashtra Energy Development Agency (MEDA) till date. The following table describes how this amount has been utilised by MEDA:

**Table 2: LIST OF ACTIVITIES IMPLEMENTED BY MEDA UNDER THE GREEN CESS**

Scheme/Project/Activity	Concerned/Nodal Government Department	Date and Year of Commencement or Implementation	Amount of Fund Used (Rs.)	Current Status of Implementation
Renewable energy projects reimbursement, capital subsidy & equity participation	MEDA	2006-07 to 2013-14	15,14,15,203	Projects commissioned
	MEDA	2010-11	2,00,00,000	
	MEDA	2011-12	44,08,89,000	
	MEDA	2012-13 to 2013-14	14,06,82,895	
	MEDA	2007-08 to 2011-12	55,90,00,000	
Research & Development Programme.	MEDA	2005-06 to 2007-08	3,50,92,648	
<b>Total</b>			<b>1,34,70,79,746</b>	

Source: Information provided by MEDA

## Analysis and Discussion

While the Government has released the above figures on utilisation of the funds by MEDA, there is a concern that a large portion of the funds remain unutilised. There are no guidelines and criteria for shortlisting and selection of projects/entities. In fact, many of the projects funded by MEDA have been in the sugarcane industry and it is unclear why other industries/alternative energy sources were not targeted.

As is the case with the Green/Environment Tax, there is a lack of transparency regarding the utilization of funds

from the Green Cess as well. The stated objectives of the fund were quite broad, which makes it difficult to track and evaluate progress and more importantly, impact of the fund. In addition, there is no built-in oversight mechanism to monitor and evaluate the fund and/or the projects being funded. These are all important factors that should be considered while designing and implementing a fund such as the Green Cess that has the potential to significantly scale-up renewable energy generation in the State by leveraging private funding.

<sup>4</sup> Source: Response received on RTI application from MEDA

## (C) Urjankur Nidhi<sup>5</sup>

The Non-Conventional Energy Department, Govt. of Maharashtra, vide resolution dated 21-01-2006 has jointly promoted the Urjankur Nidhi Trust with Infrastructure Leasing & Financial Services (IL&FS), IREDA and commercial banks to promote non-conventional energy projects in Maharashtra. The Trust has been registered under the Indian Trust Act, 1882 and is registered with Securities and Exchange Board of India (SEBI).

Urjankur Nidhi acts as a venture capital fund set up in order to attract greater private sector investments and assist in project development. The fund was planned to have a corpus of Rs. 418 crores. The Govt. of Maharashtra contributed Rs. 218 crores that was refunded through the Green Cess charges to industrial and commercial power consumers in Maharashtra. Private institutional investors were to contribute the balance of Rs. 200 crores. The objective of this fund is to develop and take equity in projects on non-conventional energy that will comprise of bagasse cogeneration, mini hydro, wind, waste-to-energy, solar etc. However, till date the focus of this fund has largely been on bagasse based cogeneration projects owing to various reasons discussed below.

The Fund was conceived because of the lack of large scale private sector investment in the renewable energy sector. In particular, the sugarcane industry was targeted because of the barriers faced by co-operative sugar mills in the State. The efficiency of burning was poor as machines were old. Mill owners did not have funds for revamping their machines as banks were reluctant to lend money to the sugarcane sector. In light of these challenges, bagasse based cogeneration power projects offer significant potential in Maharashtra. These projects are developed, implemented and operated through a separate Special Purpose Vehicle (SPV)<sup>6</sup> on a Build Own Operate and Transfer (BOOT)<sup>7</sup> basis. The Urjankur Nidhi

along with financial institutions and private investors take up equity in the SPV.

The participating co-operative sugar factories can also take an equity share. Based on the crushing capacity of the participating co-operative sugar factory and actual cane crushing, a royalty will be paid per metric tonne (MT) of cane crushed over and above the captive steam and power requirements for sugar factory. The Trust has identified nearly 18 sugar factories out of which three have entered into project development agreements with the Trust<sup>8</sup>.

## Analysis and Discussion

### *Impact of the Fund*

An otherwise non-financeable project has been successfully implemented and two other projects followed soon. These three projects have a combined capacity of 80 MW. In addition, the Maharashtra Government has taken up a bagasse cogeneration sector project and has established several sugarcane co-operatives.

### *Challenges with Urjankur Nidhi*

The capital cost for these projects are high and being a relatively new sector, there is lack of adequate project and institutional financing. While the sector requires provision of risk capital, there is also a need for more professionals in project management and an influx of corporate governance and best industry practices. Furthermore, the tremendous rise in raw material prices has affected the cost per MW of these projects making them unviable as per the tariff structure declared by Maharashtra Energy Regulatory Commission (MERC) in July 2002. In light of these challenges, the Trust intends to seek similar financial support declared by the Ministry of New and Renewable Energy (MNRE), Government of India for cogeneration projects in co-operative sector sugar mills.

5 <http://www.mahaurja.com/pdf/urjankur.pdf>

6 A legal entity set up to facilitate a financial arrangement or create an instrument making its obligations secure in case of bankruptcy of the parent organization

7 An arrangement where developers design and build a project for a partner, own and operate for a certain specified period and finally transfer at an agreed upon or market price

8 Presentation by Mr. Sandeep Hasurkar at the consultation workshop organized jointly by the Institute for Financial Management and Research and Conservation Action Trust on January 29, 2014 in Mumbai, Maharashtra

## Concluding Remarks

Availability of funds will remain as one of the major stumbling blocks in the implementation of State-level climate action plans. While States will rely considerably on central funding and international support, there are several innovative financing mechanisms that a State can experiment with. From Maharashtra's experience it is clear, however, that introducing such an instrument by itself does not guarantee additional funds or achievement of stated environment or climate objectives.

There are several design and implementation factors that need to be considered. Based on the review and analysis of the three financing mechanisms presented in this brief, here are some observations and recommendations that might help the State strengthen the existing instruments or introduce new ones that are more effective in achieving the desired outcome:

- When a fiscal instrument such as a tax/charge is being levied, it is important to be clear about its objective. For both the pollution tax as well as the Green Cess, the rates of taxation are really low to bring about a change in consumer behaviour or influence the outcome. The objective seems to be generation of revenues in order to fund pollution mitigation activities and renewable energy projects. In such cases, design of the fund becomes of paramount importance. Some issues to consider include clarity on the scope of the fund, fund management authority, project appraisal process, transparency regarding fund collection and management, and monitoring and evaluation of funded project, programs and activities.
- A public private partnership (PPP) model such as the Urjankur Nidhi seems to be more effective in leveraging private sector capital and infusing efficiency and best practices in project development. There needs to be clear guidelines in order to attract greater private sector participation and also evaluate such proposals. In case of the Urjankur Nidhi, IL&FS approached the Government of Maharashtra with a plan to set up the fund. Often, an integrated approach is required to achieve pollution and climate mitigation goals in certain sectors. For example, in Maharashtra's case, pollution management policies such as the Green Tax will need to be integrated with transport policies, such as congestion tax and parking reforms etc.

## References

'Maharashtra proposes green cess on motor vehicles'; Down to Earth; 30 March 2010; Available at: <http://www.downtoearth.org.in/node/1118>; Accessed on 12.12.2013

'Maharashtra to face power cuts of 11 hours daily'; Available at: [http://articles.economictimes.indiatimes.com/2011-10-06/news/30250677\\_1\\_power-cuts-hike-power-merc](http://articles.economictimes.indiatimes.com/2011-10-06/news/30250677_1_power-cuts-hike-power-merc); Accessed on 15.11.2013

'MERC looks for new way to manage load'; Available at: [http://articles.timesofindia.indiatimes.com/2006-12-09/mumbai/27786120\\_1\\_merc-consumers-lmc](http://articles.timesofindia.indiatimes.com/2006-12-09/mumbai/27786120_1_merc-consumers-lmc); Accessed on 15.11.2013

'Maharashtra plans 'Green Cess' for forest cover'; Available at: [http://articles.timesofindia.indiatimes.com/2008-08-23/mumbai/27919468\\_1\\_green-cess-state-forest-policy-maharashtra-plans](http://articles.timesofindia.indiatimes.com/2008-08-23/mumbai/27919468_1_green-cess-state-forest-policy-maharashtra-plans); Accessed on 12.12.2013

BJP Petition against Load Management Charge; Available at: [www.kiritsomaiya.com/Power/press301106.doc](http://www.kiritsomaiya.com/Power/press301106.doc); Accessed on 13.12.2013

'Green Cess on Industries in Maharashtra funds Renewable Energy' is available at: <http://panchabuta.com/2013/05/03/green-cess-on-industry-in-maharashtra-funds-renewable-energy/>; Accessed on 11.11.2013

'Five year plan by MEDA for renewable energy'; Powerpoint presentation; Available at: [http://www.mahaurja.com/BP\\_Target\\_5YearPlan.pdf](http://www.mahaurja.com/BP_Target_5YearPlan.pdf); Accessed on 11.12.2013









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