

**We all need a Clean Earth, A Green world, with clean
Oceans, clean air ----**

A wishful thinking or a necessity for our existence?

***A joyous and peaceful environment in the world we live in, our
children will live in, have to be in harmony and well synchronized
with nature.***

This is our collective existential environmental responsibility.



ButterflyUtopia.com

***And that's our vision- to begin with
The vision of Litter free India.
Zero Waste, Total Recycling.***



Litter free India, We can make it happen



We have a plan,

Starting with Plastic Waste Management – Total Recycling.

The plastic industry, in partnership with the Government, develop and establish an integrated system of litter collection, waste collection through the plastic waste collection centers on space provided by municipal corporations; segregate, and recycle, Develop state-of-the-art demonstration recycling plants – one in each state across India, and get the populace participate in this plan through an aggressive Information and Education Campaign (IEC).

Also develop systems for other plastic centric wastes, including house hold WEEE, sterilized biomedical waste, community based green /organic waste disposal, waste dump site remediation, waste to energy projects, besides systems and technology innovations like IT based O&M., and resources' management of this reverse supply chain network.

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•Basic Plan: Components

1. The plastic industry to work in partnership with the state government and Municipal corporations.
2. House to house waste collection through the plastic waste collection centers in space provided by municipal corporations, collect, segregate, and send for recycle
3. Develop and establish a system of litter collection, after the routine road cleaning work is done by municipality.
4. implement state-of-the-art, demonstration recycling plants – one in each state across India
5. *And* get the populace participate in this system through an aggressive Information and Education Campaign (IEC).
6. Then the rest: *processing of other plastic centric house hold waste, and technology innovations, like IT based O&M., Financial resources' management of this reverse supply chain network.*

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The first component ;

- The plastic industry, in partnership with the central/state Governments
 - Government is one with one integrated network-CPCB, SPCBs
 - One legal network and guidelines -Gazette notifications by state and central government.
 - Countrywide campaign against plastic bags- perceived by public that plastics are culprit, therefore affecting the industry.
 - Other plastic centric waste management laws are not being implemented correctly.
 - Therefore for India, one action plan, one system, for possibly one unified industry with, one nodal agency of the Government is envisaged.

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The Second component ;

Plastic waste collection centers on space provided by municipal corporations,

- Uniform standard operating protocols of arrangement with our industry partners, to collect, segregate, and send for recycling.
- Dry waste collection from households as authorized agency of a fixed area.
- IT-based monitoring and co-ordination for eventual management of waste supply chain network
- Equipments like baling, weighing and transportation is part of responsibility
- Litter free program supervision and accountability
- local awareness campaign .
- Till the time the municipalities give the space, The work can start on shed based authorized plastic waste collection centers along with litter free campaign and IEC.

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The Third component ;

An integrated system of litter collection,

- special manpower to be deployed with performance accountability, because the litter picking during the day is not in the routine scope of work of existing sanitation workers, including under the PPP arrangements.
- Tools like litter picker, bags & bicycles will be needed for the supervisory and managerial staff.
- Good HR management practices with right socio-economic support will be required.
- Once in place, these people will be integrated in the formal system of recycling supply chain network .

- In a replicable project developed for a 30 sq. km. urban area, the cost of 1 sq. km. urban area comes around ₹800/- per day, which is equivalent to the value of 80kg. of plastic waste at ₹ 10 a kg. The Project establishment cost for this is approximately ₹ 80 lacs. .

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The Fourth component ;

Develop State-of-the-art, **RECYCLING FACILITIES**, at least one in each state.

- **Primarily for waste plastic including from MSW, metalized wrappers, bags etc.**
- **Land requirement approximately 1 Acre to be procured from the Govt.**
- **Basic processes to be set up i.e. washing, shredding, agglomeration, extrusion and granulation.**
- **R & D centers to be designed and funds from DST to be explored.**
- **Specialized recycling systems for other variety of wastes will also be explored like lumber making and processing's of WEEE, BMW, IHZW etc**
- **Support for sales of the items produced like lumber, benches for the parks etc**
- **Project estimated costs are ₹25 cr, for a capacity 50 Tpd mixed plastics as per the details worked out.**

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The fifth component;

INFORMATION, EDUCATION AND COMMUNICATION (IEC) CAMPAIGN

- Mobilizing people and making program participatory through advocacy
- Transferring information, skills and techniques to the people
- Bringing transparency in implementation of the programs.
- Promoting the concept of accountability and social audit.

All the mediums- mobile network, news papers and magazines, Radio, TV and Cinemas, Web and web based social networks, posters and hoardings, education mediums for children, meetings and workshops, and other mediums will be put to use.

There will be two distinct IEC programs – national and local. Both will be integrated with the rest of the plan,. Needed consistently for 5 years.

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**The fifth component;
An aggressive Information and Education (IEC) Campaign:**

A cost components can be as in three components:

- 1. School Education campaign Country wide.**
- 2. National campaign in electronics and print media .**
- 3. Local awareness campaign in synergy with litter free infrastructure has to be done with the executing agency.**

A budgetary provision of Rs, 50 cr, PA should meet the objective in five years. Details to be worked out.

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Opportunities for associates

- **Collection of MSW from homes with the user charges, if not done.**
- **Local processing of organic waste,**
- **Community composting and biogas plants,**
- **Household hazardous wastes like glass, batteries, mercury etc also collected for proper processing,**
- **Construction debris, green waste collected for a payment,**
- **Landfill remediation, zero waste systems concept development.**
- **Technology innovations, Research and development,**
- **IT-based Operations and Management,**
- **Financial resources' management for this reverse supply chain network.**

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***Litter free India ,
we will make it happen***

A glimpse in

Plan Execution

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Synopsis:

- 1. This is a basic conceptualization of nationwide project to address the plastic litter and plastic waste management issues.*
- 2. This has to be as a extended producers responsibility project for industry as envisaged in the law.*
- 3. It has to be a project of the government to address the issue correctly and to put in a proper perspective before the public.*
- 4. We seek approval of this project from the industry and from the government with requisite financial and administrative support.*

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The PLAN EXECUTION will need segmentation from one integrated project to four distinctively separate sub projects, in view of their financial structures, stakeholders' contributions and operational management.

The segments are:

- 1. Plastic waste collection centers - **Waste exchange India***
- 2. Litter free project - **Cycle and recycle .***
- 3. State of the art recycling plants at least one in each state – **SHHOONYA Recycling***
- 4. Integrated and well synchronized Information and Education Campaign with ICPE – **JAN LO, PEHCHAN LO***

Separate system protocols are being put in place, with details well enumerated. Individual project design documents will be made after approvals.

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Waste exchange India

- 1 . Even one year after PWM Rules of February 4, 2011, municipalities have not asked, neither the industry has approached them for putting up the collection centers.*
- 2. Industry should take a proactive initiative and exploit this opportunity for an advantage to all.*
- 3. The waste collection net work partners for this reverse supply chain network needs to define:*
 - Qualifying criteria of this network partner*
 - Terms and conditions for this network partner*
 - Scope of work of this network partner*
 - Commercial arrangement of this network partner*
 - Co-ordination and monitoring with the network partner**they will be evolved separately.*

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1. Plastic waste collection centers;

Waste exchange India

We will set up Waste Exchange Centers(ESRF WECs) in the space provided, which will be of uniform designs, porta cabins, with all the necessary displays and equipment. They will be operated by Waste Exchange center Operators (WECOPs),.

Each WECs will have a number of house to house waste collectors, who will periodically or on call visit households, give them free bags for dry plastic waste collection and collect/buy plastic waste and any other waste. They will be termed as WEC-GUIDES , as they will also impart information of recycling potential of waste and segregation necessities.

Each WECs will have a number of waste picker working in that area with a proper attendance system and an arrangement to ensure their proper livelihood, which could be contractual or regular employment in the system. They make a living out of the waste we throw, and hence will be called WEC – ANGELS.

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Litter free Project— ***Cycle and recycle.***

Manpower for collection: one picker is required for *1 square Km urban area,*

-We will need one supervisors for every 15 persons employed and 1 manager for every 10 supervisors.

Area in square KM x minimum wages = labor cost per day

Area in SQ.KM x 15 = one supervisor = minimum wages x 2 per day

Area in(sq KM x 5) x 10 = One manager= minimum wages x 4 per day.

+ 20% for ESI, PF, gratuity, bonus, etc.

+ 10 % Administrative expenses

+ Equipments and Tools

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2. Litter free Project— **Cycle and recycle.**

For example in a town of 30 Sq. Km , with minimum wages of Rs. 250, the cost of operating will be

Waste collectors 30x250	= 7500.00
Supervisors 2x500	= 1000.00
Manager 1x1000	= 1000.00
<u>Fuel/tools/maintenance</u>	<u>= 4500.00</u>
<u>Rs. 14000.00 per day</u>	

Monthly manpower expenses 14000x31	= 434000.00
ESI, PF, Gratuity, Bonus etc. 20%	= 86800.00
<u>Bags and collection tools</u>	<u>= 80000.00</u>
Total	= 600800.00
Admin & office etc 10%	= 60000.00

Total ₹ 660,800/- pm

or say ₹ 80 lacs per year.

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Litter free Project– Cycle and recycle.

This model will work in urban and semi urban areas, however in rural setups, the area can be increased between 5 to 10 kms. per person for keeping it completely litter free. The tools will be a bicycle for the waste pickers and supervisors, and a motorcycle for a manager besides bags, hand picking equipment and a uniforms .

Other costs

- Survey and documentation: A survey defining the area of bin placement and manpower deployment as well as preparing the project design document will take a month

A analyst	= ₹ 50000.00
4 surveyors = ₹ 15,000 x 8	= ₹ 120000.00
lodging boarding= ₹ 3000 for analyst p/d	= ₹ 90000.00
local travel and equipment ₹ 5000 per day	= ₹ 150000.00
report preparation & admin expenses	= ₹ 90000.00
Total	= ₹ 5,00000.00

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Litter free Project— **Cycle and recycle.**

Bins: A litter free project has to have an infrastructure, in place with the necessary support mechanism. So when we ask people to stop littering, we have to provide bins or containers for litter. It is observed that the people on their private premises, shops and residences keeps the waste collection containers, however it is in public places, specially market area, that we need to provide bins at close distances.

The objective is to place a bin at every 50 meters distance on average. The distance may vary at residential colonies, slum clusters or shopping areas. The plastic bins will cost approximately ₹ 2000/- each. These bins will be provided with bag holders optionally . . .

We estimate 1200 places for bins in an area of 30 sq.Km. and to develop a good segregation system- twin bin system should be adopted.

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1 Litter free Project – **Cycle and recycle.**

Total cost estimate for a 30sq.km project area:

Project establishment cost

Survey and PDD:	= ₹ 500000
Plastic Bins 1200	= ₹ 2400000
Bicycles 32	= ₹ 400000
Office space	= ₹ 600000
Variable costs 10%	= ₹ 60000
furniture, computers	= ₹ 300000

Total project establishment cost= ₹4260,000/-

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SHHOONYA RECYCLING

for making fuel or Lumber

- 1. Mixed waste plastics can be converted to fuel of acceptable grade for use in the industry Or the lumber to be used for benches of the parks etc.*
- 2. there are three modules are available in the market , and their commercial sustainability is being evaluated.*
- 3. We plan to develop centers for 10TPD capacities in the beginning and enhance capacities later on.*
- 4. A good segregation system will be installed , where the industry can have dependability.*
- 5. We will ask a 15 acre land with availability of power and water with easy accessibility by roads from state governments .*
- 6. The sale of finished products will need government participation.*

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SHHOONYA RECYCLING

- since zero waste is the objective of this project – shhoonya is a good name for this sub-project.*
- the basic system of segregation and recycling to be established first .*
- two major costs – Land, plant and machinery, which can be shared equally between the Govt. and industry.*
- At least one in every state will serve the objective of this mission to be developed in one year, subject to availability of resources.*
- Project is being assessed , And details can then be standardized for two modules: for making fuel or for making lumber.*

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*4. Integrated and well synchronized Information and Education Campaign (IEC) – **JAN LO , PEHCHAN LO***

- Well integrated and synchronized with our waste collection system and recycling services,*
- -The campaign will have three components: School Education, electronics and print media and the local awareness campaign.*
- School education project has been assimilated by ICPE and is enclosed.*
- Electronic and print media integrated campaign should be done nationally .*
- local awareness campaign should be done with litter free campaign and waste exchange centers.*
- Once finalized, a uniform collective action will be more effective*

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So let's begin,

*Litter free India, We can
make it happen.....*

*Rakesh Solanki may 1, 2012
www.rakeshsolanki.com*

Litter free India, We can make it happen

Litter free India ! We can make
it happen.

*because The Commitment makes the competency
subservient,*

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Thank you!

***And now let's see the questions
before the other implementation
details.....***

So...