



Inclination of PIBOs to Implement EPR Provisions of Electronic and Plastic Waste Management in Himachal Pradesh

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Abstract

The increasing amount of e-waste and plastic waste of the recent year poses serious environmental hazards and ecological imbalance which do have the capacity to waivered-out the existence of humanity from the planet. Recent scientific and technological development, unplanned industrialization, rapid urbanization, increasing population etc. aroused global consciousness for the environment protection. At this age of ICT, a person could hardly be surviving without using electronic and plastic products. The matter of concern is that an addition or excessive addition of waste generated by electronic and plastic products, now threatening the environment and ecology. Government of the day would only be appreciable when they specify citizen centric administration and it could hardly be possible to neglect such a contiguous issues of environmental concerns i.e. management of electronic and plastic waste. The researcher, through this article, describes about EPR provisions of electronic and plastic waste management in Himachal Pradesh. The prime objectives of the study are to check out inclination of PIBOs to implement EPR provisions of electronic and plastic waste management in Himachal Pradesh. Researcher also examined the mandatory provisions of EPR authorization for PIBOs and other stakeholders abiding EPR guideline. Awareness of PIBOs, cost effectiveness of products after EPR regime, research work initiated by producers and public awareness campaign along with challenges of EPR regime have also been analyzed in detail. Researcher adopted analytical aspects with qualitative and quantitative research design based on both secondary and primary data sources and personal observations of the field study.

Keywords: EPR, PIBOs, E-waste, Plastic Waste, Responsibility, Awareness etc.

Introduction

It is comprehended that both the developed and developing countries are bearing brunt of the abuse of environment and the indiscriminate use of resources in many different ways. Recent scientific and technological development, unplanned industrialization, rapid urbanization, increasing population aroused global consciousness for the environment protection.³ In the modern age of Information Communication Technology (ICT), a person's could hardly be surviving without using electronic instruments. In the same way, present lives have been dependent on the instruments made by plastic. Peoples have been habituated to used plastic instruments not only in the forms of packaging and carry bags but all developmental activities also depend on it. The area of concern is that an addition or excessive addition of certain materials in the physical environment (water, air and land) making it less fit or unfit for life. Now sustainable model of development is only panacea in the hand of policy maker. Administrative system of any country could be appreciable only when sustainable development could be ensured and electronic and plastic waste management preface through EPR norm in the country.

The vast amounts of e-waste have increased in recent years. The consumer boom in the last few decades has led to the production of more and more products with less and less durability. As the consumption increases so does the volume of waste and a strong impression builds up that we live in a society with threw away mentality. However, the culprits are not just the end users of the products but also the producers and designers are equally culpable.⁴

Extended Producer Responsibility

Comprehending the consequences of unregulated e-waste handling and disposal system, government of the day, decided to introduce a special regulation in the form of draft rules, 2010 which govern with the aspect of environmentally sound handling and management system of e-waste in the country.⁵ This policy was passed from parliament in 2011 as E-waste (Management & Handling) Rule, 2011 which attempted to take the stakeholders involved in chain of e-waste in purview including producers, dismantlers, collection centers refurbishes, recyclers, consumers or bulk consumers. These stakeholders were abiding by the rules which were specially laid down their responsibilities.⁶ A distinguishing characteristic of these rules was the introduction of the concept of Extended Producer Responsibility (EPR). For the first time, the concept of EPR got statutory recognition in the legal framework of management of e-waste and work as a key element of the rules. Therefore, it becomes pertinent to exhaustively deals with the concept of EPR.

The concepts of Extended Producer responsibility have been evolved with the passage of time and alter the patter of waste management system. The basic concepts of EPR in the form of producer responsibility have come into light in 1992. The Organization of Economic Cooperation and Development (OECD) defined Extended Produce Responsibility (EPR) as a form of environmental policy approach through which responsibility of the producer use to be extended to the post consumer or at the stage of discarded level of the

life cycle of the product which includes its safe disposal & recycling stage.⁷ Following two notable features can be inferred with regards to this policy, based on the OECD guidelines:

- Shifting responsibility whether fully or partially, physical or financial upstream towards the producers of the product and away from municipalities.
- To provide incentives to producer to take care of environmental considerations in the design of their products.⁸

Extended Producer Responsibility refers to the responsibility of the producer of recycling the product, take back and final disposal of the same with environment friendly manner. It means producers have made responsible for their product for the entire life cycle of that product chain – from cradle to grave. The concept of Extended Producer Responsibility (EPR) gives of following two types of policy objectives –

- Design improvements of the product and their system which basically encourage the producers to redesign their product in such a way to reduce consumption of virgin material in the category of product design improvement and product system design improvements.
- High utilization of product and material quality through effective collection, treatment, reuse or recycling in the environment friendly & socially desirable manner.

The basic aim of the policy of EPR is to encourage producers to reduce pollution by bringing changes in product design and processing technology at manufacturing level.⁹ Another notable aims of the EPR policy is to shift financial responsibility for recycling of electronic and plastic products put up on the producers. In its widest connotation, EPR is based on principle that producer own extent of responsibility for environmental impacts of their products. It is to shift both, physical and financial responsibility of electronic and plastic waste management from consumers and government authorities to the producers. The cost for environmental friendly treatment and disposal can be added in the price of the product.

EPR: Approach and Models

Though, there are various approaches and models for the aiming implementation of the EPR policy, the popular one are mandatory and voluntary approach. The OECD countries have been adopted a mandatory approach of EPR policy. At present, India have also been inching towards mandatory model of the EPR policy through the current legal regime of electronic and plastic waste management in digital era. The voluntary approaches of EPR includes following codes of good practices, Public-Private-Partnerships, appropriate product are few preferable form of implementing EPR strategies in order to avoid the formulation of stringent national regulations. Further variation can be traced in terms of involvement of producer between totally private to publically required one, with shared control. To facilitate implementation of EPR in collective manner, PRO are playing a crucial role with producers to meet their obligations of EPR. Mandatory approach inculcates legally sanctioned practices.¹⁰

After examining the gaps in direct and indirect rules, regulations and various policies associated with electronic and plastic waste, and taking care of the issues of growing e-waste and highly discarded material of plastic waste all around, policy makers have come up with the new set of policies for the effective

management of electronic and plastic waste in India. Herewith, researcher examine E-waste (Management) Rule, 2016 and Plastic – Waste (Management) Rule, 2016 which amended in 2018 and incorporated Extended Producer Responsibility procedure with the high hope in every corner of the country for effective management of electronic and plastic waste.

After taking the objections and suggestions of citizens of India, E-waste (Management) Rule, 2016, amended on 22 March 2018 and published by Ministry of Environment, Forest and Climate Change, Government of India. It apply on every manufacturer, PIBOs, consumer, bulk consumer, collection centre, dealers, e-retailer, refurbishers, dismantler and recycler involved in manufacture, sale, transfer, purchase, collection storage and processing of electrical or electronic waste.¹¹ EPR provisions stratified a set of responsibilities for each stakeholders focusing on PIBOs either through setting up their own collection and disposal system or collectively with PROs. PIBOs also have options to fulfill their EPR targets through purchasing 'Surplus Certificate' Which is similar to the system of 'Carbon Trading'.¹¹

Objectives of the Study

The specific objectives of the study are as follows:

- ❖ To check out feasibility of implementation of Extended Producer Responsibility norms by the side of PIBOs of Himachal Pradesh.
- ❖ To examine the mandatory provision of EPR-Authorizations for PIBOs in Himachal Pradesh.
- ❖ To observe that stakeholders of electronic and plastic waste management are abided by EPR guidelines.

Hypothesis

H₁: PIBOs of Himachal Pradesh are ready to implement EPR provisions.

H₂: EPR-Authorization is mandatory for PIBOs or Producers of electronic and plastic products.

H₃: Stakeholders of electronic and plastic waste management are abided by EPR guidelines.

Methodology

PIBOs are abided by the guidelines of EPR for which they required to obtain EPR-Authorization with presenting EPR Plan. As per the records of Himachal Pradesh Pollution Control Board (HP PCB), there are 75 PIBOs listed which falls under the geographical locations of study area i.e. Shimla & Solan. Out of them, around one-fourth (25.00 percent) i.e. 20, ten PIBOs from each study area (10+10=20) has been randomly selected for the study purpose. For counter checking by the officials of HP PCB, herein, total 226 officials are directly or indirectly involved with pollution board, out of this, ten percent of the total officials i.e. 23, for easy calculation 24 officials picked out on the basis of 1:2:3 of three strata i.e. Management (4), Technocrats (8) and Field Officers (12) have been interviewed with the help of schedule method specially framed to keep in mind of present study 'Inclination of PIBOs towards Electronic and Plastic Waste Management through Extended Producer Responsibility in Himachal Pradesh'.

Awareness of PIBOs about the EPR Policy enforced on Electronic and Plastic Products

EPR is a crucial shift from a consumer-centric to a product-centric approach in addressing the life cycle of a product with their environment friendly management. So, it enables PIBOs to effectively manage their waste and promote the collecting, recycling and safe disposal culture in the country. It has been also focused on establishing a circular economy for the waste being generated by their products. Therefore, researcher enquired to the PIBOs that whether they are aware about EPR policy enforced on electronic and plastic products and those who responded positively further probed with the way out for EPR. The responses gathered in such a way have been analyzed with the help of following table.

Table – 1.1

Awareness of PIBOs about the EPR Policy enforced on Electronic and Plastic Products

N=20

Categories	Do you aware about the EPR policy enforced on electronic and plastic product?		If yes, what is your way out for EPR			
	Yes	No	Through PROs	Through Waste Management Agencies	Tie-up with ULBs	Setting of own collection, transportation and treatment facilities
Shimla (10)	4 (40.00%)	6 (60.00%)	1 (25.00%)	0 (00.00%)	2 (50.00%)	1 (25.00%)
Solan (10)	3 (30.00%)	7 (70.00%)	0 (00.00%)	0 (00.00%)	2 (66.66%)	1 (33.33%)
Total (20)	7 (35.00%)	13 (65.00%)	1 (14.28%)	0 (00.00%)	4 (57.14%)	2 (28.57%)

Sources: Primary Data

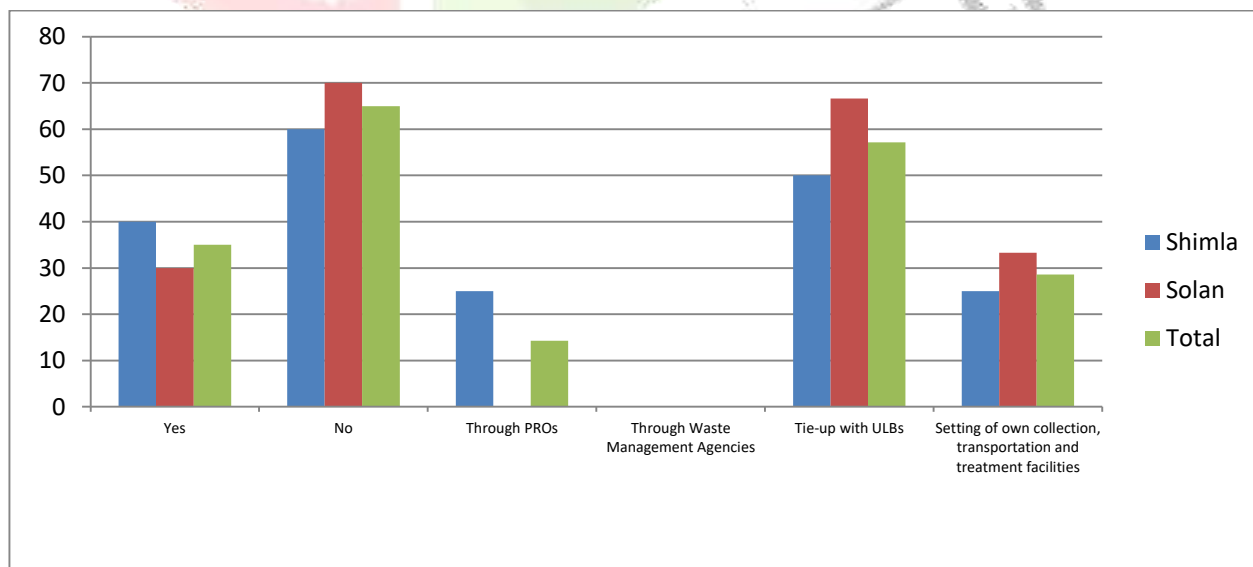
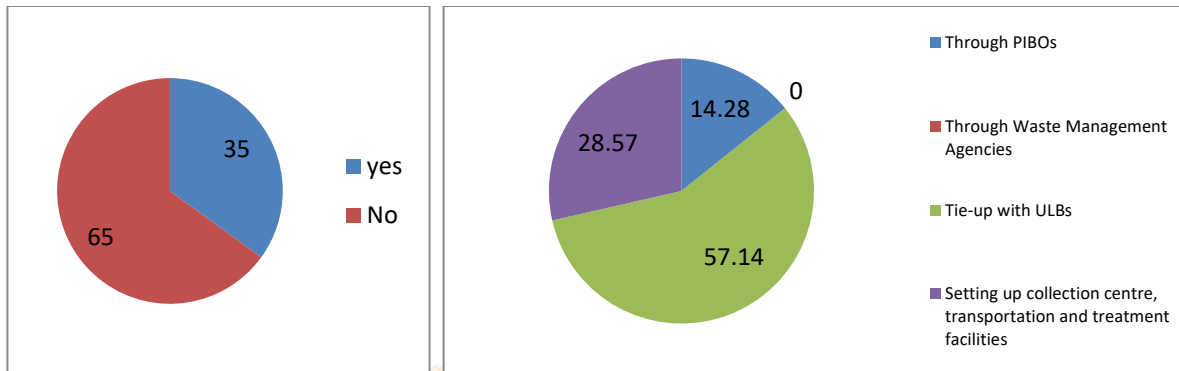


Table and bar graph 1.1 shows the awareness of PIBOs about the EPR policy enforced on electronic and plastic product. Only two-fifth (40.00 percent) PIBOs are aware while a majority (60.00 percent) of them are shows their unawareness. Half (50.00 percent) of those PIBOs who answered positively states that they are

tie-up with ULBs whereas other half (50.00 percent) PIBOs reveals their way out through PROs or through setting of own collection, transportation and treatment facilities. Among PIBOs of Solan district, only around one-third (30.00 percent) are aware while above two-third (70.00 percent) respondents are unaware in this respect. Among those PIBOs who shows their awareness, two-third (66.66 percent) are tie-up with ULBs and rest one-third (33.33 percent) reveals about setting of own collection, transportation and treatment facilities.



Based on total or an average of the total respondents of both the study area has been analyzed to see the combined effect. Herewith, around two-third (65.00 percent) PIBOs are unaware while only around one-third (35.00 percent) PIBOs shows their awareness. Among aware PIBOs, majority (57.14 percent) of them are tie-up with ULBs, one-among seventh reveals their way out through PROs and equal number of PIBOs states for setting of their own collection, transportation and treatment facility.

Submitting Actions Plan by PIBOs

Action plan, herewith, refers to a detailed plan that is submitted by a producer to the concerned regulatory authority i.e. CPCB or SPCB at the time of applying for EPR-Authorization. Through this action plan PIBOs shall provides a detail of e-waste and plastic waste channelization system for targeted collection including details of e-waste exchange and PROs if applicable. So, researcher enquired from the PIBOs that whether they submitting action plan including target based approach to the HP PCB, those who answered affirmatively further asked about how frequently and those who answered negatively asked about the reason behind. The responses gathered in this way have been analyzed with the help of table 4.54.

Table 1.2

Submitting Action Plan by PIBOs

N=20

Respondents	Do you submitting states action plan including target based approach to the HP PCB?		If yes, how frequently?				If no, specify the reasons behind
	Yes	No	Quarterly	Half yearly	yearly	Five yearly	
Shimla (10)	8 (80.00%)	2 (20.00%)	0 (00.00%)	1 (12.50%)	7 (87.50%)	0 (00.00%)	<ul style="list-style-type: none"> No felt need Tiresome process Not asked by enforcement authority Action plans are voluntary
Solan (10)	8 (80.00%)	2 (20.00%)	0 (00.00%)	2 (25.00%)	6 (75.00%)	0 (00.00%)	
Total (20)	16 (80.00%)	4 (20.00%)	0 (00.00%)	3 (18.75%)	13 (81.25%)	0 (00.00%)	

Sources: Primary Data

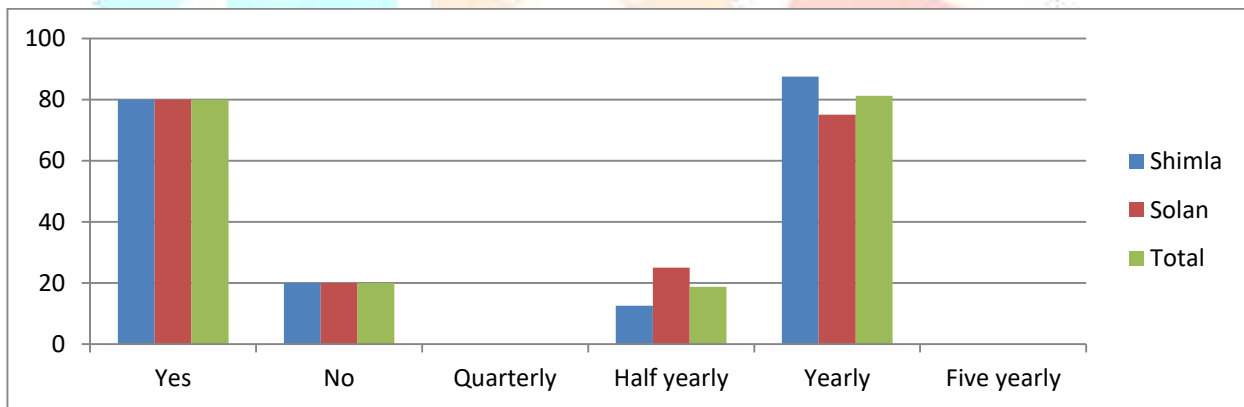
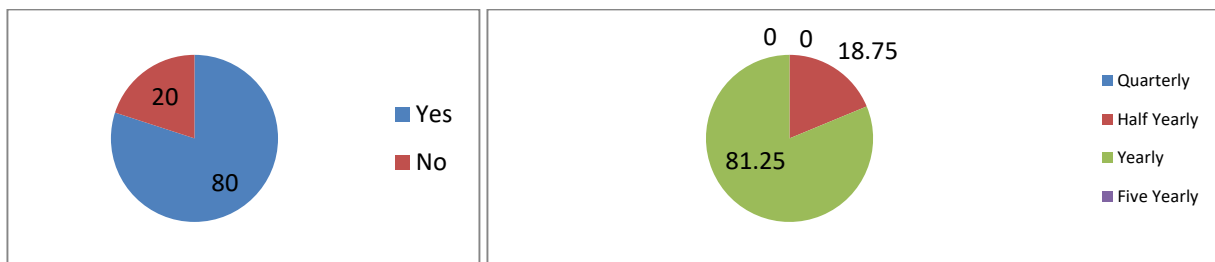


Table and bar graph 1.2 reveals that four-fifth (80.00 percent) PIBOs of Shimla district are submitting their action plan, out of them seven-eighth (87.50 percent) submitting yearly and one-eighth (12.50 percent) submitting half yearly whereas one-fifth (20.00 percent) PIBOs not able to submit their action plan specifying target based approach. PIBOs of Solan district of Himachal Pradesh also responded in the same manner and among those who are not submitting their action plan specified the reason behind which is noted in the above mentioned table.



Based on total or an average of the total respondents of both the study area has been analyzed to see the combined effect. Herewith, four-fifth (80.00 percent) respondents answered affirmatively with regards to submission of their action plan specifying target based approach to the HP PCB and rest (20.00 percent) PIBOs are not submitting the same. Among those PIBOs who are submitting, above four-fifth (81.25 percent) are submitting yearly and rest (18.75 percent) submitting half yearly. Among those respondents who are not submitting specified the reason behind i.e. no felt need, tiresome process, not asked by enforcement authority and action plans are voluntary.

Cost Effectiveness of Product after EPR Regime

EPR regimes placed maximum liability on PIBOs for their electronic plastic product produced and sell in the market and reap the largest financial gain from it. PIBOs are liable to setting of collection centre individually or collectively through PROs. It not only smooth the management of electronic and plastic waste but also helps in comprehensive approach with added benefits including organizational consciousness, social presence, environmental management and economic aspects of business. Thus, researcher tried to know about the perception of PIBOs that how they ensure cost effectiveness with overall revenue of company provided extra burden of EPR regime and their responses have been tabulated as given below.

Table – 1.3
Cost Effectiveness of Product after EPR Regime

N=20

Categories	How do you ensure cost effectiveness with overall revenue of company provided extra burden of EPR regime?		
	To increase selling price	To allocate separate fund for this purpose	To design improvement of the product and material quality
Shimla (10)	3 (30.00%)	6 (60.00%)	1 (10.00%)
Solan (10)	4 (40.00%)	4 (40.00%)	2 (20.00%)
Total (20)	7 (35.00%)	10 (50.00%)	3 (15.00%)

Sources: Primary Data

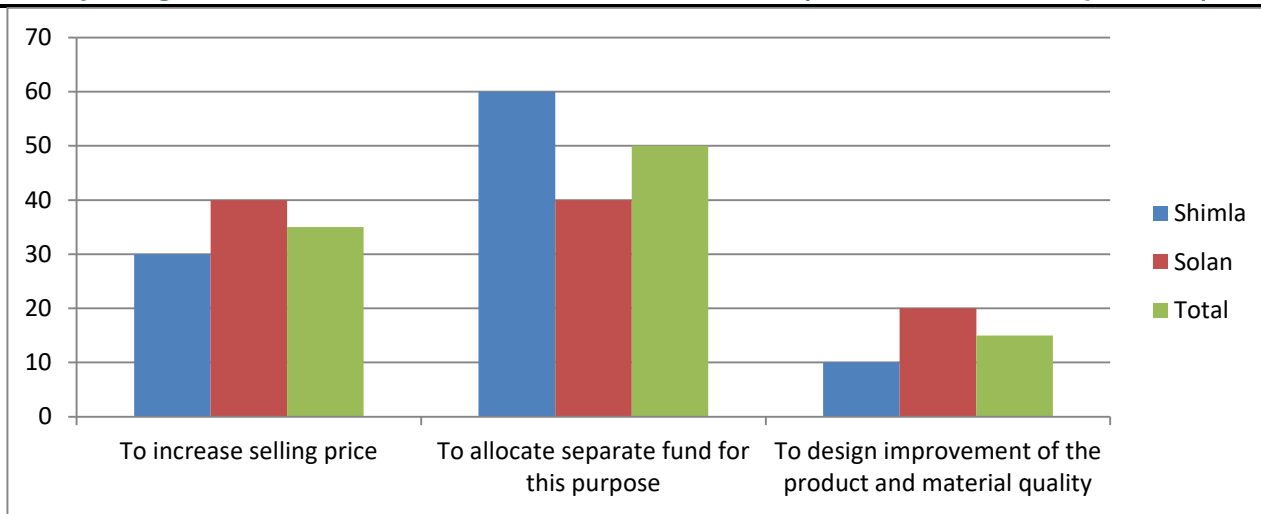
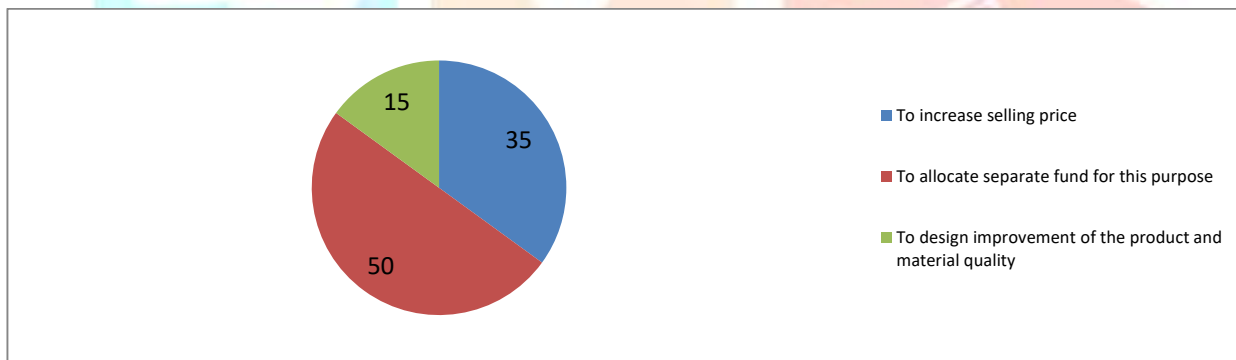


Table and bar graph 1.3 represents cost effectiveness of the product after EPR regime. Three-fifth (60.00 percent) PIBOs of Shimla district assent that they allocates separate funds for this purpose, one-third (30.00 percent) states to increase selling price of the product and one among ten (10.00 percent) PIBOs said about design improvement of the product and material quality. Among PIBOs of Solan district, two-fifth (40.00 percent) clarified to increase selling price of the product and equal number of respondents go for allocating separate funds for this purpose and rest one-fifth (20.00 percent) states for design improvement of the product and material quality.



Based on total or an average of the total respondents of both the study area has been analyzed to see the combined effect. Herewith, half (50.00 percent) of the PIBOs emphasized on allocating separate fund for this purpose, above one-third (35.00 percent) PIBOs assent to increase selling price of the product and around one-sixth (15.00 percent) focused on to design improvement of the product and material quality with regards to ensuring cost effectiveness with overall revenue of the company provided extra burden of EPR regime.

Research Work Initiated by PIBOs

It is widely expected that EPR regime would be upscale research and development. Research in the area of design improvements of the product and their system basically encourage the producers to redesign their product in such a way to reduce consumption of virgin material in the category of product design improvement and product system design improvements. So, researcher enquired to the PIBOs that whether they have any research undergoing for alternatives of using plastic packaging or carry bags and those who responded positively requested to specify. The responses are given below.

Table – 1.4
Research Work Initiated by PIBOs

N=20

Categories	Do you have any research work undergoing for alternatives of using plastic packaging or carry bags or reduction of electronic products?		If yes, please provides details
	Yes	No	
Shimla (10)	1 (10.00%)	9 (90.00%)	Research work undertaking on product redesign
Solan (10)	1 (10.00%)	9 (90.00%)	Promoting research to replace plastic material
Total (20)	2 (10.00%)	18 (90.00%)	

Sources: Primary Data

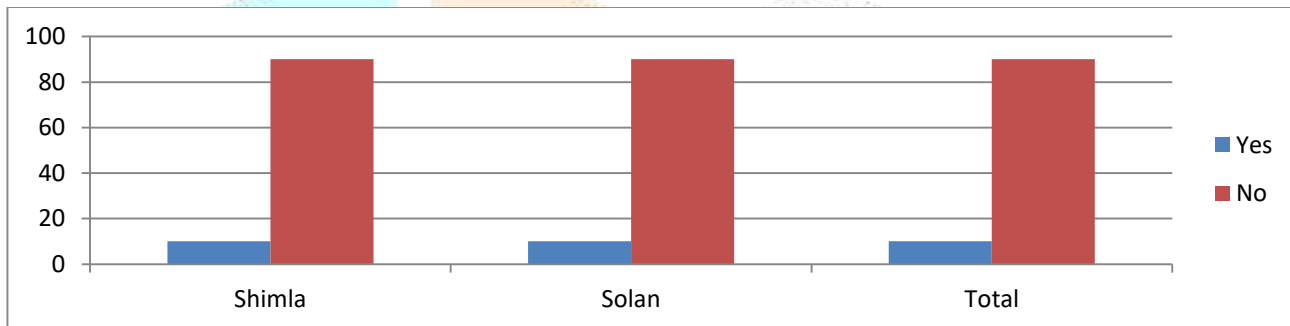
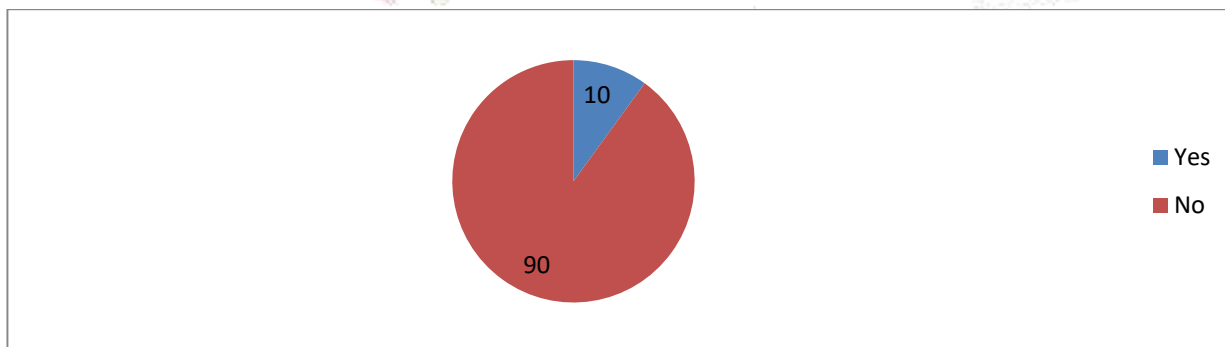


Table and bar graph 1.4 reveals that an overwhelming majority (90.00 percent) respondent of Shimla district and equal number of respondents of Solan district did not have any research work initiated for alternatives of using plastic packaging or carry bags or reducing electronic products. One-tenth (10.00 percent) PIBOs from both the study area responded positively and states research work under process on product redesign and replacing plastic materials.



Based on total or an average of the total respondents of both the study area has been analyzed to see the combined effect. Herewith, an overwhelming majority (90.00 percent) of respondents denied while only one-tenth (10.00 percent) PIBOs responded positively and said research work are under process on product redesign and replacing plastic materials.

Contribution of PIBOs towards Public Awareness Campaign

EPR regime require PIBOs to create awareness in public through different mass media or otherwise such as labeling on the product about the detailed responsibility of consumers, putting funds with PROs and supporting for public awareness campaign, supporting seminars and workshops conducted by ULBs or HP PCB and so on. Researcher asked to the PIBOs that whether they are contributing towards public awareness program for making EPR policy initiatives viable through the consumer's side and those who responded positively further asked about their way out to make aware to the consumers so that maximum electronic and plastic waste could be collected back and channelize through authorized stakeholders. The responses so gathered have been analyzed with the help of following table.

Table – 1.5

Contribution of PIBOs towards Public Awareness Campaign

N=20

Categories	Do you contributing towards public awareness program for making EPR policy initiatives viable through the consumer's side?		If yes, please specify the way out			
	Yes	No	Through different mass media	Labeling on product the detailed responsibility of consumers	Putting funds with PROs and supporting for public awareness campaign	Supporting seminars and workshops conducted by ULBs or HP PCB
Shimla (10)	8 (80.00%)	2 (20.00%)	1 (12.50%)	2 (25.00%)	1 (12.50%)	4 (50.00%)
Solan (10)	7 (70.00%)	3 (30.00%)	1 (14.28%)	1 (14.28%)	1 (14.28%)	4 (57.14%)
Total (20)	15 (75.00%)	5 (25.00%)	2 (13.33%)	3 (20.00%)	2 (13.33%)	8 (53.33%)

Sources: Primary Data

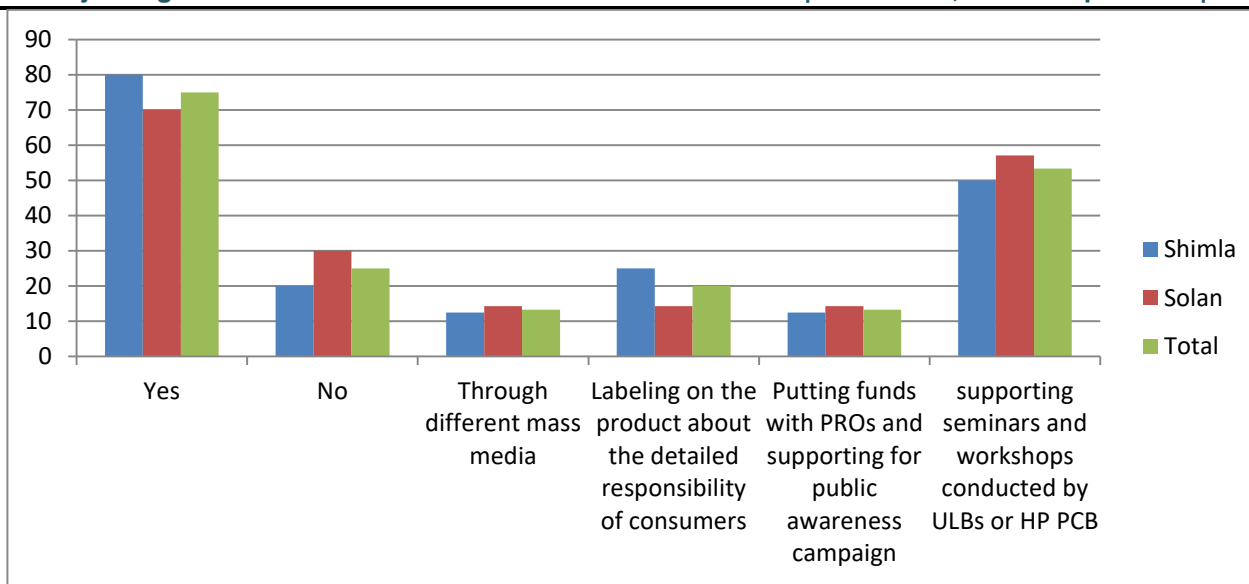
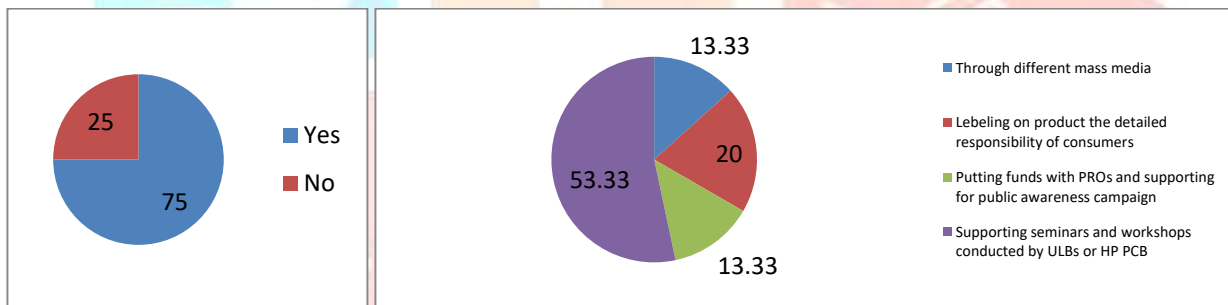


Table and bar graph 1.5 shows that four-fifth (80.00 percent) respondents of Shimla district and above two-third (70.00 percent) respondents of Solan district contributing towards public awareness program whereas one-fifth (20.00 percent) respondents of Shimla district and around one-third (30.00 percent) respondents of Solan districts are not contributing towards public awareness program. Among the respondents of Shimla and Solan district those who contributing positively, a clear majority of them contributing through supporting seminars and workshops conducted by ULBs or HP PCB.



Based on total or an average of the total respondents of both the study area has been analyzed to see the combined effect. Herewith, three-fourth (75.00 percent) PIBOs are contributing towards public awareness program and rest one-fourth (25.00 percent) do not contributing anyway towards public awareness program. Among those PIBOs who are contributing positively towards public awareness program, a majority (53.33 percent) of them contributing through supporting seminars and workshops conducted by ULBs or HP PCB, one-fifth (20.00 percent) PIBOs are in the view of labeling on the product about the detailed responsibility of consumers and rest (26.66 percent) of them going through the mass media or putting funds with PROs and supporting for public awareness.

Perceptions of PIBOs with Regards to the Challenges of EPR Regime

At the ground level, there are several challenges being posed by different stakeholders in terms of their effective management of electronic and plastic waste. Lack of accountability of PIBOs have also been comprehended but in this section of study PIBOs have been asked about the challenges being faced by them through EPR regime and their responses have been analyzed as given below.

Table – 1.6

Perception of PIBOs with Regards to the Challenges of EPR Regime

N=20

Categories	What are the challenges being faced for effective implementation of EPR policy regime?			
	Inadequate policy framework	Lack of coordination with PROs	Lack of consumer's support	Lack of support by ULBs
Shimla (10)	2 (20.00%)	2 (20.00%)	5 (50.00%)	1 (10.00%)
Solan (10)	1 (10.00%)	2 (20.00%)	6 (60.00%)	1 (10.00%)
Total (20)	3 (15.00%)	4 (20.00%)	11 (55.00%)	2 (10.00%)

Sources: Primary Data

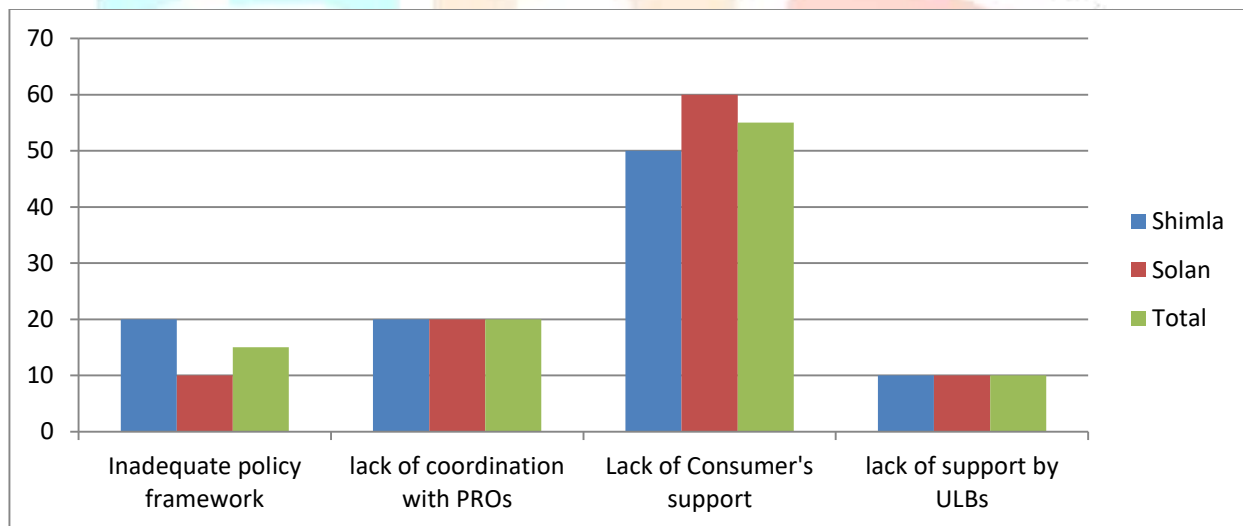


Table and bar graph 1.6 represents about the perceptions of PIBOs with regards to challenges being faced by effective implementations of EPR policy regime. Half (50.00 percent) of the respondents from Shimla district indicated for lack of consumer's support, one-fifth (20.00 percent) respondents noticed inadequate policy and equal number of respondents indicated lack of coordination with PROs and rest one-tenth (10.00 percent) claimed for lack of appropriate support by ULBs. Three-fifth majority (60.00 percent) among respondents of Solan district indicated for lack of consumers support, one-fifth (20.00 percent) noticed lack of coordination of PROs, one-tenth (10.00 percent) each states inadequate policy and lack of proper support by ULBs.



Based on total or an average of the total respondents of both the study area has been analyzed to see the combined effect. Herewith, a majority (55.00 percent) of respondents claimed for lack of consumer's support, one-fifth (20.00 percent) respondents indicated for inappropriate coordination with PROs, around one-sixth (15.00 percent) respondents noticed inadequate policy and one-tenth (10.00 percent) respondents' states about lack of appropriate support by ULBs.

Official's Perception in Terms of Abiding EPR Guidelines

According to EPR guidelines, all stakeholder so electronic and plastic waste management including producers / manufacturers, dealers, refurbishes, and consumers are abided by their responsibility. EPR is based on the principle that producer own extent of responsibility for environmental impact of their products either individually or collectively through Producer Responsibility Organizations (PROs). Herewith, officials of regulatory authority are asked by researcher that whether all stakeholders of electronic and plastic waste management are abided by EPR norms. Whoever responded negatively further probed with which among the following stakeholders are usually not abided by EPR norms in Himachal Pradesh. The responses so gathered are analyzed with the help of table given below.

Table – 1.7

Official's Perception in Terms of Abiding EPR Guidelines

N=24

Officials	Do you think that all stakeholders of electronic and plastic waste management are abided by EPR norms		If no, which among the following stakeholders are usually not abided by EPR norms in Himachal Pradesh?			
	Yes	No	Dealers / dismantlers / Refurbishers	PIBOs	Consumers	All of these
Management (4)	1 (25.00%)	3 (75.00%)	0 (00.00%)	1 (33.33%)	0 (00.00%)	2 (66.66%)
Technocrats (8)	2 (25.00%)	6 (75.00%)	1 (16.66%)	4 (66.66%)	0 (00.00%)	1 (16.66%)
Field Officers (12)	2 (16.66%)	10 (83.33%)	1 (10.00%)	7 (70.00%)	1 (10.00%)	1 (10.00%)
Total (24)	5 (20.83%)	19 (79.16%)	2 (10.52%)	12 (63.15%)	1 (05.26%)	4 (21.05%)

Sources: Primary Data

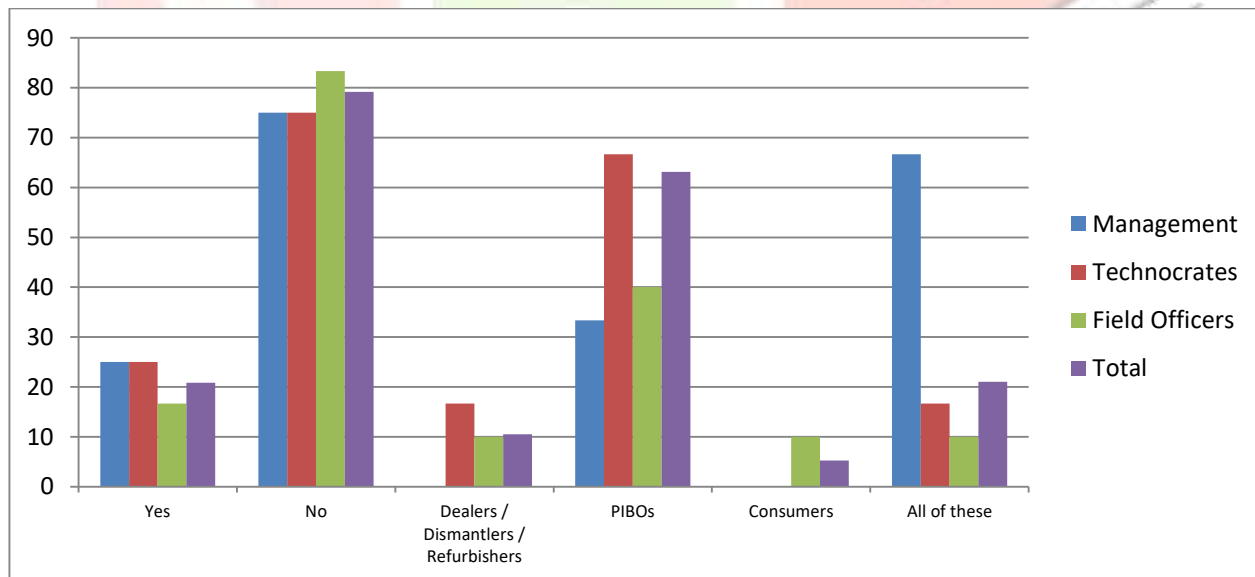
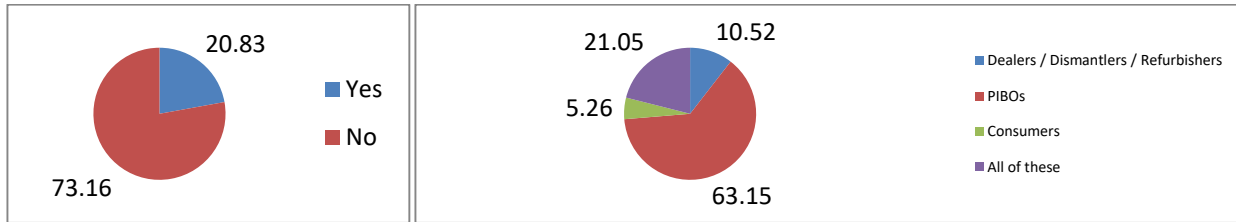


Table and bar graph 1.7 represents that three-fourth (75.00 percent) officials working at managerial level of HP PCB don't think all stakeholders are abided by EPR norms while one-fourth (25.00 percent) respondents think positively, among those who are not agreed, two-third (66.66 percent) of them said that all of these stakeholders including Producer, Importers and Brand Owners (PIBOs) and consumers are not abided by EPR norms in Himachal Pradesh. Among technocrat's categories, one-fourth (25.00 percent) respondents replied positively while three-fourth (75.00 percent) respondents replied negatively, among negative respondents an

absolute majority (66.66 percent) of respondents claimed that PIBOs are not abided by EPR norms in Himachal Pradesh. Among field officials categories, one-sixth (16.66 percent) are positively responded while rest five-sixth (83.33 percent) are negatively responded among them an absolute number of respondents (70.00 percent) blamed that PIBOs are not abided by EPR norms in Himachal Pradesh.



Based on total or an average of the total respondents of all categories of officials of regulatory authority have been analyzed to see the combined effect. Herewith, around four-fifth (79.16 percent) respondents claimed those stakeholders are not abided by EPR norms while around one-fifth (20.83 percent) respondents are agree in this regards. Among those who claimed negatively, a majority (63.15 percent) of respondents notarized PIBOs whereas above one-tenth (10.52 percent) blamed for dealers, dismantlers and refurbishers, one among twenty (05.26 percent) respondents blamed consumers and above one-fifth (21.05 percent) respondents notarized all of the above mentioned stakeholders are not abiding EPR guidelines in Himachal Pradesh.

Official's Perception with Regards to EPR-Authorization of PIBOs

Producers, Importers and Brand Owners (PIBOs) suppose to take EPR-Authorization from concerned regulatory authority. EPR-Authorization refers to the permission granted by regulatory authorization i.e. Central Pollution Control Board or State Pollution Control Board, to a producer for managing EPR prospects with implementation plans and targets outlined in such authorization including detail of PROs and E-waste exchange if applicable. Therefore, researcher asked concerned authority that whether it is mandatory to take EPR-Authorization for every producer of electronic and plastic product, whoever replied positively further enquired whether producer are abide by a detail plan of electronic and plastic waste channelization system for target collection and recycling facilities given by them while taking EPR-Authorization and further enquired by them about types of actions taken by HP PCB in terms of violating the terms and conditions of EPR-Authorization. Responses gathered in such a way have been analyzed with the help of following table.

Table – 1.8

Official’s Perception with Regards to EPR-Authorization of PIBOs

N=24

Officials	Is it mandatory to take EPR-Authorization for every producer of electronic and plastic products?		If yes, does producers are abide by a detail plans of electronic and plastic waste channelization system of targeted collection & recycling facilities given by them while taking EPR-Authorization			Which types of action are taken by HP PCB in terms of Violating the term & conditions of EPR-Authorization		
	Yes	No	Yes	No	Partially No	Punishable	Obligatory	Legal actions as per Air / Water Contamination Act
Management (4)	4 (100.00%)	0 (00.00%)	2 (50.00%)	0 (00.00%)	2 (50.00%)	1 (25.00%)	2 (50.00%)	1 (25.00%)
Technocrats (8)	8 (100.00%)	0 (00.00%)	2 (25.00%)	2 (25.00%)	4 (50.00%)	2 (25.00%)	2 (25.00%)	4 (50.00%)
Field Officers (12)	10 (83.33%)	2 (16.66%)	4 (40.00%)	3 (30.00%)	3 (30.00%)	3 (30.00%)	5 (50.00%)	2 (20.00%)
Total (24)	22 (91.66%)	2 (08.33%)	8 (36.36%)	5 (22.72%)	9 (40.90%)	6 (27.27%)	9 (40.90%)	7 (31.81%)

Sources: Primary Data

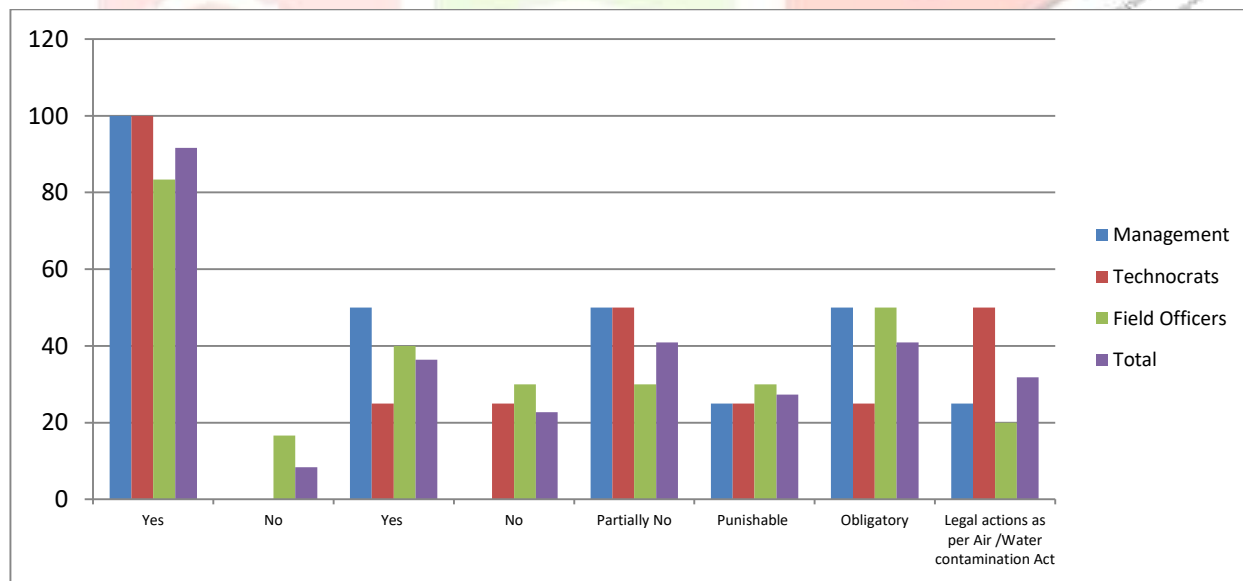
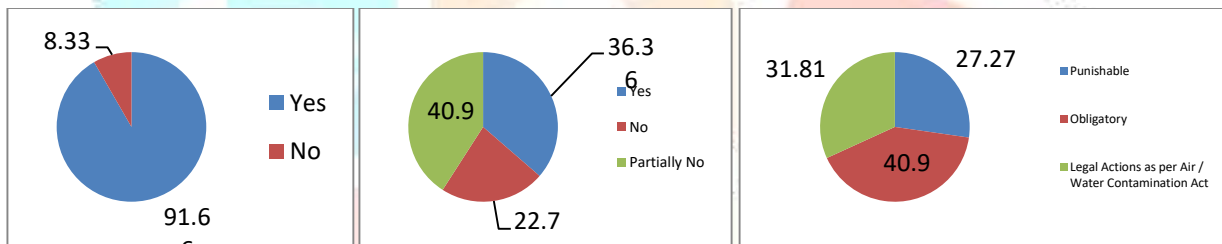


Table and bar graph 1.8 reveals that Cent percent officials of managerial level of regulatory authority states that it is mandatory to take EPR-Authorization for every producer of electronic and plastic products but only half (50.00 percent) of them said that producers are abide by a detail plan of electronic and plastic waste channelization system of target collection & recycling facilities given by them while taking EPR-Authorization. With regards to types of actions taken by HP PCB in terms of violating terms and conditions of

EPR-Authorization, half (50.00 percent) of them clarified obligatory and other half clarified punishable or legal action as per Air / Water contamination act.

Among technocrats categories as well Cent percent respondents clarified that it is mandatory but only one-fourth (25.00 percent) of them responded positively rest three-fourth (75.00 percent) states either ‘no’ or ‘partially no’ with regards to abiding terms and conditions of EPR-Authorization. With regards to types of actions taken by HP PCB, half of them responded on legal action as per Air/Water contamination act and other half said either for punishable or obligatory actions.

Among field officials respondents, more than four-fifth (83.33 percent) clarified compulsions of EPR-Authorizations while one-sixth (16.66 percent) neglected by compulsory provisions of EPR-Authorizations. Herewith, two-fifth (40.00 percent) respondents said that producers are abide by EPR-Authorization whereas three-fifth (60.00 percent) responded not abiding or partially abiding EPR-Authorization terms. With regards to actions taken by HP PCB half (50.00 percent) of respondents emphasized on obligatory actions, around one-third (30.00 percent) emphasized on punishable action and one-fifth (20.00 percent) emphasized on legal actions as per Air/Water contamination act, if producers violating the terms and conditions of EPR-Authorization.



Based on total or an average of the total respondents of all categories of officials of regulatory authority have been analyzed to see the combined effect. Herewith, an overwhelming majority (91.66 percent) respondents clarified compulsions of EPR-Authorization but only around one-third (36.36 percent) among them said that producers are abided by detail plans presented while taking EPR-Authorization, rest majority (63.63 percent) officials are not satisfied with this. With regards to actions taken by HP PCB, above two-fifth (40.90 percent) officials said for obligatory actions, above one-fourth (27.27 percent) officials states for punishable action and about one-third (31.81 percent) officials states for legal actions as per the Air / Waste contamination act.

Another open ended question were asked to the officials of regulatory authority that which types of liabilities & penalties are followed by HP PCB, if not abide by terms and condition of EPR by PIBOs or any concerned stakeholders, then researcher got answer that in this aspect authority abided to take actions according to the provisions of environment protection act, 1986 and legal actions as per Air / Water contamination act against victims or culprits. Stringent punishment lie cancellation of their registration and cancelling PWR authorization etc. are also recommended by the concerned authority.

Findings:

- ❖ Around two-third majority of PIBOs are not aware about the EPR provisions enforced on electronic and plastic waste products. There is lack of Producers Responsibility Organizations (PROs) and just around one third PIBOs took the steps towards setting of their own collection, transportation and treatment facility for the management of electronic and plastic waste (T-1.1).
- ❖ Four-fifth PIBOs are submitting their action plan specifying target based approach to the HP PCB and rest one-fifth of them are not submitting their action plan. Among those PIBOs who are submitting, above four-fifth are submitting yearly and rest submitting half yearly. Among those PIBOs who are not submitting specified the reason behind i.e. no felt need, tiresome process, not asked by enforcement authority and action plans are voluntary (T-1.2).
- ❖ With regards to cost effectiveness of the products after EPR regime, half of the PIBOs emphasized on allocating separate fund for this purpose, above one-third assent to increase selling price of the product and just around one-sixth respondents focus on design improvement of the product and material quality (T-1.3).
- ❖ An overwhelming majority of PIBOs do not initiate any types of research work for product redesign or for alternatives of using plastic packaging / carry bags or for reduction of using virgin material or for reduction of electronic products (T-1.4).
- ❖ Three-fourth majority of PIBOs are contributing towards public awareness program through supporting seminars and workshops conducted by ULBs or HP PCB, labeling on the product about the detailed responsibility of consumers and through the mass media or putting funds with PROs for public awareness (T-1.5).
- ❖ A majority of PIBOs claim lack of consumer's support, around one-sixth states for inadequate policy framework while around one-third of them noticed lack of coordination and inadequate support of ULBs etc. are the noticeable challenges being faced for effective implementation of EPR regime (T-1.6).
- ❖ A majority of officials of HP PCBs claims that PIBOs are not obliged with the provisions of EPR (T-1.7).
- ❖ An overwhelming majority of officials of HP PCB states that EPR Authorization for PIBOs is mandatory but only around one-third among them said that producers are abided by detail plans presented while taking EPR-Authorization, rest, a majority of them are not satisfied that PIBOs are obliged with the EPR-Authorization (T-1.8).

Conclusions:

Based on the above findings, it can be inferred that PIBOs shows inability for readiness to implement EPR provisions and suggest that there is need to develop a sound system to get back disbursed electronic and plastic products which use to be sold by the PIBOs all over the country. Therefore, first hypothesis of the study “PIBOs of Himachal Pradesh are ready to implement EPR provisions” stands disapproved. Second hypothesis of the study “EPR-Authorization is mandatory for PIBOs or Producers of electronic and plastic products” stand proved. Third hypothesis of the study “Stakeholders of electronic and plastic waste management are abided by EPR guidelines” stand disapproved.

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