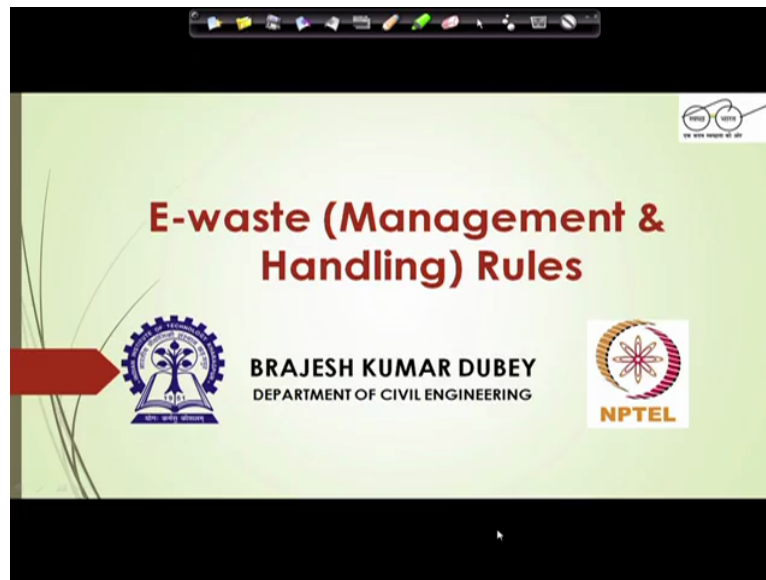


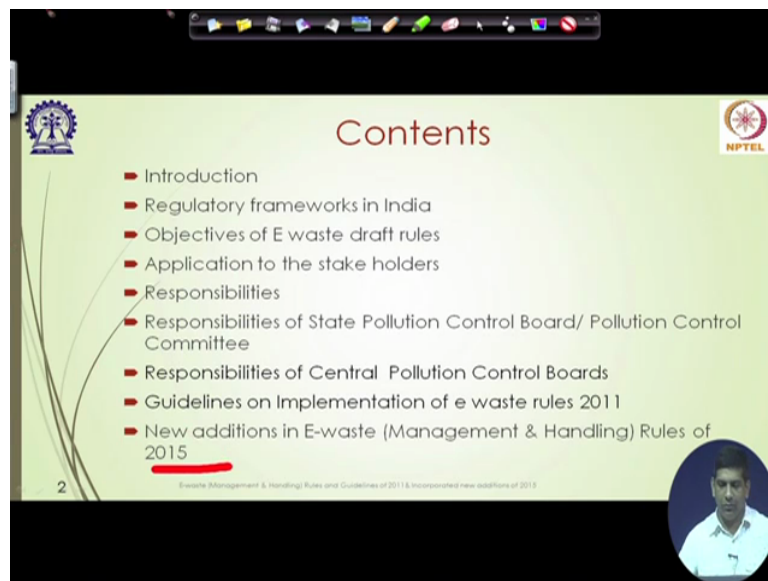
**Course On Integrated Solid Waste for a Smart City**  
**Professor Brajesh Kumar Dubey**  
**Department of Civil Engineering**  
**Indian Institute of Technology Kharagpur**  
**Module 12**  
**Lecture No 56**  
**E-Waste Management**

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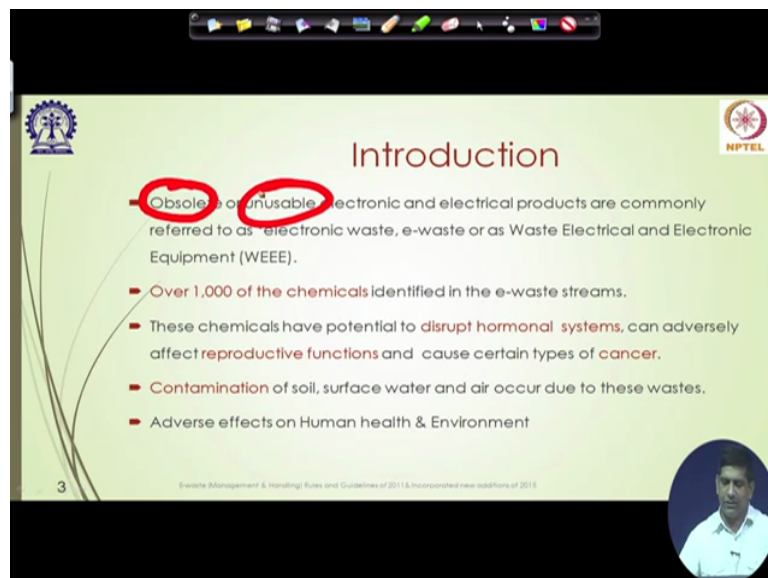
Okay so welcome back so you will get started as I said in the previous video that we will look at the e-waste management rules. So I will cover the rule that was there which is the first came in few years back there was a revision which happened in 2015 and incorporated in 2016, so will talk about those e-waste management rules with the background and again here just we are talking about Indian rules and later on we will try to like an if compare our rules with global rules and some of the issues globally.

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So in this particular module and probably the next module we will look at and take some of the background about the rule, what is the regulatory framework in India, objective of e-waste rules, applications of to the stakeholders, what are the responsibilities of individual stakeholders, responsibilities of all state pollution control board and Central pollution control board, guidelines of the initial e-waste rules of 2011 and then what are the newer change that came in 2015. So those we will talk about in this module we will and we will try to see how far we can go and then maybe in the next one.

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So with that so in terms of we already some of these stuff we already talked about I will go little bit faster and you can always post question on discussion forum you do not understand

anything but we already talked about what is e-waste? Anything when it becomes obsolete or un-usable, so there is nothing new there. It is obsolete or it is so it is an obsolete and unusable, so that is what unusable electronic electrical products, that is what we call electronic waste or waste electronic equipment.

So over 1000 there are 1000 chemicals identified in e-waste stream, so if that is lot of chemicals out there in the electronic waste and these chemicals have potential to disrupt hormonal system as well as reproductive functions and can also cause certain types of cancer. So these are these are nasty stuff, bad stuff we all know about that. It does contaminate soil, surface water, groundwater, adverse effect on human health and environment that is the reason why we are like studying this particular topic where I explain that to you yesterday as well that of course there are certain bad effect from the improper e-waste management that is why we are talking about it.

(Refer Slide Time: 03:01)

The slide is titled "Regulatory frameworks in India" and features the NPTEL logo in the top right corner. It contains two main bullet points regarding e-waste regulations under the Environment Protection Act 2011. The first bullet point, "E-waste (Management & Handling) Rules under the Environment Protection Act 2011", is annotated with a red circle around the title and a red line underlining the text. Below it, a red line underlines "Notified on 12th May 2011 and Became effective from May 2012". A red arrow points to the text "The basic objective is to put in place an effective mechanism to regulate the generation, collection, storage, transportation, import, export, environmentally sound recycling, treatment and disposal of e-waste". Another red arrow points to the text "This includes refurbishment, collection system and producer responsibilities thereby reducing the wastes destined for final disposal". The second bullet point, "E-waste (Management & Handling) Rules under the Environment Protection Act 2015", is annotated with a red line underlining the title. Below it, a red line underlines "Notified on 10th June 2015" and a red arrow points to the text "Objectives are same as mentioned above with some omission and additions." The slide number "4" is in the bottom left corner, and "E-waste Management & Handling Rules and Guidelines of 2011 & incorporated new additions of 2015" and "8-Sep-17" are in the bottom center and right respectively.

So in terms of the regulatory framework in India how things started for electronic waste management in 2011 on twelfth specifically on twelfth May 2011 and e-waste management rules was first like came out and it was given one year was given for to become it is to become an implementation. So it came out notified in twelfth May 2011 and with the intent that it will becomes effective from May 2012.

Unfortunately even now we are not able to follow it what was proposed in this 2011 rule, just because infrastructure to support that is still is being developed and as I mention in the previous video that the competition between the formal and informal sector is there and the

informal sector being able to give some money to this to the waste producers, they are the formal sectors losing on that part.

So basic objective was to put a effective mechanism to regulate the generation, collection, storage, transportation, import, export of environmental sound recycling import-export and then an environmentally sound recycling treatment and disposal of e-waste, so that is the basic objective of this regulatory framework, as for any regulatory framework that could be it is mainly to control and to make sure things are done properly.

This include this does includes refurbishment, collection system, producers is responsibilities, reducing the waste destined for final disposal. So in terms of e-waste management if you I think we have talked that briefly earlier as well, if you think electronic waste that is e-waste there are two types of e-waste in India, one the waste that is being produced in the country itself and at the same time we have a certain amount of waste coming into the country from abroad.

And that is also happening where the waste is actually getting imported into the country and that amount of waste is also pretty substantial which is coming from developed countries from US or from European union and other places and then they are getting recycled in India in a very crude way. So that is also there which needs to be which does comes under this e-waste management rule, because in terms of the management of that particular waste.

There are of course first of all the those waste should not come to India and it is really unfortunate that they do. And it is many times when we talked about those electronic waste coming to India, we had a tendency to just put all the blames to those developed countries. Of course they developed country there people, there are companies out there that they should not send it over there over here as per their rule it should not come.

But many times what happens it comes in name of charity forgiving some this old computers, old working computers to the poor people in India, in the villages in India and by the time it arrives here it is actually dead on arrival, it does not work and so maybe out of 100 computers that comes for charity, 75 is waste and 25 maybe working, so and those 25 working well also become waste in few years down the line.

So that is those type of thing happens, but that 75 which is dead on arrival, there are people in India actually who are waiting for it, so it is not we cannot put all the blames to the Western countries they are sending all these e-waste to India, we have people in India who wants

those e-waste to come. There is always there is a nexus, so there it is not a one-way traffic so it is of course there are people sitting here who are wants those electronic waste to come so that they can make some money out of that.

By they do not it is same that way the e-waste is recycled in the informal sector in India it cannot that kind of processes will never be allowed in developed countries, so be it in European or US or Australia, New Zealand wherever. So it is much and more expensive to recycle e-waste in those countries, so they just dumped it over here and there we have to our fellow countrymen some of them who wants to make money out of that they are waiting for those garbage to come in and they make money out of that.

So it is basically it is a nexus which is running it, it is not only the fault of people the Western world. So that is so that aspect also covered in this particular rule, because that created lot of hues and cries in the media in recent years. And then in 2015 e-waste management rules under environmental protection act, it was notified on tenth of June, objectives are same as 2011, but there are some omissions and there are some additions, some of them's have been clarified some of things has been made much has been stream line so will talk about those stuffs as well over here.

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**E-Waste Management and Handling Rules, 2011** have 6 chapters, 3 schedules and 6 forms. And following procedures have been included.

- Procedure for Authorization of producers, dismantlers, collection agencies, and recyclers.
- Procedure for registration/renewal of registration of recyclers
- The producer of electrical and electronic equipment's is responsible for the entire life cycle of its own branded product and in particular the environmentally sound end-of-life management and facilitating collection and take back.
- Liability of producers, collection agencies, transporter, dismantlers and recyclers.
- Reduction of hazardous substances used in E- equipment.

6

E-waste Management & Handling Rules and Guidelines of 2011 A. Incorporated New 08&Forms of 2011

So again what is the objective of e-waste rule, objective is of course to minimise the illegal recycling and to promote safe recovery operation by channelizing e-waste to registered e-waste recyclers. So that is again where we are there are some registered recyclers which you can find on the website. Many times they are not in a working condition, you call them they

will not even pick up your phone, so those things are there. Then extended responsible to producers to manage the system of e-waste collections take back and channelizing to a registered dismantler and recycler.

So that is where this extended producer responsibility that is also the way we are trying to implemented it is a bit questionable and I explained that in the previous video as well, that rather than having say if there are 10 different type of laptop if you look at, you can have Sony, you can have Dell, you can have LG, I do not think LG is there, but Acer and there are so many Samsung, Panasonic also make some laptop and other stuff, so there are maybe 10 different companies which makes laptop and then Lenovo and then you want to have each of these company setup their own recycling centre or own collection Centre, that is it not work.

Because say if I am sitting in Kharagpur, in Kharagpur type of town I would which is like few lakhs of population, if every of these brands you can find in the market, but if now if every of these brand company has to set up a small shop here to collect this e-waste directly that does not make sense, because that is not going to work, they will never do it because economically will not makes sense to them.

So rather than that if we have money coming into a central pool where one people can bid for that and then the local person whoever is interested in he or she can set up a shop where the recycling can recyclables can be taken over there and that company can represent all the different brands out there and the money government can charge some money to these companies based on amount of electronics that they sell.

Say in the state West Bengal and there is could be a thing from the every state level we can have something like that, like a stewardship program. So and the other thing that the objective is to reduce the hazardous substances, that is which is rather than in electrical use more environmental friendly to regulate the generation, collection, import and transportation and all those kind of stuff, that is off course there.

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**Application of these rules to stakeholders**

- These rules shall apply to every producer, consumer or bulk consumer involved in the manufacture, sale, purchase and processing of electrical and electronic equipment or components, collection centre, dismantler and recycler of e-waste.
- Shall not apply to batteries as covered under the Batteries (Management and Handling) Rules
- Shall not apply to Micro and small enterprises, radio-active wastes as they have respective development Acts.

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E-waste Management & Handling Rules and Guidelines of 2011 & incorporated new additions of 2013

So in terms of rule what about it has 6 chapters, 3 schedules and 6 forms, so there is a procedure for authorisation there is a procedure for authorisation very similar to the municipal solid waste management rules these forms are there whether it is a procedure for authorisation of producers, dismantlers and collection agencies and recyclers.

Procedure for registration renewable of registration of recyclers, the producer of electrical electronic equipment is responsible for the entire life cycle of its own branded product and in particular the environmental sound end of life management, facilitate collections and take back, that is where things are not working it is very difficult for it to work actually, unless there is a some sort of organisation setup which can help it make it work. There is liability of producer's, collection agencies, transporters, dismantlers, reduction of hazardous substance used in e-equipment, so that is those things are spelled out in this rule.

So in terms of application these rules shall applied to every producer, consumer or bulk consumer. These things are defined which are in with their involve in manufacture, sell, purchase and processing of electrical and electronic equipment of. Shall not applied to batteries, because battery has a separate rule shall not apply to my micro and small enterprises the battery has a separate rule and shall not apply to micro and small enterprises, radioactive waste, because they have been they have respective development acts ,so there is a different act for that, so those does not come into picture here.

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**Responsibilities...**

- Obtaining an authorization from the concerned State Pollution Control Board or Pollution Control Committee in accordance with the procedure under rule 9.
- Maintaining records in Form 2 of the e-waste handled and make such records available for scrutiny by the State Pollution Control Board (SPCB) or the Pollution Control Committee concerned.
- Filing annual returns in Form 3 to the State Pollution Control Board or Pollution Control Committee concerned, on or before the 30<sup>th</sup> day of June.
- **Responsibilities of collection centers:**
  - Obtain an authorization in accordance with the procedure under rule 9 from the SPCB or PCC.
  - Ensure that the e-waste collected is stored in a secured manner till it is sent to registered dismantler(s) or recycler(s) no damage is caused to the environment during storage and transportation of e-waste.

10

E-waste Management & Handling: Rules and Guidelines of 2011 & Incorporated new clauses of 2013

So in terms of different responsibilities, there is a responsibility of the producer. So what is the responsibility of producer? Producer of electrical, electronic equipment shall be responsible for collection of e-waste generated during manufacturing that is fine. And from the end of life of their product with the principle of extended producer responsibility, this is where I have a like a I do not like a based on my experience of different countries that I have been and working at different countries I have certain reservations, that if you make each of these producers responsible for collecting their own garbage, it is actually multiple work done by and every of these producers are just looking for a minute quantity of electronic waste coming out, so economy does not economy of a scale does not work.

So that is what I was trying to say that instead of having this individual companies doing it let us get money from this individual needs to a central pole, always what we always worry about is whenever there is money involve there will be corruption and nothing will work out, that problem is there, but as long as we can get rid of problem if you have a central quasi government body or a semi-government body which facilitates with this kind of collection then this is more practical.

Because asking each and every company to take their own electronic waste back it is will be a problem. It can be done through mail back program maybe they do not have to they can put mail back program that can be done, but for the big stuff mail back program also does not work that much and there will be cost involved in the transportation of the individual rather than it can be done like together towards having a cooperative or those kind of system.



So should ensure collection and channelization of authorising collection agencies, so we put a lot of we have a habit of putting lot of responsibilities on collection and channelization of authorising collection agencies. Setting up collection centres or take back system either individually or collectively, so collectively makes more sense, individually does to me does not make much sense.

Financing and organising a system individually or by joining a scheme. So this scheme, when they say joining a scheme that who will monitor this scheme, who facilitate this team, that we do not know that needs to be spelled out and I think that any semi-government agency should do it because that is they will be able to talk to them others people may not listen to those any other organisation.

Provide contact details and create awareness about hazards through publication, advertisement, posters. Affix a visible legible symbols on products to prevent e-waste being dropped on garbage. So those when they are talking about garbage, they are talking about regular garbage, so that is responsibility of the producer. Then there is a continuation of say obtain authorisation from state pollution control board, maintain record regarding the e-waste handle and then filing annual returns that they have to do on 30<sup>th</sup> day of June. So that is on annual report needs to be submitted, so that is the responsibility of the producers.

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**Responsibilities...**

- File annual returns in Form 3 to the SPCB or PCC before 30<sup>th</sup> June.
- Maintain records of the e-waste handled in Form 2.
- Responsibilities of bulk consumer:**
  - Consumers or Bulk consumers of electrical and electronic equipment shall ensure that e-waste generated by them is channelized to authorized collection center(s) or registered dismantler(s) or recycler(s) or is returned to the pick-up or take back services provided by the producers.
  - Shall maintain records of e-waste generated by them in Form 2 and disposal through registered recycler in Form 3
- Responsibilities of dismantler.**
  - Obtain authorization and registration from SPCB with the procedure under the rules 7 & 11.
  - Ensure that no damage is caused to the environment during storage and transportation of e-waste;

Responsibilities of the collection Centre is to again obtain an authorisation, so basically that is in permit. And then ensure that e-waste is stored in a safe manner, it is registered and it is sent to register dismantlers or recyclers, so that is where again we have registered dismantlers

and recyclers, but they are not able to get much garbage. No damage is caused to the environment during storage and transportation of e-waste, so that is a that is their responsibility.

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**Responsibilities...**

- Ensure that Processes do not have any adverse effect on the health and the environment in accordance with guidelines published by CPCB from time to time.
- Ensure that dismantled e-waste are segregated, non-recyclable/non-recoverable components sent to the registered recycling facilities for recovery of materials;
- File a return in Form 3 to SPCB or the PCC
- Do not process any e-waste for recovery or refining, unless he is registered with SPCB as a recycler.

■ **Responsibilities of recycler:**

- Obtain authorization and registration and ensure that the facility and recycling processes are in accordance with the guidelines.
- make available all records and file annual returns in Form 3 to SPCB or PCC.

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E-waste Management & Handling: Rules and Guidelines of 2011 & incorporated new additions of 2013

File annual returns, maintain records, so those things are there. In terms of bulk consumer, bulk consumer will be something like a huge organisation which has used lot of electronic and electrical items such as for example IIT Kharagpur will be a bulk consumer, because we have lots of computers and here we buy lots of computers in the year, many of the like a lot of computers becomes obsolete as well which becomes electronic waste.

So in this e-waste generation by them should be channelized to authorised collection centre, so as a organisation we need to send it to an authorised collection Centre. We cannot just give it to anyone has to go to an authorised collection Centre as per the new rule or registered dismantlers or recycler and is written to pick up or take back service provided by the producers or if it is a if the producers for example, Dell, if you buy lots of Dell computers and if Dell has a take back program we can always give it back to Dell and probably can get some discount or something from them.

So shall maintain records of e-waste generated in the form 2 and disposal registered recycler in form 3. So I am not sure how many institution do that at that is what they are supposed to do. Dismantlers they have to again authorisation and registration, so this is for SPCB and ensure that no damage is caused to the environment during storage, these are very pretty general statement.

(Refer Slide Time: 18:10)

**Responsibilities...**

- Ensure that Processes do not have any adverse effect on the health and the environment in accordance with guidelines published by CPCB from time to time.
- Ensure that dismantled e-waste are segregated, non-recyclable/non-recoverable components sent to the registered recycling facilities for recovery of materials;
- File a return in Form 3 to SPCB or the PCC
- Do not process any e-waste for recovery or refining, unless he is registered with SPCB as a recycler.
- **Responsibilities of recycler:**
  - Obtain authorization and registration and ensure that the facility and recycling processes are in accordance with the guidelines.
  - make available all records and file annual returns in Form 3 to SPCB or PCC.

12

E-waste Management & Handling Rules and Guidelines of 2011 & incorporated new additions of 2015

And that they do not have that process do not have adverse effect on health and environment, so this if you look at if you just go on Google and look at how the things had been done in the informal sector, they are actually causing lot of adverse effect on the health as well as on the environment, so but in terms of accordance with guideline published from time to time.

And ensure that dismantled e-waste, segregated non-recyclable, non-recoverable components sent to the registered recycling facility for recovery of materials. File a return in form 3, do not process e-waste for recovery, refining until it is registered with SPCB. So that is that is the responsibility of we were talking about this is the responsibility of a dismantlers. So many times dismantlers and recyclers are together, so but this is the responsibility of the dismantlers.

(Refer Slide Time: 18:30)

The slide features a green background with a white border. At the top left is the logo of the Ministry of Environment, Government of India. At the top right is the NPTEL logo. The title 'Responsibilities of State Pollution Control Board/ Pollution Control Committee' is centered at the top. Below the title, the text reads 'SPCBs/PCCs has been assigned the following duties:'. A bulleted list follows, with red square markers. The last bullet point is underlined. In the bottom right corner, there is a circular inset video of a man in a white shirt. The number '13' is in the bottom left corner, and a small line of text at the bottom center reads 'E-waste (Management & Handling) Rules and Guidelines of 2011 & incorporated new additions of 2013'.

Responsibilities of State Pollution Control Board/  
Pollution Control Committee

SPCBs/PCCs has been assigned the following duties:

- Preparation of inventories of e-waste.
- Granting Authorization and Registration.
- Monitoring of compliance of authorization and registration conditions.
- Maintaining information on the conditions imposed for authorization.
- Taking action against violations of the standards and guidelines.
- Ensure that collection center should not store e-waste for a period exceeding one hundred and eighty days.

13

E-waste (Management & Handling) Rules and Guidelines of 2011 & incorporated new additions of 2013

Then responsibility of a recycler is again get the permit, so this thing you will find to all authorisation and registration and make available all records in form 3 to SPCB or pollution control board, so that is you need to make available for the record.

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This slide is identical to the one above, showing the responsibilities of SPCBs/PCCs. It includes the same logos, title, bulleted list of duties, inset video, and footer text.

Responsibilities of State Pollution Control Board/  
Pollution Control Committee

SPCBs/PCCs has been assigned the following duties:

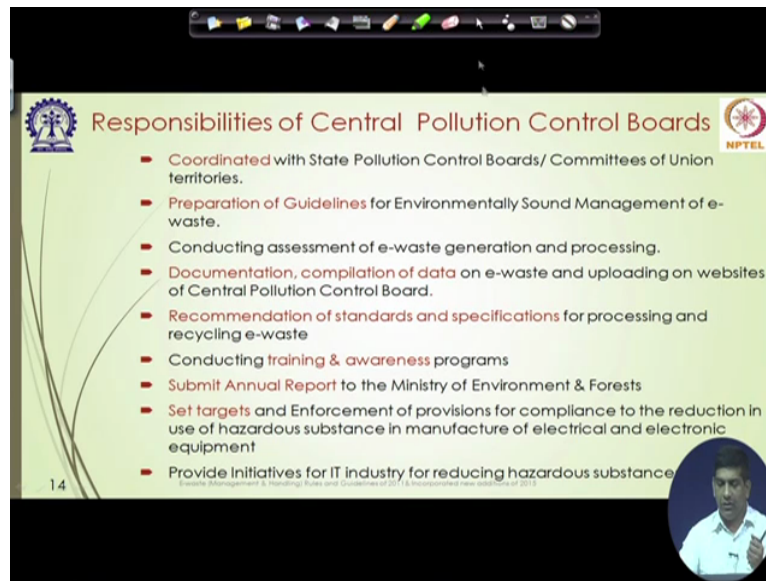
- Preparation of inventories of e-waste.
- Granting Authorization and Registration.
- Monitoring of compliance of authorization and registration conditions.
- Maintaining information on the conditions imposed for authorization.
- Taking action against violations of the standards and guidelines.
- Ensure that collection center should not store e-waste for a period exceeding one hundred and eighty days.

13

E-waste (Management & Handling) Rules and Guidelines of 2011 & incorporated new additions of 2013

Then responsibility of state pollution control board or pollution control committee, preparation of inventories is of e-waste from that particular state. Granting authorisation, monitoring of compliance, maintaining information, taking action against violation of the standards, ensure that collection Centre should not store e-waste for a period exceeding 180 days, so that is they are not supposed to store more than that, they have to give it to the like a dismantlers and recyclers.

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Slide 14: Responsibilities of Central Pollution Control Boards

- Coordinated with State Pollution Control Boards/ Committees of Union territories.
- Preparation of Guidelines for Environmentally Sound Management of e-waste.
- Conducting assessment of e-waste generation and processing.
- Documentation, compilation of data on e-waste and uploading on websites of Central Pollution Control Board.
- Recommendation of standards and specifications for processing and recycling e-waste
- Conducting training & awareness programs
- Submit Annual Report to the Ministry of Environment & Forests
- Set targets and Enforcement of provisions for compliance to the reduction in use of hazardous substance in manufacture of electrical and electronic equipment
- Provide Initiatives for IT industry for reducing hazardous substance

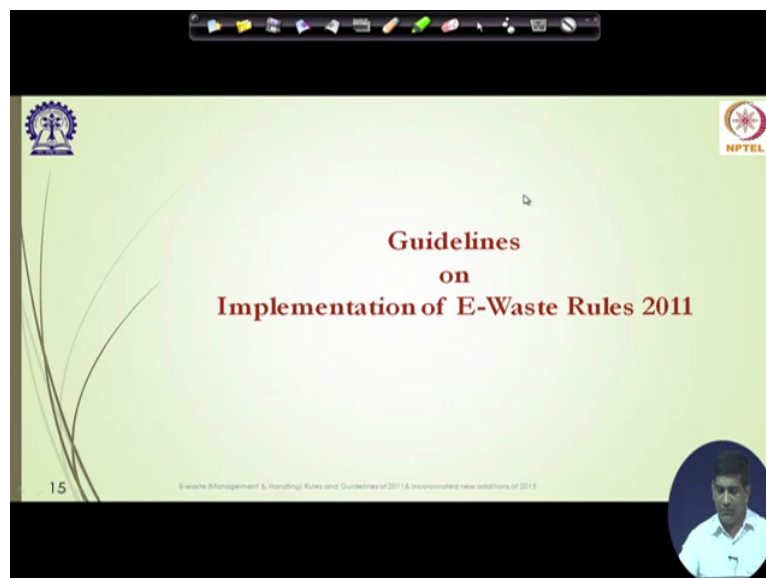
14

E-waste Management & Handling Rules and Guidelines of 2011, incorporated new additions of 2014

NPTTEL

Central pollution control board again kind of one level up, they look at state pollution control board, preparation of guidelines, assessment of e-waste generation, documentation, compilation, recommendation, so all those general stuff, conducting an awareness programme, submit annual reports, set targets, provide initiative for IT industry for reducing hazardous substances, so those things are done by general pollution control board.

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Slide 15: Guidelines on Implementation of E-Waste Rules 2011

15

E-waste Management & Handling Rules and Guidelines of 2011, incorporated new additions of 2014

NPTTEL

**Guidelines on Implementation**

- A guidance document has been developed for implementation of the provisions of the E-Waste (Management & Handling) Rules, 2011.
- To help Producers, Consumer & Bulk Consumer, Collection Center, Dismantler, Recycler and Regulatory agencies (SPCBs/PCCs) in effective compliance/implementation of these rules.
- To provide guidance to collection center, dismantler and recycler.
- To help Producers for understanding the concept and scope of "extended producer responsibility" (EPR).

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So this is in terms of, leachate, like some of the guidelines for implementation of e-waste rules, the guidance documents has been developed in terms of how to implement it. So to help producers, consumers, dismantlers to effective compliance, to provide guidance of collection Centre, dismantlers, to help producers for understanding the concept and scope of EPR, so guidance document has been published which is available.

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**E-waste (Management & Handling) Rules of 2015**

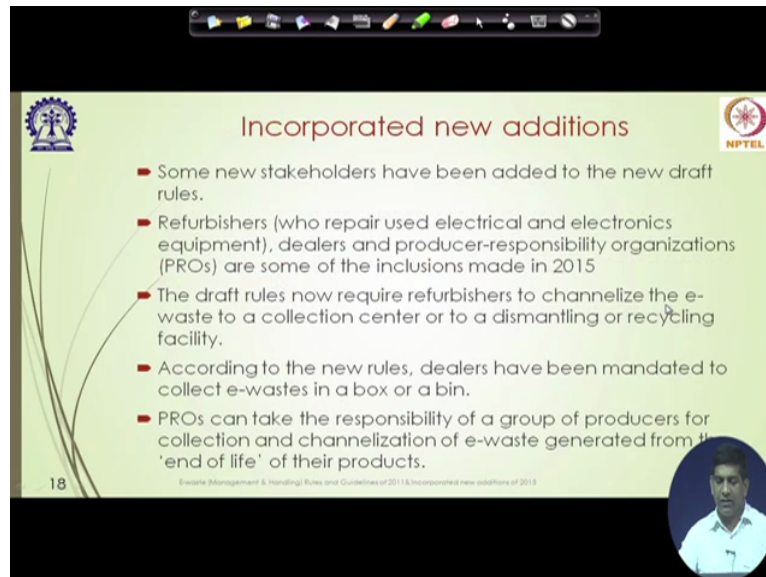
- The draft of E-waste rules, 2015, has broadened the scope of the existing one by including several major provisions.
- Earlier, there were several defects in the rules for stakeholders which prevented their proper implementation.
- The new draft rules are with clarity and lay down the responsibilities of various stakeholders in clear terms.

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And in terms of e-waste management rules of 2015, what they did? It broaden the scope by including several major provisions. Earlier there were several defects in the rules for stakeholders which prevented their proper implementation, so the new draft rules has

clarified something, had clarity and lay down responsibilities in various stakeholders in clear terms which will go over.

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Slide 18: Incorporated new additions

- Some new stakeholders have been added to the new draft rules.
- Refurbishers (who repair used electrical and electronics equipment), dealers and producer-responsibility organizations (PROs) are some of the inclusions made in 2015
- The draft rules now require refurbishers to channelize the e-waste to a collection center or to a dismantling or recycling facility.
- According to the new rules, dealers have been mandated to collect e-wastes in a box or a bin.
- PROs can take the responsibility of a group of producers for collection and channelization of e-waste generated from the 'end of life' of their products.

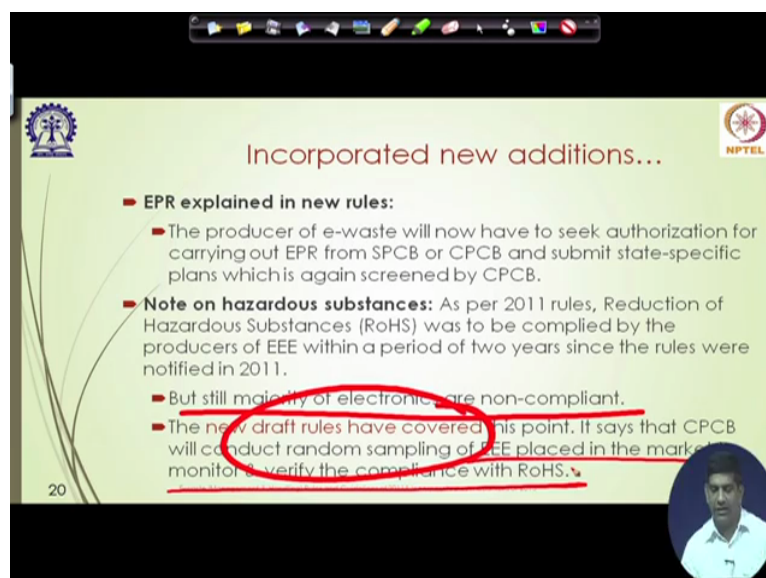
18

E-waste Management & Handling Rules and Guidelines of 2011 & incorporated new additions of 2015

NPTTEL

So there were some new incorporated new additions such as refurbishers who repair used electrical, electronic equipment, dealers and producer responsibility organisation are some of the inclusions made in 2015 which was not there. Another thing was refurbishers has to channelize the e-waste to a collection Centre or to a dismantling of recycling facility. The new rules the dealers have to mandate to collect e-waste in a box or a bin. PROs can take the responsibilities of a group of producers for collection and channelization of e-waste generated from the end of life of the products, so those things have been added.

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Slide 20: Incorporated new additions...

- EPR explained in new rules:**
  - The producer of e-waste will now have to seek authorization for carrying out EPR from SPCB or CPCB and submit state-specific plans which is again screened by CPCB.
- Note on hazardous substances:** As per 2011 rules, Reduction of Hazardous Substances (RoHS) was to be complied by the producers of EEE within a period of two years since the rules were notified in 2011.
  - But still majority of electronics are non-compliant.
  - The new draft rules have covered this point. It says that CPCB will conduct random sampling of EEE placed in the market to monitor & verify the compliance with RoHS.

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NPTTEL

And the other new future is deposit refund scheme, where you can deposit you will have some under this portion sale price shall be retained by the producers and be refundable to consumers when the end of life of products are channelized according to the prescribed methods. So here there was always a some sort of debate on how it will be done, like what will be the modalities of how it can be done, because we have always worried about.

Say, most of the time what happens is you go to a big city to buy your electronics, say even if you are staying in many people like to go to Delhi or other places where they like to buy their electronics from there because sometimes they are cheaper, you get more variety. But when it gets bad, say you are sitting in Kharagpur, now you are not going to Delhi to replace it. So not going to Delhi to give it back to get some money get your money back.

So in that case, how it will work? So those things were there. So it was one of there could be several ways to get around it, one way which kind of it could be that things get linked to the Aadhaar number because now we do have Aadhaar number which is becoming mandatory for it is not mandatory as from Supreme Court but it is pretty much mandatory for all that for many things we do now.

So most of the people will have the Aadhaar number, if is somehow this Aadhaar number is linked to it and the Aadhaar is linked to the bank account. So it is whatever, whenever he like, the person goes and deposits it back, since it is a that money can be transferred into his account, he does not have to go and physically like submit or show the old receipt that he or she had it should be all put under one central scheme like that.

So the new rules have tried to simplified, there are some of the formalities it now asks produces to seek authorisation for carrying out EPR from SPCB in case they are implementing it in a particular state or CPCB in case of pan Indian implementation, so those authorisation have been simplified. EPR is explained in new rules like producers of e-waste will now have to seek authorisation for carrying out EPR from SPCB and CPCB to submit state specific plans which is again screened by CPCB, so they have to have a plan for that.

So not there is a hazardous substance they have added a note on that as per 2011 rules. Reduction of hazardous substances that is for RoHS was to be complied by producers of electrical and electronic equipment's within a period of two years. Since the rules were notified in 2011 it was supposed to be implemented in 2012, so even from there if you look at



2014, definitely by 2014, they have to comply, but still majority of electronic were non-compliant.

So the new draft rule have cover that point and it says the CPCB have conduct random sampling of EEE placed in the market to monitor and verify the weather they have reduced there hazardous substance or not. So those things is being kind of stressed upon in the new rule.

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**Drawbacks and Limitations**

- Penalty provisions: Whoever fails to follow with the rules will be punishable with imprisonment which may extend to 5 years or with fine which may extend to Rs 1 lakh.
  - These provisions in 2015 are same as existing rules of 2011.
  - Stringent panel provisions are must which can made them to stay away from violating rules.
- More than 90 per cent of e-waste generated in the country is handled by the informal sector, but still the rules are silent on this issue.
  - It is essential to release long-term policy on e-waste to integrate the informal sector with mainstream.
- Overall, 2015 draft rules have incorporated new additions with a goal of better management of e-waste in the country.

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So there are some drawbacks and limitations in terms of the rules, the penalty provisions like whoever fails to follow with the rules will be punishable with imprisonment which maybe extended to 5 years or fine which may be extend to one lakh. So these are the same provisions which are there in 2011 probably it is too less. Stringent panel provisions should could have been made which can made them to stay away from violating rules and most of the 90 percent of e-waste generated in the country is handled by the informal sector but rule is totally silent on the issue, rule is not talking about informal sector at all.

So that is again say the problem will not get solved until we identify that yes this is the problem, so and that could be part of the solution too. So in formal sector, whether it is a municipal solid waste or electronic waste informal sectors are there they will be there and I do not think any political party any political establishment will try to get into and then take their livelihood away, because it is a very sensitive issue, there is a social issue they also need to make their living they have been making living in this that way.

But what can easily be done, is bring them into a formal sector, merging like having a marriage between these informal and formal sector by giving some of this skill, all of this skill Indian mission and different missions that we talk about start-up or those missions that we are talking about, that should help this informal sector, because they are also part of our country it is not that they could they are very much part of they also have the same right that you and I have.

So they have been working on this area, yes it is not may not be 100 percent kind of so court legal way of doing their job, but we have to make a living. So in that case and they are doing a decent job at least in terms of collection and dismantling, but problem comes when they go over into processing of those try to recover of those rare Earth and precious metal. So, but if you do not talk about that since more than 90 percent of the waste is done by the informal sector but we do not talk about it at all in the rule.

In the municipal solid waste rule at least we are talking about them, let us formalise them. In e-waste management rule, we have kept totally quite so that is not really going to work, so that is it has to be like a addressed. It is essential to release a long-term policy on e-waste and integrate the informal sector in mainstream. Overall the rule has probably new addition with a goal of better management of e-waste in the country.

So, let us stop here and then I will we will go over some of these e-waste management rules in more in detail we will go over each one of these components and little bit more detail in the next video, and that will cover our coverage of e-waste management rules for in the Indian scenario and so that is with that let us close this video.

Again any questions any clarifications if there is any you want to add something to the discussion some of you may be working, if some of you are working in electronic waste area if you are from e-waste management company please share your thoughts. Let us learn from your experience, it see everybody can learn there is no age where people stop learning, we can learn until we die.

So just share your experience if you have something new to add a feel free to do that, put it on the discussion forum so that we all can learn we all can debate on that. And please do that survey on electronic waste which have been given to you. Please do that, so we can use this information and make a nice summary of both MSW survey that we did earlier and this survey, will put a nice video together and then do that at the end of this course so that we will

share this information with each other, again thank you and I will see you again in the next video.