



*Dr. Aijaz Husain is an Assistant Professor of Law ( Senior Scale)at Shia PG College, Lucknow. He has completed his LL.M from the University of Lucknow, Lucknow with specialization in Business Laws. He qualified UGC NET exam in the year 2010.He has a teaching experience of more than 12 years and had previously been working as an Assistant Professor of Law, in the Amity University, Lucknow.He contributed 6 Research Papers in various reputed journals and has presented numerous papers in national and international Seminars, Conferences and workshops..His ongoing Ph.D. is in the area of Environmental Laws for which he has exemplary contribution in the form of articles and book Chapters.*



*Dr. Seema Siddiqui is an Assistant Professor, Faculty of Law, Integral University, Lucknow. She has completed her Ph.D. degree with specialization in International Humanitarian Law from Dr. Ram Manohar Lohia National Law University, Lucknow. Dr Seema holds more than 15 years of teaching experience. Prior to joining Integral University, she served as an Assistant Professor in Dr. Ram Manohar Lohia National Law University and BBD University, Lucknow. Having the experience of designing legal curriculum of various universities and commencing law courses in prominent universities of the city, In her present academic discourse, she had authored a book titled 'jus Post Bellum Rules Under Law of Armed Conflict' and also holds an edited book to her credit titled 'Artificial Intelligence: A Socio Legal Paradigm'. She is continuously contributing exemplary readings in different prominent journals and book chapters.*

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SUSTAINABLE E-WASTE MANAGEMENT: PRINCIPLES AND PRACTICES

# SUSTAINABLE E-WASTE MANAGEMENT

## PRINCIPLES AND PRACTICES



**Editors**

**Dr. Aijaz Husain  
Dr. Seema Siddiqui**

# **Sustainable E-Waste Management: Principles and Practices**

## **Editors**

**Dr. Aijaz Husain**

Assistant Professor, Shia PG College, Affiliated to  
University of Lucknow, Lucknow, U.P.

**Dr. Seema Siddiqui**

Assistant Professor, Faculty of Law, Integral University,  
Lucknow.



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## CHAPTER 17

# Right to Repair and E-Waste: A Legal Analysis

*Mr. Faiz Osmani\**

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### INTRODUCTION

Imagine working on an important project when, without warning, your laptop screen flickers and turns black. Attempts to restart it fail, and a visit to the authorized service center offers no real solution. The technician diagnoses a motherboard failure, rendering the device unusable. The only option? Purchasing a new device, as the cost of repair is nearly equivalent to that of a replacement.

This scenario is increasingly common. Each year, millions of repairable electronic devices are discarded simply because spare parts and manuals are not made available. Manufacturers frequently adopt tactics like proprietary screws, software locks, and restrictive warranties to obstruct third-party or self-repairs. Devices are often intentionally designed to resist repair—components are glued or welded rather than affixed with standard fasteners. These barriers not only undermine consumer autonomy but also hasten obsolescence, fuelling the global e-waste crisis. Much of this waste is improperly managed, ending up in landfills or informal recycling streams, with dire environmental and public health consequences.

E-waste comprises discarded electronic products—such as phones, laptops, televisions, and medical equipment—that are no longer functional or have become obsolete. Unlike conventional waste, it contains both valuable metals like gold and copper and hazardous substances such as lead, mercury, and cadmium. When improperly disposed of, these toxins leach into the environment, polluting soil, water, and air. Informal recycling methods, such as open-air burning, expose workers to harmful chemicals, increasing the risk of cancer, neurological disorders, and other serious health issues.

The Right to Repair (R2R) movement advocates for consumers' right to repair and modify their devices without excessive

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\*Assistant Professor, Faculty of Law, Integral University, Lucknow, U.P., India

manufacturer restrictions. By mandating access to spare parts and repair manuals, R2R laws extend product lifespans and help reduce e-waste. The European Union and several U.S. states have already implemented R2R laws, while India is actively considering similar legal frameworks.

This chapter will analyse the intersection between repair restrictions and e-waste accumulation, exploring how legal frameworks across different regions address—or fail to address—this growing issue. It will also examine the potential role of R2R laws in mitigating environmental harm, the regulatory gaps that remain, and the broader implications for consumer rights and sustainability.

### **Right to Repair**

The Right to Repair movement emerged as a response to growing consumer frustration over declining repairability and the environmental toll of e-waste. In earlier times, users could fix devices using basic tools and limited expertise. However, manufacturers increasingly adopted design strategies—such as proprietary screws, glued-in batteries, and software locks—that curtail repair options and reinforce planned obsolescence. These practices not only erode consumer autonomy but also accelerate e-waste generation, now one of the fastest-growing waste sources worldwide.

In sectors like agriculture and consumer electronics, repair restrictions have sparked significant public backlash. Farmers using John Deere tractors, hindered by software locks and exclusive diagnostic tools, faced mounting repair costs and limited autonomy—prompting protests and legal challenges. Similarly, companies like Apple and Harley-Davidson have been criticized for discouraging third-party repairs through restrictive design and warranty practices. These limitations compel consumers to discard functional devices over minor faults, fuelling overconsumption and e-waste. This widespread frustration has ignited a broader legal and social push for repair rights.

The core principles of R2R are straightforward: consumers should have access to repair manuals, affordable spare parts, and diagnostic tools; independent repair professionals should be able to