Confederation of Indian Industry

IPR issues with respect to Recycled Product

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We are grateful to Dr Naushad Forbes, Past President CII, Chairman, CII National Committee on Intellectual Property and Co - Chairman, Forbes Marshall for his guidance and encouragement during the writing of this book.

The idea of the Whitepaper was conceived by Mr Satish Reddy, Chairman, Dr. Reddy's Laboratories Ltd, during the CII Mission to S Korea in April 2023, about Innovation and IP. It draws inspiration from Mr Satish Reddy's thoughts that India needs to identify key imperatives, challenges, drivers and opportunities in the IP strategies for the recycled Products. We would like to thank Mr Reddy for his thought leadership.

We are also grateful to Dr Shakar Venugopal, Vice President, Mahindra & Mahindra and his team for sharing his insights and comments as well as compiling the comments from the Stakeholder and preparing the draft copy of the Whitepaper.

This is the 1st edition of this Whitepaper, and it comes to its final published form after a series of internal reviews and discussions. CII would like to specifically acknowledge the contributions of its members - Dr Vinodh S Mewani, Senior Lead Engineer IPR, Mahindra & Mahindra, Dr Vishal Anand, Head R&D Planning & Strategy, Reliance Industries Limited, Dr Ramesh Kumar Verma, Manager-IPR, Tata Chemicals Ltd, Mr Munish Sudan, Innovation & IP Management, Tata Steel, Dr Pranay Prabhugaonkar, Associate Vice President and Head of IPRs – Region India, Siemens Technology and Services Private Limited and Dr Shankar Venugopal, Vice President, Mahindra & Mahindra for their inputs on key IP issues related to recycling in their industry domains. We would like to thank Mr Saha, Senior Advisor, CII and Ms Nabanita Mukherjee, Director , CII for advising and leading the work from CII side during the content development and publication of the Whitepaper. Wide span of ideas, recommendations and suggestions covered by the Whitepaper reflect the quality of extensive deliberations held by the above stakeholders and the CII Team.

It is sincerely envisaged that the Whitepaper will provide useful information to the many important sectors regarding the recycled product and contribute to the setting up of a robust IP regime in India.

Foreword

Dr Naushad Forbes
Past President CII,
Chairman, CII National Committee on Intellectual Property
and Co - Chairman, Forbes Marshall

Confederation of Indian Industry (CII) has constantly worked towards a robust, impactful, and conducive IP eco system in the country, especially for Indian industry. Through the collective experience of its members, CII addresses multiple dimensions of intellectual property rights necessary for policy advocacy, developing laws, developing human resources, awarding industries for their IPR systems, and preparing reports on topics of interest.

India is on a path of accelerated growth and Indian Industry has always been proponent of a philosophy of “Responsible Growth” where circularity, sustainability and mitigation of environmental challenges have been priority considerations.

Recycling provides many benefits to our environment. By recycling the materials, we create a healthier planet for ourselves and future generations. The National Recycling Coalition reports that recycling has created 1.1 million jobs, $236 billion in gross annual sales, and $37 billion in annual payroll. Recycling of products is critical to saving the earth from avoidable pollution and resources.

Several industries can benefit from the principles of circularity and include electronics, computers, chemicals, pharmaceuticals, automobile and textile, Recycling is at times restricted by existing IPRs such as patents, copyrights and designs and contract conditions. Issues are complex and require combined efforts of industry, governments and international bodies.

The CII National Committee on Intellectual Property has produced a detailed report on “IPR issues with respect to Recycled Product”, with short and long-term recommendations.

We hope you find this report useful.

Executive Summary

India, a resource-intensive economy with a large and rapidly growing population, possesses immense potential to be a leader in the circular economy, thereby fostering sustainable growth and a more prosperous and equitable society. The circular economy goes beyond resource efficiency and recycling, and its adoption helps reduce waste, conserve resources, and mitigate climate change. Moving toward a circular economy helps meet India's NDC targets, UNSDGs, LiFE goals etc.

Recently, there has been a significant interest in development of sustainable materials as well as recycling and reuse of plastics, e-wastes, petroproducts, battery materials and metals & alloys. This provides a huge opportunity to develop a strong IP portfolio for companies. At the same time, there are challenges related to protecting process patents, identifying potential infringers, and making the inventions available for a larger spectrum to truly achieve sustainability.

This Whitepaper of CII developed upon certain aspects of the IP issues and actions that the government can initiate as well as IP policy changes that will drive large-scale recycling and reuse. Not only this, but the whitepaper can also provide useful information to educational & research institutions and industries doing research in this area and fill up gaps for moving forward. CII firmly believes that it is essential to have change in the IP creation and protection ecosystem by mechanisms to develop new doctrines for new technologies, modifying the existing system, to accommodate this new change and reshaping of new policies of IPRs". I hope that industry, policy makers, academicians, researchers and start-ups will find this Whitepaper useful and encourage them to examine the connected IPR needs carefully and design future plans.

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Background

The three pillars of Sustainable Development Goals (SDGs), as adopted by The United Nations in 2015 are to end poverty, to protect the planet and all people enjoy peace and prosperity. Environmental sustainability is one of the most important thrust areas to achieve the SDGs. For this, it becomes critical to focus on the two of the 3Rs of waste management, namely, Recycle & Reuse (the first R being Reduce). With the nations moving towards increasingly consumption-based economy, all forms of waste – plastics, petroproducts, metals & alloys, semiconductors, battery materials, glasses are filling the landmines at alarmingly fast rate. This has raised concerns over safe and environmentally acceptable disposal of these wastes. At the same time, they provide an opportunity to address to certain extent the critical mineral resource gap.

A 'one-size-fits-all' approach to recycling seems unlikely, hence comprehensive approach is required. Government policies play a major role in developing recycling capabilities, but it is important to note that the economics of recycling are highly dependent on the capacity and technological capabilities.

Intellectual Property (IP) plays a critical role in encouraging innovation and building the required technological capabilities [1]. Under US & EU Patent laws, repair activities deemed 'reconstruction' or 'modification' are considered to directly infringe patents in the U.S. [2, 3, 4] and the EU [5, 6] alike. For start-ups, IP stimulates investment, providing confidence for potential investors that the new technology has protection against duplication. For existing recycling technologies, the exclusivity provided by IP rights gives companies a competitive edge on product purity and/or in reducing manufacturing costs. And in all areas, the dissemination of knowledge through patents spurs innovation.

Recycling & reuse across various industries can generically be categorized under the following 5 process steps:

Figure 1: 5 Stages of Recycling & Reuse Process

While collecting and sorting may not have IP issues, various IP challenges will have to be addressed in the dismantling, extracting and remanufacturing processes.

This report tries to address various IP issues that potentially could arise during dismantling, extracting, and remanufacturing of various items and provides possible solutions that can help solve these IP issues.

Key Issues – Technical and Intellectual Property (IP)

A. Dismantling

Technical issues

In case of electronic goods and electric vehicles, semi-conductor components and battery modules are typically covered under certain proprietorship, like, battery modules/cell packs cannot be teared open by anyone other than the manufacturer. In such a scenario, dismantling of battery module at their end-of-life to refurbish for another/same application becomes challenging.

B. Extracting

IP issues

i. Many times, processes pertaining to efficient recycling of environmentally critical components are maintained as trade-secrets by big players. It is important for these big players to share the knowledge to enable efficient & sustainable extraction of say, metals & alloys.

ii. MSMEs might own the technology and patent rights to recycle/reuse a given product. But they might not have the resources which only the OEMs might possess.

iii. New recyclable materials and new methods may be easily patented. However, patenting incremental changes to existing materials and methods can be more challenging. Majority of recycling/re-use technologies would fall in the category of incremental innovation (e.g., recovery enhancement, segregation of various type of raw material, purity enhancement, re-use of recycled material to achieve the same results, cost, greening of the process etc.

C. Remanufacturing

IP issues

i. If the recycling or refurbishment (reuse) of the end-of-life product results in a patented or design registered or trademarked product, then this will amount to infringement of the IP of the original owner. For example, extracted alloy may not have the right composition to remanufacture a component. And the composition might be protected by a 3rd party. Or,

one of the components of EV battery, say, anode or cathode or separator or electrolyte or their combination together might be a patent protected architecture. This would need licensing rights from the IP owner. This also applies equally for the aesthetics of the remanufactured object that might be protected by one or more design registrations.

ii. There are currently challenges in repairing certain high technology products, where proprietary information related to components are typically maintained as trade secret by the OEMs.

iii. Remanufacturing typically involves implementing information provided in user manuals, guides, schematics, software and programming codes. This would constitute infringement of copyrighted information.

iv. Recycling and reuse processes can be set-up at small scale by Micro, Small & Medium Enterprises (MSMEs). In many cases, the OEM of the original product in need of recycle & reuse might have patented technologies for end-of-life recycling.

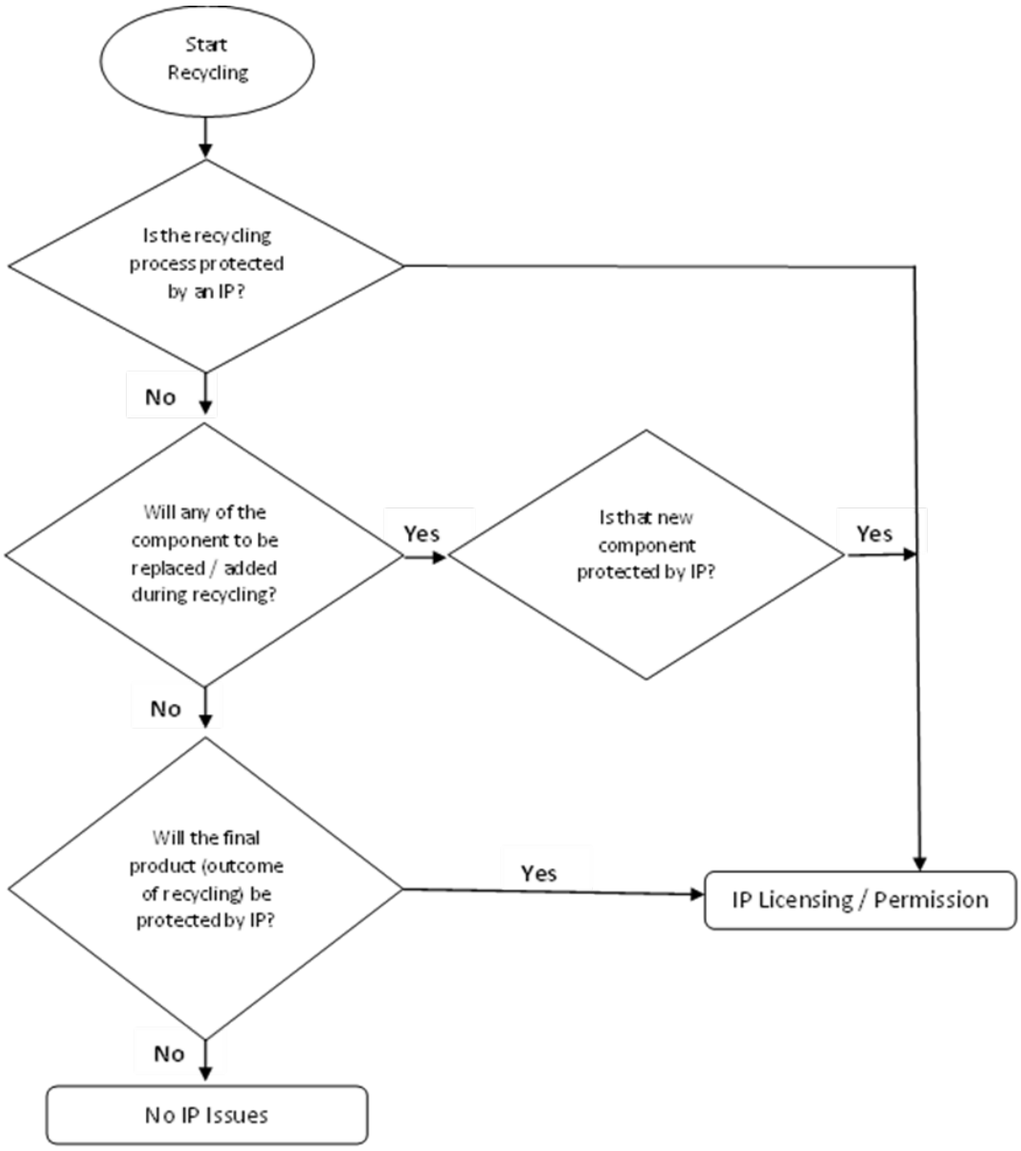
v. Although many claim to pledge patents, patents in the green sector are not fully in the public domain and free to be used by interested parties [7].

vi. Reservations among OEMs to collaborate, to share, and to license to accelerate cross-industry innovations in this environmentally critical area.

Long and Short Term Recommendations – For Intellectual Property Office, Indian and DPIIT

1. Indian Patent Office should proactively frame guidelines through inputs from MSMEs and OEMs towards an IPR standard for sustainable inventions. A couple of points that can be considered are given below, followed by a draft framework workflow:
    - The guideline must address the aspects of exclusivity of patents related to recycling/ reusing technology.
    - Patents in these domains could have shorter patent-term that would accelerate the licensing and large-scale implementation of patented technologies.
2. European Union has drafted a Design Directive as part of 'Right to Repair' in the must-match automotive spare parts domain. On similar lines, a 'Right to Remanufacture' regulation must be brought in to accelerate the recycling/reuse of environmentally critical materials.
3. Sharing of inventions across industries, with suppliers, with start-ups through licensing on fair and reasonable terms, and reciprocation of innovations from the licensee to the licensor as incentive.
4. The IPO and government must formulate guidelines to fast-track compulsory licensing for technologies that have huge impact on society, especially in the areas of recycling and sustainable living.
5. IPO/government must facilitate negotiations to fast-track IP transfers/licensing.
6. IPO currently lacks a searchable database for Indian patents and patent applications. A user-friendly searchable database that has special categorization for patents related to environmental/recycling/reuse/remanufacture technologies.
7. The scope of remanufacture must be defined clearly to set the boundaries on what constitutes a remanufacturing [8].
8. There should be new examination guidelines and sensitization of the technology for all stakeholders.
9. Awareness needs to be enhanced amongst the stakeholders.
10. Branding guidelines for re-furbished materials and Quality standards to address the challenge and reputation should be discussed and guidelines should be published.

Figure 2: Framework for managing IP during recycling



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Confederation of Indian Industry

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering Industry, Government and civil society, through advisory and consultative processes.

CII is a non-government, not-for-profit, industry-led and industry-managed organization, with around 9,000 members from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 300,000 enterprises from 286 national and regional sectoral industry bodies.

For more than 125 years, CII has been engaged in shaping India's development journey and works proactively on transforming Indian Industry's engagement in national development. CII charts change by working closely with Government on policy issues, interfacing with thought leaders, and enhancing efficiency, competitiveness and business opportunities for industry through a range of specialized services and strategic global linkages. It also provides a platform for consensus-building and networking on key issues.

Extending its agenda beyond business, CII assists industry to identify and execute corporate citizenship programmes. Partnerships with civil society organizations carry forward corporate initiatives for integrated and inclusive development across diverse domains including affirmative action, livelihoods, diversity management, skill development, empowerment of women, and sustainable development, to name a few.

As India strategizes for the next 25 years to India@100, Indian industry must scale the competitiveness ladder to drive growth. It must also internalize the tenets of sustainability and climate action and accelerate its globalisation journey for leadership in a changing world. The role played by Indian industry will be central to the country's progress and success as a nation. CII, with the Theme for 2023-24 as **'Towards a Competitive and Sustainable India@100: Growth, Livelihood, Globalisation, Building Trust'** has prioritized 6 action themes that will catalyze the journey of the country towards the vision of India@100.

With 65 offices, including 10 Centres of Excellence, in India, and 8 overseas offices in Australia, Egypt, Germany, Indonesia, Singapore, UAE, UK, and USA, as well as institutional partnerships with 350 counterpart organizations in 133 countries, CII serves as a reference point for Indian industry and the international business community.

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