

International Journal Research Publication Analysis

Page: 01-13

GREEN HUMAN RESOURCE MANAGEMENT: STRATEGIES AND FOLLOWS

^{*1}Rajesh R., ²Dr. S. Vijaya Rani

¹Assistant professor, Department of MBA, Ganadipathy Tulsi's Jain Engineering College
vellore.

²Associate Professor, Department of MBA, SRM Institution of Science and Technology,
Ramapuram, Chennai.

Article Received: 18 June 2026

*Corresponding Author: Rajesh R.

Article Revised: 08 July 2026

Assistant professor, Department of MBA, Ganadipathy Tulsi's Jain Engineering College
vellore.

Published on: 28 July 2026

DOI: <https://doi-doi.org/101555/ijrpa.7859>

ABSTRACT

Recently, there has been observed an increasing awareness within business communities on the significance of going green and adopting various environment management techniques. As the corporate world is going global, the business is experiencing a shift from a conventional financial structure to a modern capacity-based economy which is ready to explore green economic facets of business. Today, Green Human Resource Management (GHRM) has become a key business strategy for the significant organizations where Human Resource Departments play an active part in going green at the office. The paper largely focuses upon the various Green Human Resource Practices pursued by the organizations all over the world and, explains the simplified meaning of GHRM. The study also adds to the extant literature by discussing future direction of some GHRM functions. Finally, the paper suggests some potentially prolific HR initiatives for Green organizations.

KEYWORDS: Green Human Resource Management environment management green initiatives paperless office conservation.

1. INTRODUCTION

Twenty-first century has been showing heightened interest in the environmental concerns all around the globe irrespective of related fields be it politics, public, or business. The recent interest in environmentalism globally has arisen from specific treaties to combat climate change, e.g. Kyoto 1997, Bali 2007 and Copenhagen 2009 (Victor, Citation2001). Owing to

the harmful consequences of industrial pollution and waste materials, including toxic chemicals, governments and NGOs round the globe promoted regulations and policies with effect of slowing down and to some extent even reverse the destruction of natural resources and its negative effect on the mankind and the society as a whole (Christmann & Taylor, Citation2002; Shrivastava & Berger, Citation2010).

Given the present situation the organizations have also to find out ways and techniques to deal with reduction in ecological footprints besides dealing with the economic issues. In order to attain success within the corporate community and to facilitate attainment of profit by the shareholders, organizations nowadays have to concentrate on social and environmental factors along with economical and financial factors (Daily, Bishop, & Steiner, Citation2007; Govindarajulu & Daily, Citation2004). The successful implementation of these sustainable corporate strategies within an organization requires both strong leadership and a concrete process (Glavas, Senge, & Cooperrider, Citation2010). The sustainability issue is fast moving up on the list of priorities of the leaders of corporate world as the awareness on incorporating “green” into the corporate strategy is making its way in business, but still the topic is not comfortable with most practitioners in the HR environment (Wirtenberg, Harmon, Russell, & Fairfield, Citation2007).

Though a substantial extent of existing literature deals with the topic of Green HRM, there is still ambiguity associated with the effective implementation of green HR management policies in organizations round the globe to attain absolute green corporate culture. This article comprehends how corporations are taking initiatives to endorse environment management program by developing human resource policies and ascertain different processes involved in green HRM on the basis of extant literature in the area. Further, we move on to reviewing the literature on the HR aspects of GHRM, which helps in identifying how corporations today develop human resource policies for going green. The study also aims to provide simplified insight on some common GHRM processes and attempts to suggest some green initiatives for HR.

1.1. Objectives

The main purpose of this study is to:

•Provide with a basic understanding of green HRM to the readers,
•Highlight different significant works on green HRM by other workers, and
•Elaborate on various green practices that can be incorporated for building a Green workplace.
•Attempts to suggest some green initiatives for HR.

1.2. Methodology

The study is primarily based upon the secondary data. For this extant literature related to the topic from different databases, websites and other available sources were collected. A systematic review of collected literature was done in detail.

1.3. What is Green HRM?

The term Green HRM has become the buzz word within the business field at present and its significance is increasing manifold with the passage of time. This term has also its secured position as a hot topic in recent research works since the awareness on environmental management and sustainable development has been increasingly rising day by day all round the globe. Today the topic Green HRM not only includes awareness toward environmental affairs, but also stands for the social as well as economical well-being of both the organization and the employees within a broader prospect.

Before proceeding further, first of all we take up the question, “what is Green HRM?” Different authors have given different definitions for this term such as—“Green HRM is the use of HRM policies to promote the sustainable use of resources within organizations and, more generally promotes the causes of environment sustainability” (Marhatta & Adhikari, Citation2013, p. 2). GHRM is directly responsible in creating green workforce that understands, appreciates, and practices green initiative and maintains its green objectives all throughout the HRM process of recruiting, hiring, training, compensating, developing, and advancing the firms human capital (Mathapati, Citation2013, p. 2). It refers to the policies, practices, and systems that make employees of the organization green for the benefit of the individual, society, natural environment, and the business (Opatha & Arulrajah, Citation2014, p. 104).

1.4. Need for GHRM

Last two decades of this century have witnessed a unanimous consensus for the need of a realistic environmental management drive all over the world. This effort was undertaken since the damaging effects of different pollutants among which the industrial wastes being the major culprit that has been deteriorating and depleting our natural resources very fast has been evident. The “Magna Carta” on Human Environment was declared in the first United Nation’s (International) Conference on Human Environment held in June 1972 in Stockholm declared that to defend and improve the human environment for present and future generation have become an imperative goal for mankind (Shaikh, Citation2010, p. 122). The Green HRM literature is largely a western one and, given the importance of Asian economic development for environmental management, this is an important gap for future studies to

reduce (Renwick, Redman, & Maguire, Citation2013, p. 3). Scholars of management around the world are now analyzing various managerial practices that can facilitate the achievements of the goals of GHRM and also have a significant impact on the environmental competitiveness of the organizations.

1.5. Literature review

The extant literature in the HR field on the topic of sustainability suggests that more and more HR executives are keen to modulate their corporation as such to become exclusive environmental champions. A great extent of empirical research highlights the impact of environment management practices on performance of the organization using different parameters (Iraldo, Testa, & Frey, Citation2009; Yang, Lin, Chan, & Sheu, Citation2010).

Literature has given importance to adoption of environmental practices as a key objective of organizational functioning making it important to identify with the support of human resource management practices. (Cherian & Jacob, Citation2012, p. 25). Haden, Oyler, and Humphrey (Citation2009) comprehend that the integration of environmental objectives and strategies along with the strategic development goals of a company results in an effective environment management system. Daily and Huang (Citation2001) proposed that organizations essentially need to balance the industrial growth as well as preservation of the environment because it has been confirmed that by endorsing green practices, the companies may profit more than before (Murari & Bhandari, Citation2011). The Human Resource Department of an organization plays a significant role in the creation of their company's sustainability culture (Harmon, Fairfield, & Wirtenberg, Citation2010). It is identified that the greater the strength of green human resource policies, the greater is the intensity of adoption of environment management systems (EMS) and policies by the different companies (Bohdanowicz, Zientara, & Novotna, Citation2011).

2. GHRM functions future direction

GHRM is a manifesto which helps to create green workforce that can understand and appreciate green culture in an organization. Such green initiative can maintain its green objectives all throughout the HRM process of recruiting, hiring and training, compensating, developing, and advancing the firm's human capital (Dutta, Citation2012). The Human Resource Department of a company is capable of playing a significant role in the creation of sustainability culture within the company (Harmon et al., Citation2010). HR processes play an important role in translating Green HR policy into practice (Renwick, Citation2008); therefore, human capital and its management are instrumental to the fulfillment of EM

objectives (Hersey, Citation1998). Huslid (Citation1995) mentions the selection processes, incentive compensation, performance management systems, the employee involvement, and training to be central for the company's success. Consequently, the argument is advanced that the HR function is instrumental in realizing organizational change aimed at acclimatizing to the new-found requirements for corporations and therefore also a potentially important contributor to such a strategic issue.

It needs to be acknowledged that the intersection of sustainability, the natural environment, and HR management are new areas in fast development and therefore, not characterized by a fully developed body of writings (Jackson et al., Citation2011). Ulrich, Brockbank, and Johnson (Citation2009) point out that many HR systems need to be aligned with each other in order to increase the likelihood that the organization will achieve its strategy. Cherian and Jacob (Citation2012) in their study identified that recruitment, training, employee motivation, and rewards are important human dimensions which contribute to the improvement in employee implementation of green management principles. In order to make sure that the organization gets right employee green inputs and right employee green performance of job, it is indispensable that HRM functions are adapted or modified to be green (Opatha & Arulrajah, Citation2014, p. 107). In this part of the paper, we briefly describe a few specific functional HRM activities which identify with the sustainability and the natural environment at the workplace and also provide opportunities for research in future.

2.1. Green recruitment

Attracting high-quality staff is a key HR challenge in the "war for talent" (Renwick et al., Citation2013, p. 2). Holtom, Mitchell, Lee, and Eberly (Citation2008) in their study on turnover and retention of employees argue that the most important benefit dimensions of HR and sustainability are retention/recruitment and satisfaction. Firms are now beginning to recognize the fact that gaining reputation as a green employer is an effective way to attract new talent (Phillips, Citation2007; Stringer, Citation2009). German firms such as Siemens, BASF, Bayer and Mannesmann use environmental activities and a green image to attract high-quality staff. The Rover Group carmaker, in Britain, makes environmental responsibilities and qualifications part of every job profile (Wehrmeyer, Citation1996, p. 30). Increasingly, green job descriptions with environmental aspects are now being included for employees within the recruitment agenda. Green recruitment can be defined as the process of hiring individuals with knowledge, skills, approaches, and behaviors that identify with environmental management systems within an organization. According to Wehrmeyer

(Citation1996), recruitment practices can support effective environmental management by making sure that new entrants are familiar with an organization's environmental culture and are capable of maintaining its environmental values.

Green recruiting is a system where the focus is given on importance of the environment and making it a major element within the organization. Complementing this, the recruits are also enthusiastic, and to some extent, passionate about working for an environment friendly "green" company. Recruiting candidates with green bend of mind make it easy for firms to induct professionals who are aware with sustainable processes and are already familiar with basics like recycling, conservation, and creating a more logical world. Grolleau et al. (Citation2012) in their study on impact of environmental standards of a company on recruitment of an employee found that environmental commitment of the company adds to profile of a company. In their primary survey, they found that professionals were more concerned with respect to the environmental strategy of a company.

2.2. Green performance management

Performance management (PM) is the process by which employees are prompted to enhance their professional skills that help to achieve the organizational goals and objectives in a better way. The recognition of the corporate strategy culminates into the PM. With the EM affecting global business strategy, PM is also being influenced by the green wave in a possible positive manner. Green performance management consists of issues related to environmental concerns and policies of the company. It also concentrates on use of environmental responsibilities. Epstein and Roy (Citation1997) in their study concluded that when HR managers integrate environmental performance into PM systems they safeguard environment management against any damage. Today some firms deal with the issue of PM by installing corporate-wide environmental performance standards, and Green information systems/audits to gain useful data on environmental performance (Marcus & Fremeth, Citation2009).

The most important aspect of PM is performance appraisal. In addition to meeting the criteria of reliability, validity, and fairness, effective performance appraisals provide useful feedback to employees and support continuous improvements in the firm's environmental outcomes (Jackson et al., Citation2011, p. 7). Issues involved in environmental PA concern the need for managers to be held accountable for EM performance in addition to wider performance objectives (Renwick et al., Citation2013, p. 5). We suggest that future research on green performance appraisal should focus upon issues such as environmental incidents, environmental responsibilities, communication of environmental policy, and green information system and audits. The job description should be aligned with green tasks and

goals to be achieved. The HR staff should modify the performance appraisal rating system to include dimensions for rating people on the following behavioral and technical competencies: teamwork, collaboration, diversity, innovation, and environmental stewardship. Such competencies would reinforce the company's core values (Liebowitz, Citation2010, p. 53). Managers should discuss the performance of the employees and give the needed feedback not only during the scheduled time of appraisal, but also all round the year. This practice will help the employees to enhance their knowledge, skills and ability.

2.3. Green training and development

Training and development is a practice that focuses on development of employees' skills, knowledge, and attitudes, prevent deterioration of EM-related knowledge, skills, and attitudes (Zoogah, Citation2011, p. 17). Green training and development educate employees about the value of EM, train them in working methods that conserve energy, reduce waste, diffuse environmental awareness within the organization, and provide opportunity to engage employees in environmental problem-solving (Zoogah, Citation2011). Green T&D activities make employees aware of different aspects and value of environment management. It helps them to embrace different methods of conservation including waste management within an organization. Further, it sharpens the skill of an employee to deal with different environmental issues. Ramus (Citation2002) in a survey of managers, on best management practices concluded that environmental training and education, along with establishing a favorable environmental culture for the employees where they feel that they are the part of environmental outcomes, were the most important HRM processes that facilitate the achievement of environmental goals. Liebowitz (Citation2010), in his study on the role of HR in achieving a sustainability culture, suggests that the HR Department can offer leadership development workshops to help managers develop their "front wheel" soft, people skills, or behavioral competencies, in teamwork, diversity, managing change, and collaboration (p. 3). Future research that facilitate green training on one hand and helps organizations on the other to develop eco-friendly managers who without any hesitation can indulge as well as promote sustainability throughout the process would be particularly useful.

2.4. Green compensation

Rewards and compensation are the major HRM processes through which employees are rewarded for their performance. These HR practices are the most powerful method which links together an individual's interest to that of the organization's. We also assert that incentives and rewards can influence employees' attention to the maximum at work and motivate them to exert maximum effort on their part to achieve organizational goals.

In the context of Green HRM, rewards and compensation can be assumed as potential tools for supporting environmental activities in organizations. In accordance to a strategic approach for reward and management, modern organizations are developing reward systems to encourage eco-friendly initiatives embarked upon by their employees. The statement is supported by a survey conducted in the UK by CIPD/KPMG that estimated that 8% of UK firms were rewarding green behaviors with various types of awards and/or financial incentives (Phillips, Citation2007, p. 9), and these practices can be effective in motivating employees to generate eco-initiatives (Ramus, Citation2002). In a similar study by Forman and Jorgensen (Citation2001) on the importance of employee participation in environmental programs, it was observed that employee commitment to environment management programs was increased when they were offered compensation to take up duties in relation to environmental responsibility. The efficacy of green rewards and compensation was best observed in a study conducted by Berrone and Gomez-Mejia (Citation2009) on 469 US firms operating in high-polluting industries. They found that the firms having eco-friendly performance paid their CEOs more than non-eco-friendly firms. They also concluded that long-term company results in accordance to pay were associated with greater pollution prevention success. Literature review reveals that incentives encourage executives to use accounting and other works to achieve short-term results and enrich themselves (Benz & Frey, Citation2007; Denis, Hanouna, & Sarin, Citation2006).

Though compensation and rewards increase green initiatives in organizations, it can never be completely free from some malpractices. Developing effective monetary incentives can be challenging due to the difficulty of accurately and fairly evaluating environmental behaviors and performance (Fernández, Junquera, & Ordiz, Citation2003). Hence, we agree with Gupta (Citation2008) that companies need to design energy-efficient products and processes, and devise incentives to accelerate their acceptance (p. 4). It is suggested that if green rewards and compensation system are aligned to the process of HRM, then a green culture in organizations can be encouraged. By incorporating elements of green management in the compensation program, managers can promote the green behaviors among the employees. Further, managers can ask employees to bring specific green ideas pertaining to their individual jobs which can be through mutual decisions included into the objectives to attain in for the upcoming year. Attaining these objectives would be the basis of receiving incentives.

Employee compensation programs can be modified to give bonuses based in part on the employee's appraisal ratings on the behavioral and technical competencies. In addition,

employees could be awarded bonuses for their outstanding work on special projects (Liebowitz, Citation2010, p. 53). Green rewards can include the use of workplace and lifestyle benefits, ranging from carbon credit offsets to free bicycles, to engage people in the green agenda while continuing to recognize their contribution (Pillai & Sivathanu, Citation2014, p. 1). Last, but not the least, more emphasis should be given on researches which determine effective approaches that will help to design and implement green compensation practices and may lead to the achievement of corporate environmental goals.

2.5. Green employee relations

Employee relations are that aspect of HRM which is concerned with establishing amicable employer–employee relationship. The relationship facilitates motivation and morale of the employees as well as, increases the productivity. Basically, employee relations involve employee participation and empowerment activities. It also helps prevent and resolve problems arisen at workplace that may affect the work. In fact, positive employee relations are an intangible and enduring asset and a source of competitive advantage for any organization.

An important way in which employee involvement and participation can be encouraged within the organization is to seek entrepreneurs within the company who are socially or ecologically oriented known as eco-entrepreneurs (Mandip, Citation2012, p. 246). Eco-friendly ideas should be welcomed from all employees irrespective of their designation which will encourage their interest in environmental issues and make best use of applying their skills. The HR staff needs to pressurize the management to create a participative work environment where the employees are free to put up their ideas on green issues since they are the ones who in reality are responsible for implementing ethical corporate behavior in the day-to-day life of the organization. This means the achievement of green outcomes will largely depend on employees' willingness to collaborate (Collier & Esteban, Citation2007), as often, the best ideas come from the employees who work in that particular area (Casler, Gundlach, Persons, & Zivnуска, Citation2010).

3. Green initiatives for HR

Lado and Wilson (Citation1994) defines HRM system as a set of distinct but interrelated activities, functions, and process that aims to attract, develop, and maintain a firm's human resource. Organizations generally organize HR practices into systems that are consistent with their culture and business strategy (Boselie et al., Citation2001).We can say that green

initiatives included in HRM manifesto is a part of corporate social responsibility in the long run. Today, organizations are implementing and integrating green initiatives in their agenda with the help of their human resource. Managers make sure that their HR is utilizing green human resource practices in appropriate manner. As an addendum to the statement, several authors have suggested that it is important to promote a great deal of technical and management skills among all employees of the organization in order to implement an effective corporate green management system in companies (Daily, Bishop, & Govindarajulu, Citation2009; Unnikrishnan & Hegde, Citation2007).

Organizations across the world are incorporating and working toward implementing GHRM practices to gain competitive advantages among the corporate world. Complete adoption and integration of GHRM in business is not impossible but requires a changed approach toward the existing HR practices on part of both the management as well as employees simultaneously. A key role for HR environmental executives could be to guide line managers in terms of gaining full staff co-operation toward implementing environmental policies which means HR needs to nurture supporters and create networks of problem-solvers willing to act to change the current status quo (Sathyapriya, Kanimozhi, & Adhilakshmi, Citation2014, p. 32). There are numerous issues related to GHRM that is to be taken into account by HR department before implementing green initiatives and, all of them can be not contained within a single document. Owing to the space limit the following section of the paper briefly focus upon some of the major green initiatives for HR departments.

3.1. Green building

The organizations round the globe are considerably opting for green building as their workplace and offices as an alternative to traditional offices. The phenomenon is quite trend setting as Green buildings fulfill certain criterion for reducing the exploitation of natural resources that are utilized in their construction. Furthermore, green buildings include some enhanced features related to green practices such as energy efficiency, renewable energy, and storm water management. Recent years have witnessed a great upsurge in adoption of green buildings by organizations at a fast pace. The business world has become increasingly aware of the significant role played by green buildings while dealing with environmental issues. Green buildings also serve as a platform for financial savings for organizations as their construction and engineering involve low cost. Business giants like Ford, Pepsico, etc. are committed to sustainability and have included green building design principles into their buildings. Fortune 1000 companies are adopting company-wide sustainability policies that have increased the demand for work space in Green or sustainable buildings.

3.2. Paperless office

Most of the work in the office is managed on paper but, with introduction of IT, the consumption of paper has been reduced. Today E-business and learning have changed the methods and procedures at offices converting them into paperless offices. Paperless office is a work place where the use of paper is either restricted or eliminated by converting important official documents and other papers into automated workflows. The practice greatly reduce the consumption of paper, the costs of paper-related actions including copying, printing, and storing, and also save the time used for searching paper documents. Jamie Garratt started Idea Rebel, a Vancouver-based digital agency in 2008, which is a complete paperless office (Borzykowski, Citation2013). At Idea Rebel, pay stubs are emailed to employees and notes are taken on tablet devices and whiteboards. Designers are allowed to bring in a pad of paper but they have to take the pad to their home at the end of each day. Finally, we assert that by reducing the use of paper, we can directly conserve natural resources, prevent pollution, and reduce wastage of water and energy.

3.3. Conservation of energy

Conservation of energy in the office has the potential for a great environmental impact. In an effort to provide more efficient and eco-friendly services, offices around the world have implemented several energy conservation initiatives to reduce the environmental impact. The HR department at the UK arm of Sky has started a campaign where the employees are asked to turn off PCs, TVs, and lights when leaving, to use 100% renewable energy, and introduced solar lighting (Davies & Smith, Citation2007). Whereas the HR department of other British organizations is emphasizing upon their travel policy which promotes car sharing and the increased use of public transport (Simms, Citation2007). In addition, HR systems such as e-HR are seen to be able to help management and employees track their own carbon emissions (Beechinor, Citation2007). Organizations are also promoting the extensive use of energy star-rated light bulbs and fixtures which undoubtedly consumes at least two-thirds less energy than regular ones.

3.4. Recycling and waste disposal

Recycling is the methodology of processing used up materials (waste) into new and useful products. Recycling reduces the use of raw materials that would have been otherwise used to produce new products. Consequently, this practice saves energy and reduces the amount of waste that is thrown into the dustbins, thereby making the environment cleaner and the air fresher. As a part of their green initiatives, several organizations are implementing recycling program to increase the amount of recycled products and decrease the amount of waste.

4. CONCLUSION

It is not a hidden fact that human resource is the most important asset of an organization that plays an important role in managing the employees. At the moment, the recent increased trend of corporate focus on greening the business, the modern HR managers have been assigned with additional responsibility of incorporating the Green HR philosophy in corporate mission statement along with HR policies. Changes in corporate perspectives related to the environmental initiatives can be seen in written policy statements, environmental job titles, marketing strategies, capital investments, auditing practices, new product design and development, and production processes (Molina-Azorín, Claver-Cortés, Pereira-Moliner, & Tarí, Citation2009; Sharfman & Fernando, Citation2008). Green process and policies are now making their way through within the HR space complementing the existing green practices and initiatives. Green HR efforts have resulted in increased efficiencies, cost reduction, employee retention, and improved productivity, besides other tangible benefits.

REFERENCES

1. Bebbington, J. (2001). Sustainable development: A review of the international development, business and accounting literature. *Accounting Forum*, 25(2), 128–157.
<http://dx.doi.org/10.1111/accf.2001.25.issue-2>
2. Beechinor, F. (2007). How to reduce your carbon footprint. *People Management*, 13(22), 46–47.
3. Benz, M., & Frey, B. S. (2007). Corporate governance: What can we learn from public governance? *Academy of Management Review*, 32(1), 92–104.
<http://dx.doi.org/10.5465/AMR.2007.23463860>
4. Berrone, P., & Gomez-Mejia, L. R. (2009). Environmental performance and executive compensation: An integrated agency-institutional perspective. *Academy of Management Journal*, 52(1), 103–126. <https://doi.org/10.5465/amj.2009.36461950>
5. Bohdanowicz, P., Zientara, P., & Novotna, E. (2011). International hotel chains and environmental protection: An analysis of Hilton's We Care! programme (Europe, 2006–2008). *Journal of Sustainable Tourism*, 19(7), 797–816.
<http://dx.doi.org/10.1080/09669582.2010.549566>
6. Boiral, O. (2002). Tacit knowledge and environmental management. *Long Range Planning*, 35(3), 291–317. [http://dx.doi.org/10.1016/S0024-6301\(02\)00047-X](http://dx.doi.org/10.1016/S0024-6301(02)00047-X)

7. Borzykowski, B. (2013, August 28). *How one company went completely paperless*. The Globe and Mail. Retrieved January 12, 2014, from <http://www.theglobeandmail.com/technology/tech-news>
8. Boselie, P., Paauwe, J., & Jansen, P. G. W. (2001). Human resource management and performance: Lessons from the Netherlands. *The International Journal of Human Resource Management*, 12(7), 1107–1125.
<http://dx.doi.org/10.1080/09585190110068331>
9. Casler, A., Gundlach, M. J., Persons, B., & Zivnuska, S. (2010). Sierra Nevada Brewing Company's thirty-year journey toward sustainability. *People & Strategy*, 33(3), 44–51.
10. Cherian, J., & Jacob, J. (2012). A study of Green HR practices and its effective implementation in the organization: A review. *International Journal of Business and Management*, 7(21), 25–33.
11. Christmann, P. (2000). Effects of "best practices" of environmental management on cost advantage: The role of complementary assets. *Academy of Management Journal*, 43(4), 663–680. <https://doi.org/10.5465/1556360>