# Environmental, Social, and Governance evaluation in Coal Mining Companies – A Case Study of Singareni Collieries Company Limited

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**Abstract.** The Environmental, Social and Governance (ESG) criterion is receiving significant importance and in order to promote sustainability and responsible business practices, ESG is often determined as indicator for measuring the performance of company to evaluate whether the company is meeting the expectations of its stakeholders and broader community. ESG emphasizes strong governance practices, including transparent decision-making processes, ethical conduct, and effective oversight by the company's board. ESG factors are of paramount significance for coal mining companies due to their potential to influence the industry's long-term viability, access to capital, stakeholder relationships, and compliance with evolving environmental and social standards. Embracing sustainable and responsible business practices is crucial for navigating the challenges associated with coal mining and contributing to a more sustainable energy sector. In the present paper, an endeavor is made to assess the evaluation of select coal mining companies on the basis of ESG parameter and particularly, the study focuses on Singareni Collieries Company Limited (SCCL) in terms of their impact on ESG parameters.

The paper presents the SCCL's efforts in management of Carbon Emissions, Resource utilization, land reclamation(constituting environmental factors), community engagement, labour practices, health and safety(constituting social factors) and Board composition, Corporate Governance and Ethical Business practices(constituting Governance Factors). Assessment of three dimensions is evaluated through self-evaluation scores and relevanttrending tools are applied to assess the performance of the company. The study is based on integration of descriptive and experimental research design oriented.

**Key words:** Bio Reclamation, CSR, POB, Renewable Energy, SDC


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# 1 Overview of ESG

ESG in full form refers to Environmental, Social, and Governance. ESG refers to a set of criteria that investors and other stakeholders use to evaluate a company's sustainability and ethical impact. In Indian context, the concept of ESG has received significant toehold in the recent years as firms, investors, regulators, and society at large increasingly concentrating on the recognition of the importance of sustainable business practices and responsible corporate behavior. ESG received significant position in the Sustainable Development Goals framed by countries across the world. Environment, socialwell being and Governance are inherited in the SDGs and through its key indicators' performance, India received 112nd rank among 166 countries with 63.5 SDG index score and 99.4 spillover score.

## 1.1 Environmental Factors

Environmental considerations focus on a company's impact on the natural environment, including its efforts to reduce carbon emissions, conserve resources, manage waste, and mitigate environmental risks. In India, environmental issues such as air and water pollution, deforestation, and climate change are of particular concern due to the country's rapid industrialization and population growth. Companies in India are increasingly adopting environmentally sustainable practices, such as investing in renewable energy, implementing water conservation measures, and adopting eco-friendly manufacturing processes. Regulatory frameworks such as the Environmental Impact Assessment (EIA) and Corporate Social Responsibility (CSR) guidelines also encourage companies to address environmental concerns. Environmental factors

## 1.2 Social Factors

The Social factors encompass a company's impact on society, including its treatment of employees, engagement with communities, promotion of diversity and inclusion, and adherence to labor standards and human rights. In India, social issues such as poverty, inequality, gender discrimination, and access to education and healthcare are significant considerations. Indian companies are increasingly focusing on social responsibility initiatives, such as employee welfare programs, community development projects, skill development initiatives, and support for marginalized groups. Corporate social responsibility (CSR) has been mandated by the Indian government for certain companies, requiring them to allocate a portion of their profits towards social development activities.

## 1.3 Governance Factors

1 Overview of ESG

Governance factors pertain to the effectiveness and integrity of a company's governance structure, including its board composition, transparency, accountability, risk management practices, and adherence to ethical standards and legal compliance. Strong corporate governance is essential for building trust among investors and stakeholders.

## 2 Review of Literature

Brief review of existing literature is presented here.

Kumar J.C. and Majid M.A. (2020) have explained the inflow of FDI equity between 2015-16 to 2018-19. Results show a total of 3.21743 Billion USD was spent for the development of renewable energy in India as a source of strengthening its measures towards efficient ESG implementation. In the paper, the authors also emphasized on supporting mechanisms for Power Purchase agreements (PPA), infrastructure support and focusing on the improvement of the renewable sector to increase the employment opportunities and decrease the issues of poverty and job security.

Roy B and SchaffartzikA (2021) have explained the transition of India from conventional energy to renewable energy in order to meet the ESG challenges. Authors have explained that excessive consumption of coal and other fossil energy systems derailed environmental sustainability, but the recent approach of transition is expected to achieve tremendous results in terms of declining consumption of fossil shares there by supporting the environment. In the paper, it has also been mentioned that, climate crisis and concerns of locals on the negative influence of fossil energy resulting impact on the environment and health of people is converging to a serious issue for the world to tackle.

Montrone L et al. (2021) emphasized political economic influence on power sector reforms resulting rising concerns for ESG improvement in India. Authors have mentioned that India's use of coal power has made substantial expansion and transformation from coal to renewable energy is influenced by political factors such as loss of life and employment opportunities and supporting industries such as Fly ash Bricks, Cement and other industries relying on Coal based power.

Based on literature review, it is to observed that, ESG is been relatively new area despite companies are incorporating activities under CSR, the ESG has been observed as more broaden pillars to achieve the sustainability.

## 3 Objectives and Methodology

The study focuses on the following objectives.

1. To study the evolution and ESG implementation in India.
2. To analyze the ESG in Indian Mining Sector
3. To evaluate the ESG implementation in Singareni Collieries Company Limited

Paper is based on evaluation on secondary sources of data drawn from ICSI reports, SEBI reports, annual reports of CIL, SCCL, Sustainability Reports and other

international reports, journals and articles. Study is descriptive research design in nature.

## 4 ESG implementation in India

In India, corporate governance practices have been strengthened through regulatory reforms and corporate governance guidelines issued by regulatory bodies such as the Securities and Exchange Board of India (SEBI). These guidelines emphasize the importance of independent directors, board diversity, disclosure requirements, and shareholder rights. SEBI launched Business Responsibility and Sustainability Report (BRSR) through amending SEBI (Listing Obligation and Disclosure Requirements Regulations Act, 2015 seeking disclosures from listed entities and reporting under each indicator.

Additionally, the United Nations Sustainable Development Goals (SDGs) provide a framework for addressing global challenges, including poverty, inequality, climate change, environmental degradation, peace, and justice. Indian companies are increasingly incorporating ESG factors into their business strategies. This includes measures to reduce carbon emissions, improve energy efficiency, promote diversity and inclusion in the workplace, ensure ethical supply chains, and enhance corporate governance practices. Many large corporations in India have established dedicated sustainability departments and are publishing annual sustainability reports. The Securities and Exchange Board of India (SEBI) has mandated the disclosure of ESG-related information by listed companies. This move aims to improve transparency and accountability among businesses regarding their environmental and social impacts. Additionally, the Companies Act, 2013, requires certain companies to spend a portion of their profits on corporate social responsibility (CSR) activities, which often align with the SDGs.

Investors, both domestic and international, are increasingly considering ESG factors in their investment decisions. They recognize that companies with strong ESG performance are better positioned to mitigate risks and seize opportunities in a rapidly changing global landscape. Sustainable investing in India encompasses various approaches, including ESG integration, impact investing, and thematic investing aligned with the SDGs.

The Indian government has launched several initiatives to address sustainability challenges and advance the SDGs. For instance, the National Action Plan on Climate Change outlines strategies to mitigate greenhouse gas emissions and build resilience to climate impacts. Programs like Swachh Bharat Abhiyan (Clean India Mission) aim to improve sanitation and promote cleanliness, contributing to SDG 6 (Clean Water and Sanitation) and SDG 11 (Sustainable Cities and Communities).

Despite progress, India faces significant challenges in achieving the SDGs and advancing ESG goals. These challenges include poverty, inequality, environmental degradation, inadequate infrastructure, and the impacts of climate change. However, addressing these challenges also presents opportunities for innovation, job creation, and inclusive growth. Collaboration among government, businesses, civil society, and international partners is crucial for driving progress towards a sustainable and

equitable future in India.In summary, ESG considerations and the SDGs are increasingly shaping the business, regulatory, and investment landscape in India, with stakeholders recognizing the importance of sustainable development for long-term prosperity and well-being.

## 5 ESG in Indian Coal Mining Sector

Indian Coal mining industry, one of the oldest industries in India have its origin over 220 years ago when East India Company commercially started mining in Raniganj Coal fields along with Western bank of Damodar River. The Nationalization of Coal mines in 1973(Coal Mines(Nationalization) Act, 1973 resulted in growth in coal production and rising mining regions there by supporting the Government in terms of meeting the Energy requirements and also providing employment to thousands of people directly and indirectly.

Presently, Government led Coal Industry is producing coal in 14 coal mining companies operating in India. During 2022-2023, coal production in India rose to 893.19MT with a growth rate of 14.77%. Coal India Limited and its subsidiaries, Singareni Collieries Company Limited were the major coal producing companies in India. In Coal mining sector, the Environmental, Social, and Governance (ESG) criteria have become increasingly important for investors and stakeholders in assessing the sustainability and ethical practices of companies. Coal mining is associated with significant carbon emissions due to the combustion of coal. Investors and stakeholders may evaluate companies based on their efforts to reduce emissions, adopt cleaner technologies, and transition towards renewable energy sources. Sustainable waste management practices, such as proper disposal of coal ash, can be a crucial factor in assessing a company's environmental impact.Companies are expected to engage with local communities, addressing concerns related to displacement, land acquisition, and potential environmental impacts. Social acceptance and support from local communities are vital for the long-term sustainability of coal mining operations. Fair labor practices, ensuring worker safety, and providing adequate compensation and benefits are essential components of the social dimension. Companies in Coal Mining are expected to operate ethically, ensuring compliance with laws and regulations and avoiding corruption.

Indian coal mining companies may face additional challenges and scrutiny due to the environmental impact of coal extraction, concerns about air and water pollution, and the global shift towards cleaner energy sources. Several Indian companies, in response to market demands and regulatory pressures, have started incorporating ESG considerations into their business strategies. They may engage in initiatives related to renewable energy, environmental conservation, and community development to improve their ESG profiles.Indian coal mining companies including subsidiary companies of CIL and SCCL have started diversifying their energy portfolios by investing in renewable energy sources. Due to increased scrutiny and regulatory pressure, coal mining companies in India are adopting measures to comply with environmental regulations. This involves investing in technologies to mitigate

environmental impacts, improve waste management practices, and reduce air and water pollution.

# 6 ESG in Singareni Collieries Company Limited

Singareni Collieries Company Limited (SCCL) is established in 23rd December, 1920 performing its business operating in Coal Mining, Power Generation and Consultancy services. Presently the company is lead by 18 Open Cast (OC) mines, 22 Under Ground (UG) mines, together 40 mines situated in 6 districts of Telangana. Share of State Government to Central Government is 51:49 percent and the company is a share of about 9 percent of coal Production in India. The ESG implementation in SCCL is presented here.

## 6.1 Environmental Evaluation in SCCL

The study on annual reports of SCCL and Sustainable Developmental Activities, 2022-2023 reveal about the company's efforts towards Environmental Goals set by the company and the results achieved. The analysis on the report shows that the company is aiming to bring Sustainable development not only aiming for profit but also contributing to environmental sustainability. The study shown that the company is working on 8 core activities towards environmental sustainability. These include: Reclamation of OB dumps, Recycling and Reutilization of Mine Water, Growing of Eco parks, Building Summer Storage Tanks, Pit crusher technology, Utilization of Surface Miner Technology and Development of Solar Power Plants. In order to support for its motto of "We give more than what we take", the SCCL is increasing its efforts to bring back Green in place of Black caused through mining. The company has grown plantation across Over Burden dumps, Blocks and avenues. As of 2022-2023 reports, in 6154.5 Ha of OB Dump plantation, the company is growing 3,14,69,023 seedlings and in 7364.62 Ha of Block Plantation, the company is growing 1,38,53,144 seedlings. Altogether, in 14118.62 Ha of plantation, the company is growing 4,59,04,237 seedlings. Further, distribution of plants increased to 6,75,93,276 in between 2020 to 2022.

**Table 1.** Bio-Reclamation/Plantation

| Sl.No. | Plantation Details | Area Ha. | No. of Seedlings |
|---|---|---|---|
| 1. | OB Dump plantation | 6154.5 | 3,14,69,023 |
| 2. | Block Plantation | 7364.62 | 1,38,53,144 |
| 3. | Avenue Plantation | 599.5 km | 5,82,070 |
| | Total | 14118.62 | 45904237 |

Source: Sustainability Reports, SCCL, 2023

Annexure-1 and 2 presents the mine water utilization is showing one of the rising concerns for the company. Especially in Underground mines, the water utilization is raised to over 100% in between 2020-21 to 2022-23. Among the total availability of water pumped out from mines, the average LKL pumped in three years

is 1039.53 LKL and for the industrial purpose, an average of 487.44 LKL comprising of 46.89% is used for own use and average of 16.63 LKL (1.59%) is used for Domestic Water purpose and 535.46 LKL (51.50%) is used as Irrigation water. The utilization of POB ((Processed over Burden), Bottom Ash and Sand Utilization between 2011-12 to 2022-23 show that a total of 324.80 L.Cu.m. worth material is sued by the company. The major proportion of utilization is achieved in Sand (54.96%) followed by Bottom Ash (31.80%) andPOB (13.04%). The statistics on utilization pattern of stowing material show that 100% utilization is achieved in terms of utilization of stowing material.Year wise progress of company's transformation towards Renewable Energy is presented here.

**Table 2.** Solar Power Expansion in SCCL

| **Financial Year** | **Number of Solar Plant Locations** | **Solar Power Capacity (MW)** | **Solar Plant Locations planned** | **Target for Expansion** | **Association with** |
|---|---|---|---|---|---|
| 2017-2018 | -- | -- | A total 300 MW capacity is planned | -- | -- |
| 2018-2019 | -- | -- | 9 Solar Power Plants planed | -- | BHEL |
| 2019-2020 | -- | -- | Solar Plants at Manguguru, yellandu, Ramagundam-3 & STPP | 90 MW solar plants at 5 locations | Adani Infra (India) Limited |
| 2020-2021 | 04 | 129 | Existing plans are delayed because of Lock down | 80 MW solar plants at 6 locations | Novus green Energy Systems & Adani Infra |
| 2021-2022 | 04 | 129 | 04 | 90 | |
| 2022-2023 | 09 | 224 | 05 | 76 | |

Source: Annual Reports of SCCL between 2017-18 to 2022-2023

Results presented in table-1 show that, during 2017-18 financial year, SCCL has made its first proposal for setting up its new plants for the generation of Solar Power with 300 MW capacities. The company has chosen Power Purchase Agreement (PPA) model. During 2018-19 period, the Detailed project Reports (DPRs) is accorded and a total project cost materialized to install 9 Solar Power Plants in its mining region is expected Rs.1361.5 crore. During 2019-20, the company has planned to bring Solar plants at 4 mining areas with a capacity of 90 MW solar plants with association of Adani Infra(India) Limited. During 2020-21 financial year, the company has brought 4 solar plants with 129 MW capacity into operational form.

The existing plans of locating the solar plants were delayed due to lock down. During this financial year, the company has engaged with Novus Green along with Adani Infra for development of solar projects. During 2021-22 financial year, apart from its existing 4 plants with capacity of 129 MW power production, another 4 plants were commissioned and brought into final stage of pre production form. During 2022-23, the company has strengthened its solar power production to nine solar plant locations with installed Solar Plant Capacity of 224 MW and in this financial year, the company has commissioned 5 plants with a capacity of 76 MW.

## 6.2 Analysis on Social responsible activities

In order to evaluate the company's efforts towards social activities, the CSR performance of the company is taken into consideration. Ever since the new mandate of CSR provisions prescribed under Companies Act, 2013 come into action; the company has been investing in social responsibility activities as prescribed under 12 CSR areas where its CSR projects are covered. Year wise performance of SCCL towards social responsible activities is prescribed in table-3.

In the period of study between 2014-15 to 2022-23, a total of 514 social welfare projects are implemented by the company with a value of 289.73 crore was spent on various projects. The comparison of local projects to non local projects implemented sow that, the company is spending major proportion in local projects implemented in the range of 70.735 to 100% and non local projects implemented in the range of 0% to 29.27%. Comparison of area wise CSR activities show that, the company is mainly focusing on increasing its spending on projects pertaining to several CSR thematic areas.

**Table 3.** Social activities implemented under CSR by SCCL

| Year | Social projects | Amount sanctioned | Local projects implemented | Non Local projects implemented | CSR Area wise activities |
|---|---|---|---|---|---|
| 2014-15 | 30 | 14,66,68,322 | 100% | 0% | 1-14 , 2-4, 7-2, 10-10 |
| 2015-16 | 57 | 25,99,71,222 | 96.5% | 3.5% | 1-10, 2-7, 4-1, 5-12, 7-2,10-25 |
| 2016-17 | 47 | 25,29,36,000 | 82.98% | 17.02% | 1-13, 2-7, 3-1, 4-2 5-6, 7-2, 10-16 |
| 2017-18 | 55 | 34,34,95,640 | 81.81% | 18.19% | 1-15, 2-4, 4-3, 5-8 7-1, 10-24 |
| 2018-19 | 41 | 21,04,4,444 | 70.73% | 29.27% | 1-14, 2-6, 3-1, 4-4 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | 5-4. 8-1, 10-11 |
| 2019-20 | 71 | 39,20,64,422 | 88.73% | 11.27% | 1-16, 2-9, 4-10, 5-5<br>7-6, 10-25 |
| 2020-21 | 71 | 60,46,53,045 | 78.87% | 21.13% | 1-36, 2-10, 3-2, 4-2<br>5-3, 7-4, 8-1, 10-12<br>12-1 |
| 2021-22 | 67 | 44,60,02,549 | 80.59% | 19.41% | 1-19, 2-8, 3-4, 4-1<br>5-3, 7-4, 10-27, 12-1 |
| 2022-23 | 75 | 43,04,90,592 | 88.00% | 12.00% | 1-8, 2-14, 3-12, 4-4<br>5-9, 7-6, 10-17, 12-5 |
| Total | 514 | 2,89,73,26,236 | | | |

Source: SCCL annual Reports, 2014-15 to 2022-23

As per Schedule VII of Companies Act, 2013 prescribed under CSR activities, SCCL is primarily focused on the following activities.

Thematic Area-1: Eradication of hunger and poverty, focusing on Health and Sanitation

Thematic Area2: Promotion of Education, special education and Vocational training

Thematic Area3: Gender equality, support to Women empowerment and Senior citizens' welfare

Thematic Area 4: Projection of National Heritage, art and Culture

Thematic Area 5: Benefit of Armed force veterans, war widows

Thematic Area 7: Support to Academic institutions for technology incubators

Thematic Area 8: Rural sports, Paralympics and other sports

Thematic Area 10: rural Development Projects

Thematic Area 12: Disaster management, rehabilitation and reconstruction activities

**C) Governance Activities:**

Being a coal mining company, a joint venture between state and central government, the company has been successful in Good Governance as it has reached to new mile stone of MinRathna Company providing employment opportunities to over 40,000 employees directly and hundreds of people indirectly. The Governance of SCCL is showing evidences with the following observations placed in table-3.

**Table 4.** Governance of SCCL

| Sl.No. | Activity | Details |
|---|---|---|
| 1. | Company's slogan encouraging for Good Governance | 'One Family, One Vision, One Mission' |
| 2. | Transparency | Public disclosures including Annual Reports, sustainable Developmental Activities, Monthly Reports, CSR projects |
| 3. | Business | Transparency in Coal Production, Distribution, E-auction |
| 4. | Performance | a) Consistent production target achieved<br>b) Decline in manpower and increase in production |
| 5. | Transformation | a) Focusing on Green Projects, Energy Renewable Projects<br>b) Coal mining to Coal Consultancy projects |
| 6. | Areas for Concern | a) Rising issues of Environmental clearances<br>b) Rising Open cast mines<br>c) Increasing OB Removal&Coal production resulting in Higher environmental concerns<br>d) High focus on Dependency jobs and less focus on Fresh and Open Recruitments |

Source: SCCL annual Reports, 2014-15 to 2022-23

## 7 ESG Evaluation of SCCL

To evaluate the ESG Risk rating, MSCI Sustainalytics framework is taken into consideration. The framework is recognized as one of the world's best rating system to evaluate the ESG risk rating. The framework is based on the three pillars' performance on the basis of the risk generated to the society. The following indicators are taken into consideration to set the score.

**Table 5.** ESG Indicators

| Sl. No. | Indicator | Adequacy | Score |
|---|---|---|---|
| 1. | Negligible | Fair and Good | 0-10 |
| 2. | Low(Aver | Average | 10-20 |
| 3. | Medium | Poor | 20-30 |
| 4. | High | Very poor | 30-40 |

Source MSCI Sustainalytics Framework, 2023

The ESG Evaluation for Singareni Collieries Company Limited is made by taking into consideration of 3 pillars of ESG, i.e., Environmental, Social and Governance. Under Environmental Pillar, two broad themes are considered. These are Natural Capital and Climate Change. Under Social Pillar, Human Capital and Stakeholders opposing are considered. Under Governance pillar, Corporate Governance and Corporate behavior pillars are considered for evaluation. From each theme, 2

dimensions are taken into consideration for evaluation. These include Bio diversity and Land use, Raw material sourcing(under Natural capital theme), carbon footprint, carbon emissions and environmental impact(under climate change theme), community relations, access to healthcare and controversial sourcing(under stakeholders opposing theme), Board, pay, ownership and control (under corporate Governance), Business Ethics, Tax transparency and Social Audit(under corporate behavior).

**Table 6.** ESG Evaluation of SCCL

| Sl.No. | 3 Pillars | Themes | Themes | Self evaluation Score of fulfillment | Adequacy | Risk Factor |
|---|---|---|---|---|---|---|
| 1. | Environmental | Natural capital | Biodiversity and Land use | Bio reclamation: seedlings per hectar:7609.26, 2021-22: 7199.10 growth rate= -5.69% | Very Poor | 35 |
| | | | Raw material sourcing | Pumped water from mines utilization : 453 LKL, growth rate = -2.02% | Very poor | 35 |
| | | | Climate change vulnerability | Fly ash availability(4000 MT), Bottom Ash availability(220 MT), stock of ash(1,50,000 MT, stock of bottom ash in pond (40,000 MT) | Very Poor | 35 |
| | | Climate Change | Carbon Footprint | Number of mines reduced from 42(oc18, ug24) to 40(oc18, ug22) with 5 percent decrease | Average | 10 |
| | | | Carbon emissions | Coal production increased from 50.47Mill. Tones to 67.14 Mill. Tones with a CAGR of 2.90% in 10 years resulting increase in carbon emission | Very poor | 35 |
| | | | Environmental impact | Air Quality showing index showing extremely higher pollution levels, Sample: KTCKOC-III BWS, standards : PM10 (µg/m3 ), average recorded 144.09 | Very Poor | 35 |
| 2. | Social | Human Capital | Health and Safety | Accidents 98, injured 101, serious accidents and seriously injured rise to 20% | Poor | 25 |
| | | | Labor management | Well formulated welfare measures and recognition of Labor Unions | Good | 5 |
| | | | Human | Reducing man power size and HRD practices restricted on | Average | 15 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | Capital Development | training (4064 trained, growth rate= 39.84%) | | |
| | | Stakeholders opposing | Community Relations | Higher complaints on Environmental pollution, Penalty of Rs.41.2 cr by NGT on violations of environment in OC at Khammam https://www.thehansindia.com/news/cities/khammam/412-cr-fine-on-sccl-for-green-violations-741704 | Very poor | 35 |
| | | | Access to healthcare | Healthcare benefits restricted to employees of SCCL at community support is violated | Poor | 25 |
| | | | Controversial sourcing | Inheritance employment for Class-IV , non regular recruitments | Poor | 25 |
| 3. | Governance | Corporate Governance | Board | Adequate board is formed with all positions are active and directors are in position | Fair | 5 |
| | | | Pay | On par with SCCL norms with yearly bonus | Fair | 5 |
| | | | Ownership and control | Shareholding pattern: Telangana Government (51.09%), Government of India (48.90%), IEPF Authority (0.0007%), Public shareholders (0.00152%) | Fair | 5 |
| | | Corporate behavior | Business Ethics | Higher concern on productivity and lesser concern on community complaints, environmental grievances, Productivity recorded 3.28% CAGR | Poor | 25 |
| | | | Tax Transparency | Transparent disclosure of taxes | Fair | 5 |
| | | | Social Audit | No social audit on CSR spent, social projects | Poor | 25 |

Source: Compiled from SCCL Annual Reports, Sustainability Reports, Environmental Reports and CSR Reports 2013-14 to 2022-23

The reports of Sustainalytics, world renowned agency reports company wise ESG Risk ratings revealed that, Coal India Limited engaged in coal mining received a score of 45.0 resulting "Severe Risk" category. The evaluation of ESG risk score of SCCL is computed and presented in Table-7.The risk factor score is assigned according to the MSCI indicators for evaluating the ESG Risk Factor. The consolidated results show the following results.

**Table 7.** ESG Risk Score of SCCL

| Sl.No. | 3 Pillars | Theme | Average Risk Factor Score | Conclusion |
|---|---|---|---|---|
| 1. | Environmental | Natural Capital | 35.00 | Average risk score =30.8 resulting Higher Risk |
| 2. | | Climate Change vulnerability | 26.60 | |
| 3. | Social | Human Capital | 15.00 | Average risk score = 21.65 resulting Moderate risk |
| | | Stakeholders opposing | 28.30 | |
| 3. | Governance | Corporate Governance | 5.00 | Average risk score = 11.66 resulting Lower Risk |
| | | Corporate Behavior | 18.33 | |
| | | Average | | Overall aggregate risk score = 21.37 resulting Moderate Risk |

Source: Compiled from ESG performance of SCCL, 2023-2024

The ESG evaluation of SCCL is made with adoption of MSCI Sustainalytics framework. From each broad pillar, i.e., Economic, Social and Governance, 2 themes are considered and the performance of SCCL is undertaken to evaluate the performance under each indicator. Indicator wise results are consolidated and the results show that, Higher Risk Factor Score is noticed in case of Natural Capital. The Stakeholder opposing and Climate change vulnerability show moderate risk. Human Capital and Corporate Behaviour show Low risk and Corporate Governance show Negligible risk. The aggregate results show that Environmental pillar resulting Higher Risk, Social Pillar resulting Moderate risk, Governance pillar show Lower Risk. The overall aggregate score show 21.37 which reveal that; the company is under **"Moderate Risk".**

## 8 Conclusions

The ESG concept in India is gaining momentum as companies recognize the business benefits of sustainable and responsible practices, investors seek to integrate ESG considerations into their investment decisions, and regulators promote greater transparency and accountability. By embracing ESG principles, companies in India can enhance their long-term resilience, competitiveness, and positive impact on society and the environment. Environmental, Social, and Governance (ESG) factors have become increasingly important in India as the country grapples with various sustainability challenges while aiming for economic growth. The study on ESG in India reveal that, the regulatory bodies including SEBI, Ministry of Coal have been governing to regulated the activities of the companies to meter Sustainable development goals on par with compliance of ESG.

The study on ESG in Indian coal mining companies reveal that, including Coal India Limited and its subsidiaries and SCCL have been under pressure as the ESG risk rate has shown comparatively higher. The ESG risk score of SCCL particularly reveal that, the company is facing the "Moderate Risk" on the basis of evaluation of score for 3 pillars of ESG. Company need to focus more on betterment of Environmental pillar through transformation of conventional environmental destructive form of coal mining to shifting to Renewable Energy. Further, the community relations, access to health facilities to be extended to people living in SCCL mining areas. Restriction of health benefits to only SCCL employees and its dependents will seriously cause an issue of concern. Further, the Corporate Behaviour in terms of ethical business practices are advised and more transparency is to be brought in terms of implementation of Social Audits to its social and CSR activities for achieving better Corporate Governance.

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**Annexure-1 Mine water utilization by SCCL during 2020-21 to 2022-23**

| Year | | Water pumped out from mines | Own Use (Industrial) | Community Use | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Domestic water | | Irrigation water | | Total |
| | | | | Volume (A) | Beneficiaries (@15 LPCD) (per day) | Volume (B) | Irrigation | Volume (A+B) |
| | | LKL | | LKL | Nos. | LKL | Acres | LKL |
| **2020-21** | Target | 992.17 | 525.95 | 13.16 | 2,40,000 | 453.06 | 4,500 | 466.21 |
| | Actual | 992.30 | 524.57 | 13.17 | 2,42,000 | 454.56 | 4,500 | 467.73 |
| **2021-22** | Target | 995.33 | 495.33 | 15.00 | 2,73,973 | 485.00 | 4,900 | 500.00 |
| | Actual | 1036.28 | 484.76 | 16.70 | 3,05,023 | 534.82 | 4,900 | 551.52 |
| **2022-23** | Target | 1085.00 | 485.00 | 20.00 | 3,00,000 | 580.00 | 5,000 | 600.00 |
| | Actual | 1090.03 | 453.00 | 20.03 | 3,70,926 | 617.00 | 5,080 | 637.03 |

## Annexure-2: POB, Bottom Ash and Sand Utilization

| Utilisation pattern of stowing material (in %) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. No | Item | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | Overall Utilization |
| 1 | POB | 3.25 | 3.27 | 3.78 | 3.46 | 7.57 | 21.78 | 16.93 | 14.20 | 13.12 | 27.10 | 27.54 | 30.25 | **13.06** |
| 2 | Bottom Ash | 0.00 | 3.40 | 17.54 | 30.08 | 26.21 | 37.78 | 51.78 | 41.07 | 46.23 | 41.07 | 48.45 | 52.74 | **31.93** |
| 3 | Sand | 96.75 | 93.33 | 78.68 | 66.45 | 66.21 | 40.44 | 31.29 | 44.73 | 40.64 | 31.83 | 24.01 | 17.01 | **55.02** |
| Total | | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100.00 |

| POB, Bottom Ash and Sand Utilisation (All fig. in L.Cu.m)-2022-23 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. No | Item | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | TOTAL |
| 1 | POB | 0.97 | 0.89 | 1.10 | 1.05 | 2.35 | 6.70 | 5.64 | 4.25 | 3.56 | 4.73 | 5.12 | 6.00 | **42.37** |
| 2 | Bottom Ash | 0.00 | 0.93 | 5.09 | 9.09 | 8.12 | 11.62 | 17.27 | 12.30 | 12.56 | 7.16 | 9.01 | 10.46 | **103.61** |
| 3 | Sand | 28.90 | 25.52 | 22.82 | 20.07 | 20.51 | 12.44 | 10.43 | 13.40 | 11.04 | 5.55 | 4.47 | 3.37 | **178.52** |
| Total | | 29.87 | 27.34 | 29.01 | 30.21 | 30.98 | 30.75 | 33.35 | 29.96 | 27.16 | 17.44 | 18.60 | 19.84 | **324.50** |