

Sustainability Report 2015-16

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1.0 Message from Chairman and Managing Director

An agreement by member States to establish a process to develop a set of Sustainable Development Goals (SDGs) was one of the main outcomes of the United Nations Conference on Sustainable Development (UNCSD), popularly known as the Rio+20, convened in Rio de Janeiro, Brazil, in June 2012. The goals are intended to advance sustainable development through greater integration of its three pillars: economy, social, and environment. Prime Minister of India too expressed India's commitment to work towards achieving these goals by 2030.



In the long run, sustainable development in the field of energy is also deemed to contribute to economic sustainability and national security of communities, thus being increasingly encouraged through investment policies.

Sustainable energy is clean and can be used over a long period of time. Unlike fossil fuels that most countries are using, renewable energy only produces little or even no pollution. The most common types of renewable energy are hydroelectric, solar and wind energy.

THDCIL, being in power sector, is serving to its customers to their satisfaction and humbly contributing in Sustainable Development. Both operational Hydro Power plants of THDCIL VIZ. Tehri HPP & Koteshwar HEP are adding 1400 MW peaking energy to the Northern Grid. THDCIL has also stepped in Renewable Energy era by commissioning 50 MW Wind Power Plant at Patan, Gujarat. 63 MW Wind Power Project is under construction at Dwarika, Gujarat. THDCIL has signed MOU with SECI for setting up Grid connected Solar Power Projects upto 250 MW capacity. THDCIL has also signed a tripartite agreement with SECI and KSEB for development of its first 50 MW Solar project at Kasargod Distt. Kerela.

The 'Sustainability Report 2015-16' provides contribution that THDCIL has done towards Nation's economy, society and environment.

I hope that this report will provide insight of THDCIL's efforts towards sustainable development.

I invite your feedback for continual improvement.

(D.V. Singh)
Chairman and Managing Director

2.0 About this Report

THDCIL is annually releasing Sustainability Report since publication of its first Sustainability Report for the year 2008-09. THDCIL follows Global Reporting Initiative (GRI) guidelines, International Hydropower Association (IHA) Guidelines and National Voluntary Guidelines on Social, Environmental and Economical Responsibilities of Business released by Ministry of Corporate Affairs, Govt. of India. The current Report is the 8th Sustainability Report for the year 2015-16 based on National Voluntary Guidelines (NVG) on Social, Environmental and Economical Responsibilities, however efforts are also being made to incorporate GRI Guidelines along with NVG.

Scope:

Sustainability Report 2015-16 addresses activities of THDCIL viz. business operations, Environment measures, employee's welfare, CSR works etc and their impacts during the year 2015-16 related to its business areas. This Report is available on the company's Web site (<http://thdc.co.in>).

Boundary:

Sustainability Report 2015-16 is confined to Corporate Office, Operating Plants and Under Construction Projects of THDCIL.

Data Collection:

Data has been collected from various departments of Corporate Office, Operating Stations, Construction Project Sites and CSR Units. For collection of data, specific questionnaires were prepared based on National Voluntary Guidelines and GRI Performance indicators. Uniform approach has been adopted for measurement, calculation, analysis and suitably incorporation of data in the reporting framework. It is worthwhile to mention that there is no significant change in reporting framework of this report from previous year.

COMMUNICATION TOOLS

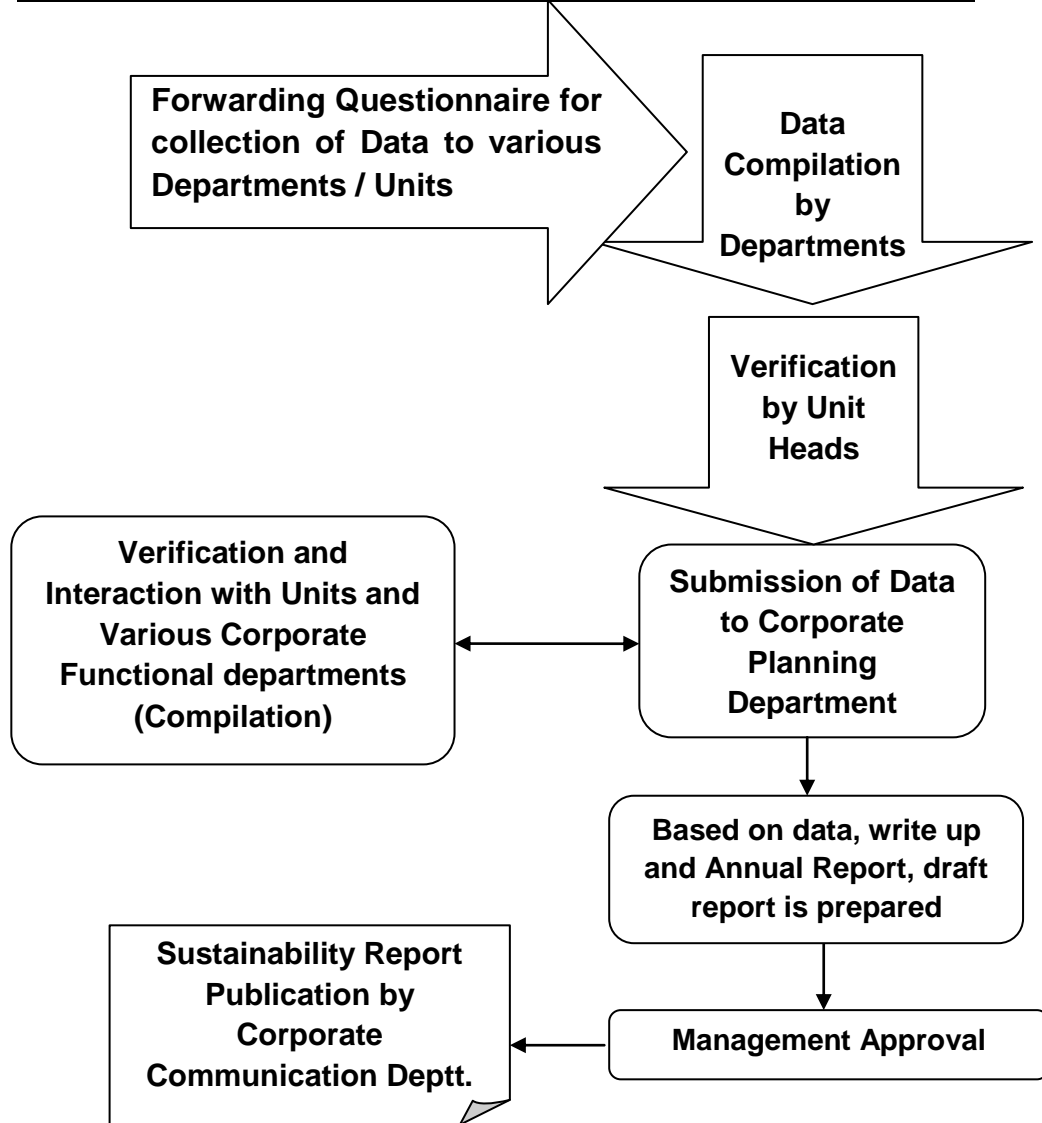
The main tools used for communicating and reporting on sustainability are:

- GRI Guidelines
- NVG Guidelines
- Ministry of Power directions and guidelines issued from time to time.
- Sustainability Report 2014-15 of THDCIL.(www.thdc.co.in)
- Web site containing details on Corporate Social Responsibility and sustainable development.
- Annual Report 2015-16, presenting 2015-16 highlights. www.thdc.co.in
- Business Responsibility Report provided in Annual Report 2015-16.

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- Chapter on “Business Overview- Capital Creation in a Sustainable Way” published in Annual Report 2015-16 of THDCIL
- THDCIL’s Policy on CSR & Sustainability. (www.thdc.co.in)
- THDCIL’s CSR Communication Strategy.
- Sustainability Reporting Framework available in CSR Communication Strategy.

Flow Chart of Sustainability Report preparation



3.0 About us

3.1 Vision, Mission and Values:

Vision

A world class energy entity with commitment to environment and social values.

Mission

- ✓ To plan, develop and operate energy resource efficiently.
- ✓ To adopt state of the art technologies.
- ✓ To achieve performance excellence by fostering work ethos of learning and innovation
- ✓ To build sustainable value based relationship with stakeholders through mutual trust
- ✓ To undertake Rehabilitation and Resettlement of project affected persons with human face.

Values

- ✓ Zeal to excel and zest for change.
- ✓ Integrity and fairness in all matters.
- ✓ Respect for dignity and potential of individuals.
- ✓ Ensure speed of response.
- ✓ Strict adherence to commitments.
- ✓ Foster learning, creativity and team work.
- ✓ Loyalty & pride in the organization.

3.2 Company's Profile

THDC India Limited is a Joint Venture of Govt. of India (GoI) and Govt. of Uttar Pradesh (GoUP). The equity is shared in the ratio of 75:25 between GoI and GoUP. The Company was incorporated in July' 88 to develop, operate & maintain the 2400 MW Tehri Hydro Power Complex and other hydro projects. The Company has an authorised share capital of Rs. 4000 Cr. THDCIL is a Mini Ratna Category-I and Schedule 'A' CPSE.

Total installed capacity of THDCIL presently is 1450 MW. THDCIL has two hydro electric generating stations, namely Tehri Stage-I (4X250 MW) and Koteshwar HEP (4X100 MW) and one Wind power generating station of 50MW at Patan, Gujarat. All the generating stations are operating successfully.

The Corporation has grown into a multi-Project Organization, with Projects spread over various States as well as neighboring country, Bhutan.

THDCIL presently has a portfolio of 15 projects totaling to an installed capacity of 6134 MW under various stages of implementation / development. The total operational capacity is 1450 MW.

The 1,000 MW Tehri Power Station was commissioned by THDCIL in 2006-07. The Tehri Project is a multipurpose Project providing peaking energy to the Northern Region, Irrigation benefits to Uttar Pradesh, and Drinking Water to NCT of Delhi and U.P. Due to regulated releases from the Tehri storage reservoir, the existing downstream hydro projects of the State are also getting benefitted by way of augmentation in their generation at no additional cost to them.

The 400 MW Koteshwar HEP, downstream of Tehri was commissioned in 2011-12. The 1,000 MW Tehri Pumped Storage Plant, which is under construction, would utilize the Tehri and Koteshwar reservoirs as the upper and lower reservoir respectively.

In addition to the 2,400 MW Tehri Hydro Complex, THDCIL is implementing the 444 MW Vishnugad Pipalkoti Hydro Electric Project (VPHEP) on the river Alaknanda in Uttarakhand. THDCIL is also implementing 24 MW Dhukwan Small Hydro Project on the Betwa river in Uttar Pradesh. In addition, there are several hydro projects of THDCIL which are under various stages of Survey & Investigation / DPR preparation.

Towards diversification of the company into Renewable Energy areas, THDCIL has forayed into wind power with the commissioning of 50 MW Wind Power Project at Patan, Gujarat on 29.06.16. THDCIL has also signed MoU with Solar Energy Corporation of India (SECI) for setting up Grid Connected Solar Power Projects up to 250 MW capacity. Subsequently, THDCIL has also signed a Tripartite Agreement with SECI and Kerala State Electricity Board for development of 50 MW Solar project in Distt. Kasaragod, Kerala.

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Government of UP has allotted Khurja Super Thermal Power Plant (2X660 MW) in Bulandshahar Distt to THDCIL for implementation.

Under Indio-Bhutan Co-operation in hydro Sector development, THDCIL is involved in implementation of Bunakha HEP (180 MW) as a Joint Venture Project. The Company has also taken up work of updation of DPR of Sankosh HEP (2585 MW) in Bhutan as a consultancy assignment.

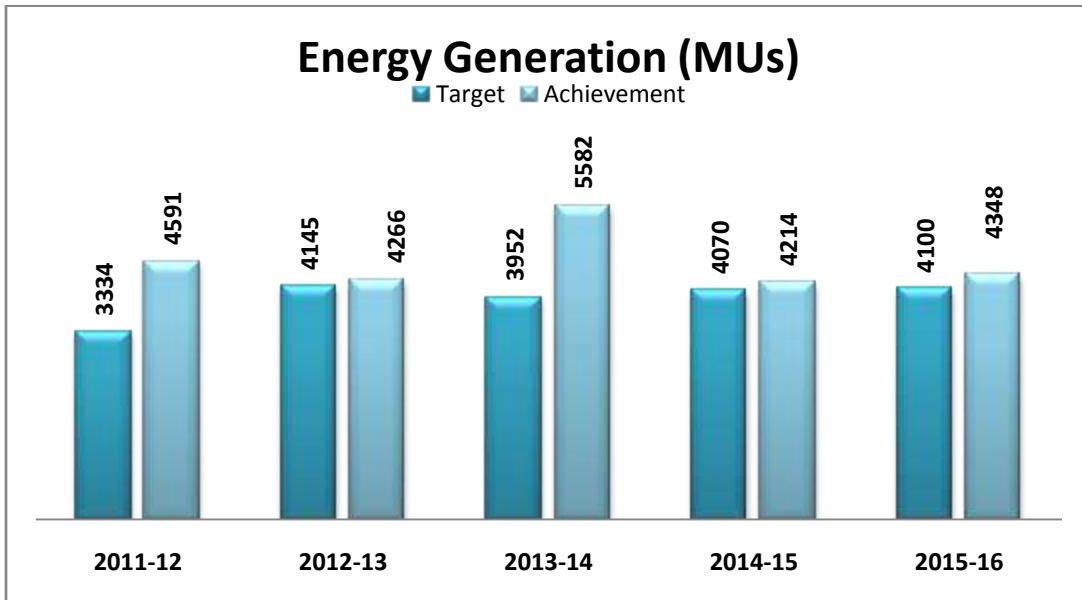
THDCIL is a consistently profit making company since the commissioning of its first generating station Tehri Dam & HPP in the year 2006-07.

THDCIL has obtained ISO 9001:2008 Certificate of Quality Management System, ISO 14001-2004 Certification (Environment Management System) and ISO 18001:2007 (Occupational Health and Safety Management System) Certification for Corporate Office, Rishikesh, Tehri HPP, Tehri PSP, Koteshwar HEP and Vishnugad Pipalkoti HEP.

3.3 Energy Generation Statistics

THDCIL generated 4348.28 MU of Energy during 2015-16 against annual target of 4100 MU.

Free energy to the tune of 371.02 MU from Tehri HPP (1000 MW) and 148.91 MU from Kotershwar HEP (400 MW) was provided to the Home State of Uttarakhand during the period.



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3.4 Key Business Locations / THDCIL Projects

Sl. No	Projects / State	Ins. Cap. (MW)	River / Basin	Remarks
Hydro Electric Projects				
A	Uttarakhand			
1.	Tehri Dam & HPP	1000	Bhagirathi	Commissioned in 2006-07
2.	Koteshwar HEP	400	Bhagirathi	Commissioned in 2011-12
3.	Tehri PSP	1000	Bhagirathi	Under implementation. Expected Commissioning 2019-20
4.	Vishnugad Pipalkoti HEP	444	Alaknanda	Under implementation. Funding by World Bank. Expected Commissioning 2019-20
5.	Jhelam Tamak HEP	108	Dholiganga	Under DPR preparation.
6.	Maleri Jhelam HEP	65	Dholiganga	Under DPR preparation.
7.	Bokang Bailing HEP	330	Dhauligan ga	The project is now excluded from the boundaries of Askot Musk Deer Sanctuary. THDCIL has requested GoUK to grant permission for S&I.
B	Uttar Pradesh			
8.	Dhukwan SHP	24	Betwa	Under construction, PPA signed with UPPCL. Expected commissioning 2017-18.
C	Maharashtra			
9.	Malshej Ghat PSS	700	Kalu	DPR submitted to State Govt. of Maharashtra. Signing of Implementation Agreement with State Govt. of Maharashtra awaited.
10.	Humbarli PSS	400	Vazarde Nallah	Project falls under Koyna Wild Life Sanctuary. To be taken up for DPR updation after Wild Life Clearance
D	Bhutan			
11.	Bunakha HEP	180	Wangchu	DPR Cleared by CEA. Project envisaged to be implemented by Joint Venture between THDCIL and Druk Green Power Corporation, Bhutan.
Thermal Project- Uttar Pradesh				
12.	Khurja STPP	1320		DPR Prepared. Pre-investment activities under progress.
Solar Project- Kerala				
13.	Solar Power Project	50	-	Tendering under progress.
Wind Power Project- Gujarat				
14.	Wind Power Project	50	-	Commissioned (under operation)
15.	Wind Power Project	63	-	Under Construction
Total		6134		

4.0 Corporate Governance and Ethics

4.1 THDCIL's Board of Directors:

THDCIL is a Schedule-A, "MINIRATNA (Cat.I) Public Sector Enterprise. Being a Miniratna company THDCIL has provided increased flexibility in decision making regarding investment and operations of THDCIL. The Board of Directors of THDCIL have powers to approve capital expenditure on new projects, modernization, purchase of equipment, etc. upto Rs. 500 crores, or equal to the net worth, whichever is lower.

THDCIL is a Government Company within the meaning of Section 2(45) of Companies Act., 2013 with Equity Share Holding of 75% by President of India and 25% by Governor of Uttar Pradesh. The business of THDCIL is superintended by the Board of Directors. As per the Articles of Association of the Company, the President of India shall from time to time determine the number of Directors of the Company, which shall not be less than seven and not more than fifteen.

The Board of THDCIL comprises of:

- Full time Functional Directors including Chairman and Managing Director;
- Govt. Nominee Directors; and
- Independent Directors.

Presently, Board of Directors of THDCIL comprises of ten Directors consisting of four Functional Directors including Chairman, one Nominee Director of Government of India, two nominee Directors of GoUP and three Independent Directors. The Directors have wide range of experience and skills.

The company presently has three Sub Committees of Board as under:

- Audit Committee
- Remuneration Committee
- CSR and Sustainability Committee

All the Independent Directors serve on these Committees and one of them chairs the meeting. The Company Secretary serves as the Secretary to all the Sub Committees of Board.

The terms of reference and details of members of Board of THDCIL is available in Annual Report 2015-16 of THDCIL. Annual Report 2015-16 is available on THDCIL's website (<http://thdc.co.in>)

Details of Board Meetings during the year 2015-16

SN	Date of Board Meetings	Strength of Board	No of Directors Present
1.	May 23, 2015	7	5
2.	July 30, 2015	7	5
3.	September 22, 2015	7	6

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4.	December 22, 2015	10	6
5.	January 27, 2016	10	7

4.2 Governance

Governance involves a set of relationships between Company's Management, its Board, its Shareholders and Stakeholders. THDCIL believes that Corporate Governance should involve empowerment and accountability of the Management while remaining compliant to the Government Policies.

In order to maintain good governance, THDCIL has formulated various policies and principles viz. Code of Business Conduct and Ethics, Right to Information, Whistle Blower Policy, Corporate Ethics Policy, Conduct Discipline and Appeal rules for the executives and Supervisors, Standing Orders for the workmen and Procurement Processes.

Corporate Governance Mechanism of THDCIL is based on following parameters:

- Transparency and fairness.
- Timely and Balanced Disclosures
- Role and responsibilities of the Board to Add value.
- Integrity in Financial Reporting.
- Promote ethical and responsible decision making.
- Obligations towards Environment.
- Rights and Interests of stakeholders.
- Compliances.

4.2.1 Code of Business Conduct and Ethics:

In THDCIL, there is a Code of Business Conduct & Ethics for Board Members and Senior Management. This helps in enhancing ethical and transparent process in managing the affairs of the company. This Code is in line with Vision and Mission of the THDCIL. This code enables strengthening of ethical decision-making and enhancing transparency in the Company. It may also serve as a basis for judging the merit of a formal complaint pertaining to violation of professional ethical standards.

Code of Business Conduct and Ethics is available on THDCIL's Website (<http://thdc.co.in>).

4.2.2 Corporate Ethics Policy

THDCIL's Corporate Ethics Policy aims to provide the Board of Directors, Officers, employees and other representatives of the Corporation as well as customers, suppliers and general public with a statement of the Company's commitment to ethical business conduct and set the standards of ethical business conduct and compliance

required in all facets of business operations. This policy is the Company's declaration of the ideals and values under which it will operate. These are based on a Company's attestation that it will operate with solid moral principles. Corporate Ethics Policy aims to maintain the highest standards of ethical business conduct, because ethical behavior is the only means through which sustainable growth can be achieved. The Company is committed to act as a responsible and ethical entity of Corporate world. Corporate Ethics Policy of THDCIL was approved by Board of THDCIL in Dec'11.

4.2.3 Conduct, Discipline and Appeal Rules and Standing Orders

THDCIL is committed to maintain the highest standards of ethics, professionalism and business conduct as well as ensure to act in strict compliance with the law at all times. Conduct, Discipline and Appeal Rules and Standing Orders of THDCIL are documented and displayed on the web site.

4.2.4 Whistle Blower Policy

In order to achieve the objective of transparency in governance, THDCIL adopted Whistle Blower Policy in April 2011. The Policy provides a detailed system and opportunity to employees to report on the violation of the ethics and suspected or committed fraud. The matter can be referred to the Chairman, Audit Committee in exceptional cases. Due protection is provided to the Whistle Blower keeping his identity secret.

4.2.5 Right to Information

The Right to Information Act, 2005 is applicable on THDCIL. THDC India Limited has taken concrete actions to provide information to the citizens of the country in accordance with The Right to Information Act, 2005. THDCIL has designated Appellate Authority, CPIO, PIOs and APIO of the Corporation and their particulars are available on THDCIL's official website. THDCIL's website also contains information as required to be published under section 4 (b) of the Act at a separate RTI link. The annual financial statements of THDCIL are also available at website.

During the year 2015-16, 143 applications were received from citizens across the country seeking information of various nature and information was made available to them on time. During the year 15 appeals have been received by the First Appellate Authority. After examination, all the appeals have been disposed off. No appeal has been filed at Central Information Commission during the reporting period.

4.2.6 Procurement Processes:

Effective and transparent procurement processes are aimed at selection of competent and experienced contractors, timely award of the contracts, implementation of the projects without time and cost overruns and avoidance of disputes and litigation.

All the procurement processes are carried out as per the procedures and guidelines adopted by the Corporation and complying with the guidelines of government as well as Central Vigilance Commission. The procurement processes adopted are equitable, transparent and accountable. The procurement process is done mostly on open tender basis (i.e. National Competitive Bidding (NCB) or International Competitive Bidding (ICB)) by giving wide publicity both in newspapers as well as publishing on THDC's website and also on Public Procurement Portal to ensure complete access and transparency. Human Rights clause has also been incorporated in all major Agreements viz. EPC Contract covering all EM equipment works for the execution of Tehri PSP (1000 MW), Civil & HM works and EM works of VPHEP (444 MW), Civil works, EM & HM works of Dhukwan SHP (24 MW) and balance civil works of Koteshwar HEP (4000 MW).

Transparency and Accountability has been ensured by THDCIL with introduction of various measures such as e-payments, e-billing, e-procurement, e-auction, vendor registration, online-tracking of bill status, uploading of contract documents as well as award details on THDCIL website.

4.2.7 Integrity Pact & Independent External Monitors (IEMs)

THDCIL is implementing the Integrity Pact Program in line with the requirements of Central Vigilance Commission and Transparency International India. The Integrity Pact is a tool developed by Berlin based Transparency International for enhancing the degree of fairness and transparency in procurement and contracts, resulting in substantial improvement in systems and reduction in corruption in public dealings.

Integrity Pact essentially envisages an agreement between prospective vendors/bidders, and THDC India Limited (THDCIL), committing the persons/ officials of both sides not to resort to any corrupt practice in any aspect of the contract at any stage. In case of contracts, where provision of Integrity Pact is envisaged, only those vendors / bidders, who commit themselves to IP with THDCIL, would be considered competent to participate in the bid process. Any violation would entail disqualification of the bidders and exclusion from future business dealings. IP, in respect of a particular contract should cover all phases of the contract, from the stage of Notice Inviting Tender (NIT)/ Pre-bid stage, till the conclusion of the contract, i.e., final payment or the warranty/guarantee period. In its commitment to ensure transparency, THDCIL has also entered into an MoU with Transparency International India in Nov, 2012.

THDCIL as a policy has adopted Integrity Pact (IP) in all its major procurements for goods, works & services. Considering the nature of works in the context of THDCIL executing major Hydro Electric Projects, the threshold limit for keeping provision of IP has been fixed on the basis of ABC analysis. The present threshold limit fixed is Rs. 50.0 Cr. for procurement of goods and services and Rs. 100.0 Cr. for procurement of works. THDC India Ltd., under its Integrity Pact Programme, is implementing the Integrity Pact in various major work contracts viz. EPC contract of 50 MW capacity of

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Wind Power Project, EPC Contract of Tehri PSP, Dhukwan SHP Civil Works Package and balance works of Koteshwar HEP etc.

Subsequent to completion of tenure of previous panel of IEMs, a new panel of two Independent External Monitors (IEMs) comprising of Shri Rajan Nair, Ex-Chairman, Brahmaputra Board and Shri M. Deena Dayalan, Ex-Director General (CAG) has been appointed w.e.f. 05.10.2015 with the approval of CVC to oversee implementation of Integrity Pact Program in THDCIL.

THDCIL is making all-out efforts to sensitize the officials concerned to adopt transparency in procurements as well as in their office working to maintain high standards of public probity and ethics.

Highlights 2015-16:-

During the year 2015-16, review meetings of Independent External Monitors (IEMs) with THDCIL's management were held at various offices and Projects of THDCIL on 02.06.2015, 28.11.2015 and 02.03.2016. During the visits to projects, critical issues affecting the progress of work at project were appraised to IEMs. IEMs had discussions with project officials regarding compliance of Integrity Pact during execution of works. The suggestions of IEMs panel are being considered appropriately in implementation of Integrity Pact. During 2015-16, Integrity Pact has been incorporated in the EPC contract of Wind Power Project (50MW) at Patan Wind Park, Gujarat with its comprehensive Operation & Maintenance for 20 years. IEMs in their remarks and conveyed that they have not received any complaints so far on any matter and expressed satisfaction about the progress made in the implementation of Integrity Pact in THDCIL.

4.2.8 Corruption Mitigation:

THDCIL believes in execution of work in fair, transparent and time bound manner. All out efforts are being made to eradicate/ mitigate corruption associated in implementation of work. A well established Vigilance Department headed by CVO is in place focusing on various vigilance mechanisms such as Preventive, Predictive, Participative apart from Punitive. THDCIL especially focuses on Preventive vigilance by implementing various System Improvements and utilization of leveraging information technology (Various IT packages developed / being developed by THDCIL to ensure transparency) as effective tool in THDCIL administration. Some new areas which have potential of corruption have been identified by Vigilance. Checks in these areas were conducted & systems are being streamlined in consultation with management to bring transparency and curb possibilities of corruption.

As part of Preventive Vigilance, CTE Type/ Surprise inspections are conducted. During the year 2015-16, 50 No's of Surprise Inspections & 12 No's of CTE Type Inspections were carried out by Vigilance Department. Reports on Surprise Check/CTE Type inspection have been submitted. Necessary actions as per the recommendations of the competent authority have been taken. During the year 2015-16, 01 Minor Penalty and 12 Nos. of Caution memos were issued.

Agreed list and List of officers of Doubtful Integrity are being maintained. None of the Executives figuring in these list have been working in any sensitive post. Exercise to identify sensitive post in THDCIL has been conducted. Executives from sensitive posts have also been transferred to non sensitive post by the management. CVC guidelines on Rotation of officials from Sensitive posts are being implemented in THDCIL.

Online registration system of vendors for participation in E-tendering. The contracts awarded are published in website in each month. E-payment practice has been introduced. Almost 100% contractual payments are being made electronically. Conditions are accordingly mentioned in tender documents.

Online complaint system, a major step to extend transparency in organizational working has been developed and deployed on 06.11.2014, after security audit.

4.2.9 Leveraging information technology for good governance:

In order to strengthen good governance, various packages using information technology have been developed / being developed as under:

- Bill Tracking System
- Grievance Tracking System and Vigilance MIS
- Commercial module, integration with Financial Management System (FMS)
- Human Resource Management System (HRMS) software
- Financial Management System (FMS) application
- Web based software Quality Assurance
- On-line Billing System

5.0 OUR STAKE HOLDERS

Stakeholder engagement in decision making and accountability towards its activities is essential for every company for its all round growth. To understand the Stakeholders' needs and expectations, it is essential to have a mechanism in place for effective communication. Stakeholder engagement takes into account the varying perspectives, priorities, and limitations of different stakeholders. A better understanding of stakeholders, result in an easier and more receptive operating environment and is also a major source of innovation.

THDCIL engage stakeholders to provide additional insights, expertise and knowledge on multiple aspects of sustainability, including obtaining feedback on environmental impact assessment (EIA) & Environment Management Plan by making these documents public through THDCIL's website, display in Public Information Centers & circulating the brief to the villagers of Project Affected Areas. A range of insight tools are used to gather stakeholders' feedback on both existing activities and future sustainability priorities of Company.

Due to the diverse interests of each stakeholder group, which varies in each of our area of operation, we adapt our approach, communication channels and engagement activities as appropriate. THDCIL continuously seek to understand its stakeholders' expectations and demands and reflect these in our Sustainability Strategy, report and overall business activities.

THDCIL has formulated Citizen's Charter with the aim to make citizens aware of THDCIL's Vision, Mission, functioning and its business areas.

THDCIL has adopted diversified means of communication to reach out to its stakeholders. The key achievements during F.Y. 2015-16 in the area of Corporate Communication are:

- Corporation's official facebook page & twitter handle has been started in June 2013. Both these social Media tools are linked with Ministry of Power, PMO & My. Gov. (Citizen Engagement Platform) of Govt. of India.
- Important news in print media is forwarded to senior executives on email to keep them informed about major power sector related news.
- THDCIL has launched its quarterly electronic magazine called "THDCIL Communication Charter" with interesting, informative and imaginative content. The attempt behind this initiative is to promote "User Generated Content" (UGC) and encouragement of employees participation in the communication process of the Corporation.
- **Collaborative Knowledge Desk:-** In order to facilitate internal exchange of knowledge, information, key learning, Success Stories etc. THDCIL has started a Collaborative Knowledge Desk on its web portal.

- **THDCIL Corporate Film:-** THDCIL has produced a Corporate Film of THDCIL in 2016 named as “THDCIL-A Journey towards Excellence” which visually sketches the journey of more than 25 years of the Corporation in frames.

5.1 Stakeholders Identification

To ensure proper identification, Stakeholders Identification is kept as an integral part of THDCIL’s CSR Communication Strategy. Communication strengthens trust between the organization and its stakeholders. Communication is critical to keep all the stakeholders well informed, especially the employees so as to ensure that not only all the business processes are in tune with the globally accepted ethical systems and sustainable management practices, but also their engagement with the external stakeholders is based on these values.

List of identified stakeholders of THDCIL include:

- Government and Statutory Bodies,
- Employees,
- Customers,
- Suppliers & Contractors,
- Media,
- Project Affected Persons/ Local and Indigenous communities,
- Non Government Organizations,
- Vulnerable groups within local communities,
- Environment and society at large.

5.2 Dialogue with the Stakeholders

THDCIL has established various collaborative means for gaining insight into its stakeholders’ expectations and concerns.

THDCIL maintains ongoing relations with its numerous stakeholders. Good dialogue is essential for preserving mutually beneficial relations, obtaining support for important activities and even reconciling diverging interests. THDCIL maintains close relations and works in partnership with organizations & individuals concerned with its projects and operations.

THDCIL maintains close relations and works in partnership with organizations & individuals concerned with its projects and operations. THDCIL regularly survey the expectations and concerns of groups and public affected by its activities in order to improve its practice and management.

5.3 Stakeholder Engagement Summary

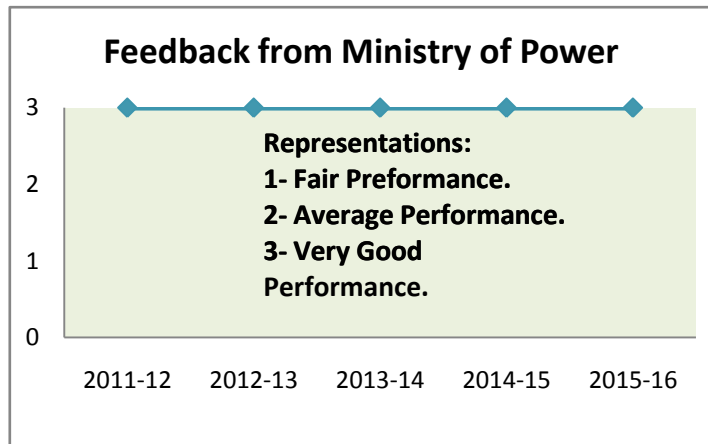
STAKEHOLDERS	MODE OF ENGAGEMENT	REGULARITY
Government and Statutory bodies	<ul style="list-style-type: none"> • Signing of MoU • Correspondence • Annual Report • Meetings 	<ul style="list-style-type: none"> • Annually • Round the year • Annually • As and when required

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	<ul style="list-style-type: none"> • Presentations • Publication of Magazines • Grievance Redressal Mechanism • Circulars and Officer Orders • Communal Programmes 	<ul style="list-style-type: none"> • As and when required • Quarterly, Annually, Half-yearly • Round the Year • Round the Year • Round the Year
Employees		
Customers	<ul style="list-style-type: none"> • Signing of PPAs • Feedback survey • Meetings • Correspondence 	<ul style="list-style-type: none"> • At the start of any project • Annually • As and when required • Round the year
Suppliers & Contractors	<ul style="list-style-type: none"> • Tenders • Open Bid Discussions • Policy and Procedures • Meetings • Joint Discussions 	<ul style="list-style-type: none"> • As and when demand arises • With every award • Round the year • Regular basis • Regular basis
Project Affected Persons/ Local and Indigenous communities	<ul style="list-style-type: none"> • CSR Programmes • Meetings • Grievance Redressal • Magazines • Pamphlets / Website Disclosures • Public Information Centres 	<ul style="list-style-type: none"> • Round the Year • As and when required • Round the Year • Quarterly, Annually, Half-yearly • Round the Year • Opened at project sites-operational
Media	<ul style="list-style-type: none"> • Press Briefings • Invitations to events 	<ul style="list-style-type: none"> • Round the Year • Round the Year
Society at a large	<ul style="list-style-type: none"> • Press News • Notice Boards • Publicity • CSR Programmes • Display on website 	<ul style="list-style-type: none"> • Round the year • Round the year • Round the year • Round the year • Round the year

5.3.1 Government and Statutory bodies: THDCIL is a joint venture of Govt. of India

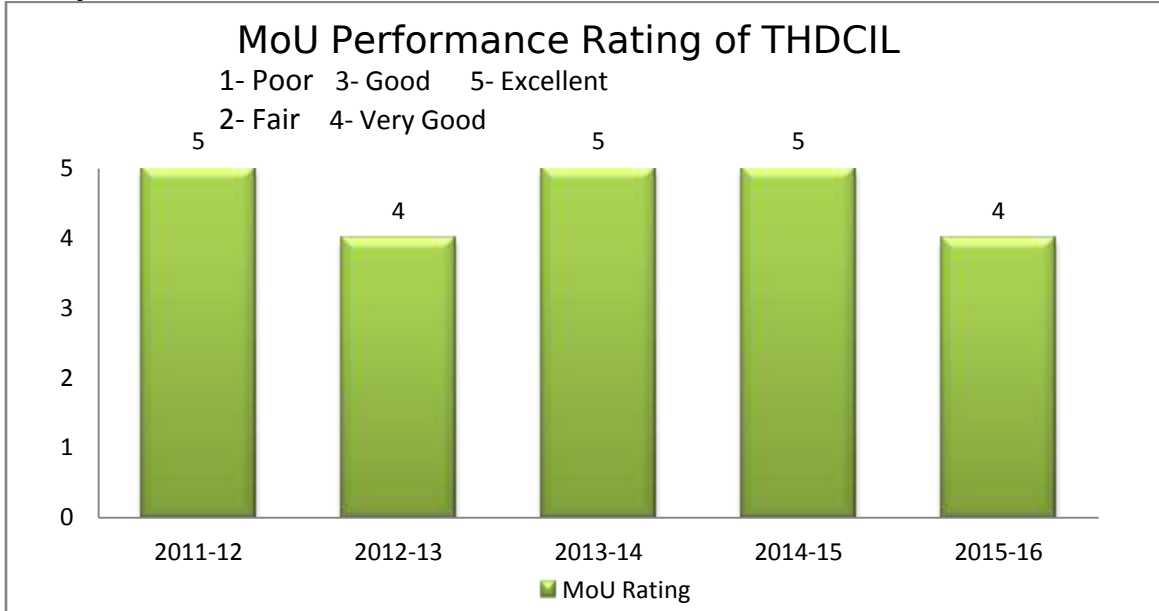
Govt. of Uttar Pradesh with shareholding of 75:25. THDCIL is expected to provide various input information to Ministry of Power on the issues related to various activities. The response to various queries from MOP is required to be submitted in time bound manner. A system has been evolved for taking feedback from the MoP on a three point scale; with suggestions for further



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improvement on lead time and quality of response.

THDCIL signs MoU with Ministry of Power for Performance Parameters every year wherein the financial and nonfinancial targets are fixed for the next financial year. The evaluation of Company's performance is done every year by the Department of Public Enterprises (DPE) and performance rating is assigned on a five point scale; Excellent, Very Good, Good, Fair and Poor.



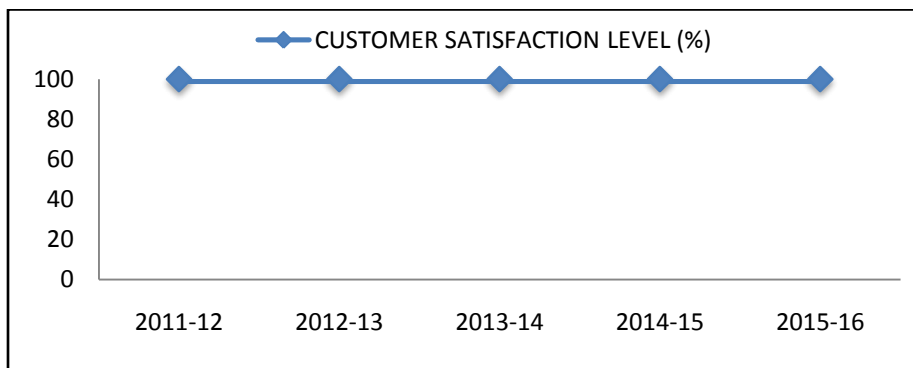
5.3.2 Employees: Employees are vital part of THDCIL. Employees are engaged in day to day activities and periodical dialogues are held to understand their needs and expectations. Employees feedback is used to develop action plans to foster motivation. Company also organizes various events to stimulate creativity and encourages employees to participate in sustainability activities. THDCIL is also conducting workshops / seminars for sensitizing employees about concept of sustainable development. Details about human capital of THDCIL are elaborated in Chapter 6.0.

5.3.3 Customers: THDC India Limited has been closely interacting with its beneficiaries continually to ensure their satisfaction. Presently, nine States/UT of Northern Region, namely Delhi, Haryana, Himachal Pradesh, J&K, Punjab, Rajasthan UT of Chandigarh, Uttar Pradesh and Uttarakhand are the beneficiaries of THDCIL's Generating Stations. It is because of high level of satisfaction that one of the beneficiary Chandigarh agreed to buy additional 40 MW power from THDCIL which was earlier being supplied to Delhi Discoms from Tehri HPP (1000 MW). THDCIL's aim is to keep on improving the services provided to the beneficiaries and enhance their level of satisfaction. Therefore, meetings are frequently held between the officials of THDCIL and the beneficiaries at various levels. Development of inter-personal relations boosts the harmony between THDCIL and the utilities which results into amicable resolution of contentious issues, if any. Visit of officials from the beneficiaries, NRPC, NRLDC, CERC etc. are organized quite frequently to the project sites for their better understanding and appreciation of the ground realities of the projects. Besides,

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THDCIL is closely interacting frequently with the beneficiaries during NRPC, TCC, Commercial Sub-Committee & OCC meetings. The information and services, as and when required by the beneficiaries, are promptly provided to them to their full satisfaction.

THDCIL believes in rendering best service to the customers. THDCIL seeks feedback from the beneficiaries on 'five-scale rating' basis to keep on improving the quality of services. All the beneficiaries have been acknowledging the quality of services rendered by THDCIL with 'Excellent' rating year after year.



5.3.4 Suppliers & Contractors: Suppliers and contractors are vital stakeholders of THDCIL as these are considered as essential building blocks in the growth of THDCIL. Fair and transparent procedures are adopted for tendering and award of works, Pre-bid meetings and open bid discussions with contractors are organised for every major award. During contract implementation stage, regular interaction and periodical meetings are held to resolve the issues raised in overall benefit of the project and the shareholders.

5.3.5 Project Affected Persons/ Local and Indigenous communities: THDCIL has a mission "To undertake Rehabilitation and Resettlement of project affected persons with human face".

The Tehri Project involved huge submergence and consequential large scale displacement. R&R of nearly 15000 families has been carried out with a human face.

R&R cost (including land acquisition, compensations, development of facilities etc.), is approx. Rs. 15000 Million i.e. nearly 18% of the total cost of the Tehri Project. This is one of the highest in the country for such Projects.

The Resettlement & Rehabilitation Policy for VPHEP exceeds provisions laid down in the National Policy on Resettlement and Rehabilitation (2007). In VPHEP (444 MW) project, Shri Bhuvaneshwari Mahila Ashram (SBMA) an NGO has been engaged to act as interface between THDCIL and the Project affected communities.

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5.3.6 Media: THDCIL has formulated structured communications tools and established a separate Communication Department at Corporate Level for interaction with media (both print and electronic media). Press releases of all the activities are issued in time bound manner. Media persons are invited in major events to cover the event.

In order to have effective and constructive engagement of the media, planned measures are being taken by engaging a media consultant.

6.0 Our Employees- Human Resource Management

6.1 Human Resources

Organisations are made up of people and function through people. Without people, organisation cannot exist. The resources of men, money, materials and machinery are collected, coordinated and utilised through people. Human Resource Management (HRM) may be defined as a set of policies, practices and programmes designed to maximise both personal and organisational goals. It is the process of binding of people and organisations together so that the objectives of each are achieved. HRM consists of people related functions as hiring, training, and development, performance review, compensation, safety and health, welfare and industrial relation. These are typically the functions of "personnel management and are administrative and supportive in nature. HRM necessitates alignment of HR policies and practices with the organizations" strategies- both corporate as well as functional. By meshing HR practices and policies with strategies, the HR executive formulate and implement business strategies. The very concept of HRM signifies that the role of executive is elevated from an administrative level to that of the board.

THDCIL believe that the human resources are the most valuable assets of our Corporation and play a vital role in the growth of the Company. Both, men and women are treated with equal respect and dignity and it is strictly ensured that all aspects related to human rights are upheld by the Organization.

THDCIL respects the right to freedom of association, participation, collective bargaining and provide access to appropriate grievance redressal mechanism.

THDCIL is strictly against the child labour, forced labour or any form of involuntary labour, paid or unpaid and do not allow contactors or sub- contractors to engage child labour, forced labour or any form of involuntary labour.

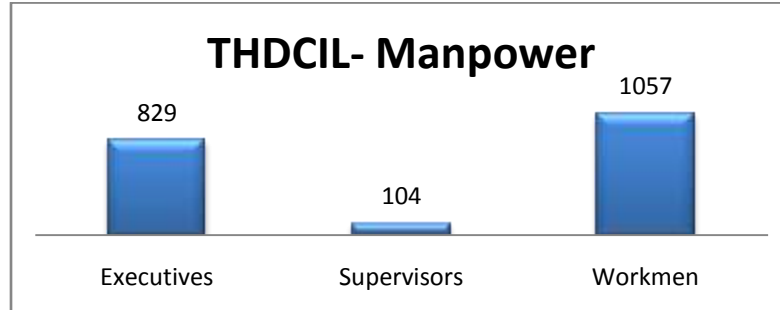
THDCIL has systems and practices to ensure a harassment free workplace where employees feel safe and secure in discharging their responsibilities.

Accordingly, particular attention is paid to employees' professional and personal development. The Company uses training, awareness and guidance tools to encourage employees to commit to sustainability

THDCIL provides a workplace environment that is safe, hygienic, humane, and which upholds the dignity of the employees. THDCIL values the respect for dignity and potential of individuals, which is communicated to the employees and trains them on a regular basis.

The Manpower Strength of THDC India Limited as on 31.03.2016 is 1990.

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6.1.1 Recruitment

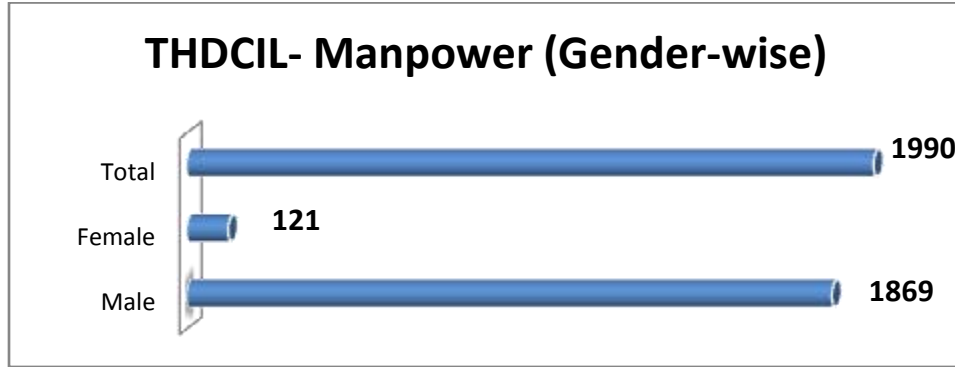
There is greater integration of competencies into different HR processes like recruitment, training, career progression, performance management etc. Recruitment of Executives is done on All India Basis using various avenues such as All India Tests, Campus Recruitments and other methods used by other NavRatnas and MahaRatnas. The recruitment Policy of THDCIL encompasses the constitutional provisions and guidelines for offering fair play, representation to Schedule Castes, Schedule Tribes, Other Backward Castes and Physically Challenged as per directives issued by Govt. of India from time to time. We follow the Presidential Directives as well as constitutional instructions that require us to implement policies accommodating SC/ST, other backward classes or physically handicapped individuals

Projected retirement and recruitment during next 10 years is as under:

Year	Retirement	Proposed Inductions
2016-17	63	115
2017-18	61	0
2018-19	71	95
2019-20	87	0
2020-21	86	100
2021-22	92	0
2022-23	92	135
2023-24	130	0
2024-25	144	135
2025-26	150	90

6.1.2 Gender wise Categorization

The role of all employees in THDCIL is critical in the growth of the company and equal opportunity is provided to all the employees. There is no discrimination in remuneration on the basis of Gender in THDCIL. There are 121 women employees as on 31.03.2016 in different categories. They represent 6.37% of the total strength of the company.



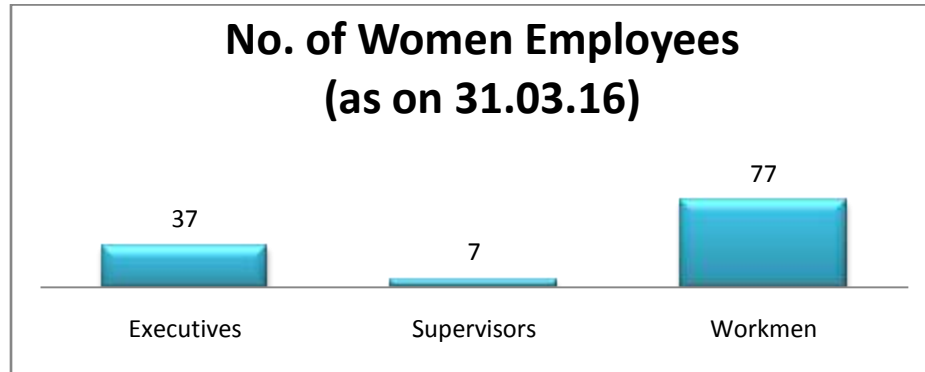
6.2 Women Welfare

THDCIL is an equal opportunity provider and professes gender neutrality. The Company follows all rules & regulations issued by Govt. of India from time to time in this regard. All employees, irrespective of their religion, sex, marital status, physical or mental disability, medical condition and socio-economic background are given equal opportunity in the company in terms of employment and career growth. Women are often made members of various committees formed to oversee/ recommend employee related matters and policies.

In compliance with the provisions of “Sexual Harassment of Women at Workplace (Prohibition, Prevention and Redressal) Act, 2013”, an Internal Complaints committee has been set up at Rishikesh and Tehri which deals with issues of sexual harassment at work place. Awareness/ Sensitization programmes are conducted for both men and women in this regard. This helps in generating a healthy work environment. THDCIL is an active member of the networking platform of Forum of Women in Public Sector which conducts programmes in collaboration with SCOPE for which company nominates women employees. The WIPS committee conducts various awareness programs for women employees of the corporation.

In the year 2015-16 various workshops on “Women Health & Wellness” and “Women Empowerment” were organized by HRD Department for THDCIL’s women employees at Corporate Office and various units. Total 05 Workshops (03 on “Women Health and Wellness” and 02 on “Women Empowerment”).

On the occasion of International Women’s Day (08.03.2016), THDCIL has organized various programmes for its women employees. Some of the topic discussed in these programme are Female Foeticide, Dowry System, Women Education, Women Safety, Domestic Violence Act, “Beti Bachao-Beti Padhao” etc.



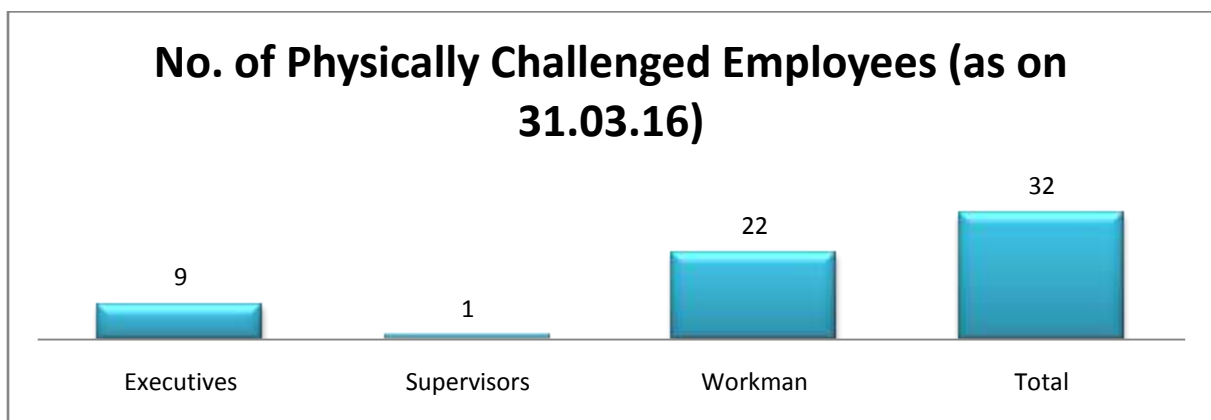
6.3 Persons with Disabilities (different abilities)

With a view to provide equal opportunities in services to the Persons with Disability (PWD), the Government of India has laid down a number of Presidential Directives. In compliance with directives of Government of India THDCIL has made efforts to encourage the participation of the Physically Challenged Persons in the organization and thus has always given preference to representatives of this category in the process of recruitment.

In compliance of implementation of United Nations Convention on the Rights of Persons with Disabilities, THDCIL has provided easy accessibility by way of erecting ramps in most buildings of the Corporation. Employees belonging to Physically Handicapped category were also nominated for attending special training programmes as per their special needs.

THDCIL has made efforts to encourage the participation of the Physically Challenged Persons in the organization. There is no discrimination in THDCIL on the basis of disability. All efforts are made to provide favourable working environment for Persons with Disabilities (PWD) employees by fulfilling their specific need wherever arises.

As on 31.03.2016, the total strength of the persons with disabilities is 32.



6.4 Employees Remuneration and Benefits

THDCIL offers attractive pay package / remuneration to its employees at par with the industry. Employee benefits includes Basic Pay, Dearness Allowance, Perks and Allowances @ 47% of the basic pay under Cafeteria Approach, House Rent Allowance/Lease Accommodation, Provident Fund contribution, Group Saving Linked Insurance, Gratuity etc. are extended.

THDCIL provides reimbursement for Medical Treatment of Employees and their dependents. Post retirement medical facility is also available. (details at Para 6.6)

Performance Related Pay (PRP) based on Performance Parameters are also provided to Employees based on DPE Guidelines.

THDCIL also provides House Building Advance (HBA), Higher Education Loan for wards of Employees, Car Loan and other advances at discounted rate of interest.

In order to ensure professional upgradation of Executives "Scheme for facilities of higher education" is also in place.

6.4.1 Maternity/ Paternity benefits

THDCIL provide due care in Maternity/ Paternity benefits/ facilities and leaves to its employees. THDCIL provides maternity leave of 180 days and paternity leave of 15 days on full payment basis.

Maternity leave is also allowed in case of miscarriage/abortion subject to the condition that the leave does not exceed six weeks from the date of miscarriage or abortion as certified by the Authorised Medical Attendant.

6.5 Grievances Redressal Mechanism

As a responsible corporate citizen, THDCIL undertakes and implements widely accepted initiatives like the Grievance Redressal mechanism, the Whistle Blower's policy. The objective of the Grievance Redressal Procedure is to provide an easily accessible mechanism for expeditious settlement of grievances leading to increased satisfaction on the job and resulting in improved productivity and efficiency of the organisation.

6.6 Post Retirement Benefits

Every organization needs to provide a proper superannuation plan to its employees in order to facilitate smooth transition from active work life. THDCIL take good care of the employees even when they superannuate serving the company. Statutory payments ranging from payment of Gratuity Fund, Statutory Pension is taken care of. Apart from statutory payments, there are provisions of Post Retirement Medical Facility and Pension Scheme for retired employees in the corporation. In line with post retirement

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benefits plan, Pension Schemes has been implemented after approval of MoP in the Corporation w.e.f. 01.01.2007.

The salient features of the above schemes are given below:-

(i) THDCIL Employees' Defined Contribution Pension Scheme

Employees on regular rolls of THDCIL on or before 01.01.2007 are covered under the Scheme. The Ordinary monthly mandatory contribution payable by an employee is 1% of his Basic + DA from the date of notification of the Scheme. The employer contribution in respect of each employee is 30% of his Basic Pay and DA Minus Employer's contribution towards CPF, Gratuity and Post Retirement Medical Scheme. They have the option to make the voluntary contribution towards Pension Scheme. The minimum service condition for payment of pension in THDCIL is 15 years. Services rendered in any other CPSEs prior to joining THDCIL would also be counted for this purpose provided similar scheme is there. Employee is eligible for pension in case of Superannuation, death while in service, separation on medical grounds i.e. total permanent disablement leading to cessation of service. Employee or beneficiary/nominee(s) as the case may be, may commute 1/3rd of accumulated corpus for lump sum payment. Employees superannuated from the Corporation in between 01.01.2007 to 31.12.2007 have the option to withdraw the entire accumulation.

(ii) Contribution Provident Fund (CPF)

Employees are covered under THDC Provident Fund Rules. The contribution payable by employees under these rules is 12% of Basic Pay & DA. Equal contribution is payable by the Company. Out of the contribution payable by the company, 8.33% of the Basic Pay & DA is remitted to Employee's Pension Fund.

(iii) Gratuity

For every completed year of service or part thereof in excess of six months, the employer shall pay Gratuity to an employee at the rate of fifteen days wages based on the rate of wages last drawn by the employee concerned, subject to maximum of Rs. 10 lacs whichever is less.

(iv) Post Retirement Medical Facility

There is a provision of Post Retirement Medical Facility wherein retired employees are reimbursed for OPD and IPD treatments just like regular employees. The retiring employees are required to become member of the scheme by paying annually or may opt to pay the one time" contribution as membership fee.

6.7 Employee Engagement:

Creation of mutual understanding, trust and co-operation among Management, Executives, Supervisors and Workmen is always a prime agenda of THDCIL's Management. It is evident that smooth and harmonious industrial relations are key essence of prosperity of THDCIL. THDCIL's success and profitability depend on

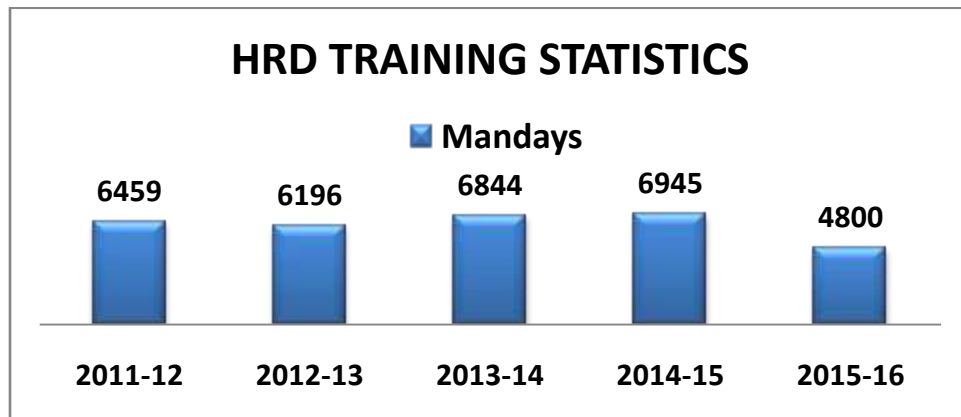
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effective utilization of its human capital and at the same time keeping their trust in THDCIL practices through constant dialogue at different forum among Management, Executives, Supervisors and Workmen to inform and seek suggestion on Management Decisions. Meetings and Workshops are organized for various Unions and Associations at regular intervals by the management for creating cordial relations among all levels. Efforts are being made to provide insight of all the decisions, achievements and initiatives of THDCIL's Management to all employees of THDCIL either through Electronic Mode (THDCIL's Website, Facebook Handle, Twitter Handle, Intranet, SMS etc) or through hard form viz. publication in THDCIL's Bi- Monthly Magazines, Annual Report, Sustainability Report etc). The information pertaining to Corporate and Financial Performance highlights, future plan outlay, health and safety, progress of major projects, new frontiers, globalization and diversification, key corporate challenges and expectations are also widespread among all employees. The efforts to promote employees' participation in management were continued during the year through activities such as Suggestions Scheme, Quality Circles etc.

6.8 Trainings and Skill Development of Employees

THDCIL, being an Engineering Organization requires continuous up-gradation of technical skills and competence of its employees. THDCIL ensures continuous skill and competence up-gradation of all employees by providing access to necessary learning opportunities, on an equal and non-discriminatory basis. THDCIL promotes employee morale and carrier development through enlightened human resource interventions. THDCIL has a dedicated HRD department and HRD Centre which ensures continuous up-gradation of skill and competence of employees by providing relevant training and learning opportunities.

Employees education and training are extended through various programmes/seminars organized in the corporation with faculty drawn from within and outside the organization. Where special up-gradation of skill/knowledge is required, selected employees are sent to various professional/academic institutes within and outside the country.



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Career Development approach adopted by THDCIL- There are basically five categories of employees in THDCIL i.e. Professionals, Non-Professionals, Skilled, Semi-Skilled and Unskilled. THDCIL identifies the potential employees whose skills can be up-graded by providing Long term or Short term trainings. Efforts are being made to convert non-professionals into professionals unskilled to semi-skilled and semi-skilled to skilled.

For short term training programs, a form is designed in Performance Management Review (PMR) booklets, where executives after discussion with their reporting officers identifies the trainings required to remove the skill gaps and consequently HR Department organizes such trainings in due course of time. Apart from PMR booklets, time to time Training Need Analysis (TNA) is being done for the executives and competency mapping is also made part of TNA where trainings are planned to fill the gap between present competencies and desired competencies.

THDCIL organizes dedicated training programmes for its employees to enhance their Functional / Managerial Competencies and to develop skills in a specialized field.

2015-16 Highlights

Total 61 dedicated training programmes were conducted for augmentation of technical skills and behavioral competencies. The training programs are broadly classified as under:

- 1) Leadership Development programme
- 2) Management Development programme
- 3) Cross Functional Competencies
- 4) Domain Specific Programmes
- 5) Long Term Certificate Courses
- 6) External Training Programmes (inc. foreign training)

Average hours of training per year per employees by gender and by employee category				
Category	Male		Female	
	Total Mandays Training	Average per employee	Total Mandays Training	Average per employee
Officers	2113	2.67 (2113/790)	177	4.91 (177/36)
Supervisors	265	2.73 (265/97)	32	4.57 (32/7)
Workmen	1851	1.89(1851/977)	362	4.70 (362/77)

Programmes on Skill Management and Life Long learning:

Category	Programs for skills management and life long learning that support the continued employability of employees and assist them in managing career ending
	Total Mandays (2015-16)
Officers	175
Supervisors & Workmen	481

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Details of skill Development Programs conducted during the year 2015-16 are as under:

Executives						
S N	Name of program	Target Group	Duration	No. of employees attended	Mandays achieved	
1	Primavera Training	E-3 to E-8	09-09-2015 11-09-2015	30	149	
2	Onsite EOT crane O &M	E-2 to E-5	07-10-2015 08-10-2015	13	26	
Total					175	
Supervisors & Workmen						
1	Onsite EOT crane O &M	Technicians/ Supervisors	07-10-2015 to 08-10-2015	08	16	
2	Computer Awareness Program	W-3 to S-4	16-11-2015 to 20-11-2015	17	5	
3	Auto Cad(Technical Design)	W-3 to E-5	02.02.2016 to 06.02.2016	15	75	
4	Ms Office Awareness	Inhouse	18-01-2016 to 20-01-2016	16	42	
5	Hindi/ English Typing Course	W-2 to S-4	17-03-2016 to 18-03-2016	15	105	
6	O&M Training For Workmen(14 days prog-Holi holidays exc)	NPTI, Nangal	07-03-2016 to 31-03-2016	14	238	
Total					85	481

Besides, following 02 certificate courses were conducted for Executives through external Institutes of repute:

SI No	Name of programme	No. of participant	No. of Mandays	Agency/Institute
1	Certificate course in enterprise risk management	21	320	IIT , Roorkee
2	Certificate course in Sustainable Development ,CSR &Rand R	15	225	ASCI,HYDERABAD
Total Mandays			545	

Training on policies and procedures concerning aspects of Human Rights:

Level	Total Employees (2015-16)	Total Mandays of employee training on policies and procedures concerning aspects of human right relevant to operation	Percentage of employees trained

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Executives	74	115.5	8.9%(74/826 *100)
Supervisors & Workmen	501	652	43.3%(501/1158*100)

Details of training programmes related to Policies and Procedures concerning Health & Safety are as under :

Executives					
S N	Name of program	Target Group	Duration	No. of participants	Mandays
1	Safety Awareness & First Aid	Executive/Supervisor	29.09.2015 to 01.10.2015	69	103.5
2	Strategies for improving Occupational Safety & Health	Executives	15.12.15 to 16.12.2015	03	06
3	Occupational Health & Safety, Fire, Environment & Hazard Management	Executives	25.02.16 to 27.02.2016	02	06
Total				74	115.5
Workmen & Supervisors					
1	Safety Awareness	W-1 to W-11	23.06.2015 to 24.06.2015 (One & Half day)	25	38
2	Safety Awareness	W-1 to W-11	24.06.2015 to 25.06.2015 (One & Half day)	25	38
3	Women Health & Wellness	W-3 to S-4	06.11.2015	54	54
4	Health & Wellness	w-3 to s-4	07.11.2015	45	45
5	Women Empowerment	w-1 to s-4	17.12.2015	66	66
6	First Aid & CPR	W1 to w11	15.01.2016 to 16.01.2016	30	60
7	First Aid & CPR	w-2 to w-11	09.02.2016 to 10.02.2016	33	66
8	First Aid & CPR	W2-S4	25.02.2016 to 26.02.2016	34	68
9	Women Empowerment	W2-E5	08.03.2016	60	60
10	Women Health , Wellness and Industrial Visit	W2-S4	18.03.2016 to 20.03.2016	25	75
11	Industrial Safety/Industrial Visit for Safety committee	W3-S4	28.03.2016 to 30.03.2016	12	36

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	members				
12	Women Empowerment programme	W/S	28.09.2015.to 29.09.2015	23	46
Total				432	652

6.9 Training course conducted for Vigilance awareness:

During the year 2015-16 following training programmes were conducted for the executives.

- Training programme on “Contract Management” for senior executives through Power Management Institute (PMI), Noida, at Rishikesh
- Training Programme on “Vigilance for junior & middle level vigilance officers of PSU’s/ Banks” conducted by CBI Academy, Ghaziabad was attended by Vigilance Officials of THDCIL.
- Seminar on, “Vigilance and Ethics in the Public Procurement-Road map for Eliminating Corruption” organized by IRILMM, was attended by Vigilance Officials of THDCIL.
- During the Vigilance Awareness week, training programme on “Vigilance Awareness & Anti-corruption” was organized at Rishikesh.

During the year 2015-16, training was imparted to 84 No. of Executives.

6.10 Occupational Health and Safety

Health and safety efforts include a range of measures to develop a safety culture in the company. Health, Safety and Skill Development are very important aspects in any project as accident free work environment boosts the moral of the team members working in Hydro Projects. It plays an important role for improving productivity of Organization and wellness of employees and their families.

THDCIL is an OHSAS 18001:2007 (OH&S Management Systems) Certified company and is committed to ensure health and safety of its employees, contractors, sub contractors and community by strict adherence to the norms of Occupational Health and Safety.

Accident ▶	Work Related		Elect. Related.	
	Fatal	Non Fatal	Fatal	Non Fatal
Period ▼				
2011-12	NIL	02	NIL	NIL
2012-13	NIL	NIL	NIL	NIL
2013-14	NIL	NIL	NIL	NIL
2014-15	NIL	NIL	NIL	NIL
2015-16	NIL	NIL	NIL	NIL

THDCIL is committed to comply with applicable legal requirements, laws, regulations and best practices in Safety. The company does its utmost to provide a healthy, stimulating work environment for its employees.

THDCIL has a well defined Occupational Health and Safety Policy which was formulated in 2011. THDCIL has Safety Manual which assigns high importance to safety in all spheres of our business activities. This Manual is a compilation of Safety

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Codes & Standards, Regulations, Legal Aspects of Safety, Safety Precautions, First Aid, Safety at Construction sites, Plant and machinery, Electrical Safety, Drilling and Blasting, Explosive handling and Storage of Material.

Further, in order to extend awareness on safety, THDCIL has also published Do's & Don'ts for Safety in Construction Works, which is also available on our website. THDCIL Occupational Health and Safety Policy reminds us to support a culture that raises employee's health and safety awareness, adopt and implement Occupational Health and Safety Management Systems and strive for continual improvement, fulfill necessary requirements to provide healthy and safe working environment, enhance awareness and concern toward Occupational Health and Safety Management Systems amongst employees, train employees and relevant stakeholders on health and safety aspects and yearn to achieve excellence in Occupational Health and Safety.

Safety Highlights 2015-16

- At Operational Plants (Tehri HPP & Koteshwar HEP), Safety Committee meetings are held on Quarterly basis.
- At Construction Projects (Tehri PSP and VPHEP), Construction Safety Committee meetings are held on monthly basis.
- Risk hazards analysis has been done at each operational plant and construction site. Objectives and targets have been framed and monitoring has been started from 1st January 2014 .
- Risk hazard objectives and targets monitoring register has been opened at various departments and progress is being monitored.
- External and internal audits are being conducted for construction works as well as O&M works etc at site.

Training programmes on Occupation health and safety: Various trainings programmes were conducted on health, wellness and safety of THDCIL's employees and contract labour (details elaborated at Para 6.8, Page 29)

6.11 HEALTH CARE

Various programs for First Aid, Stress Management Yoga, Occupational Health & Safety, Risk Management etc. have been organized by Tehri Unit through premier Training Agencies/ Institutions during the year 2015-16 to create awareness amongst employees and their families.

The training were imparted by experts from Training Agencies consisting of Qualified Doctors, Safety Engineers, Army Officials (Retd), Yoga Teachers etc. During the programs health check up, practical exercises, mock drills and live demonstrations etc. were carried out. The participants were trained to prepare themselves for any emergency situation and for taking care of preventive diseases and maintaining good health etc

2015-16 HIGHLIGHTS

- Number of Doctors in Hospitals at Projects and Corp. Office – 13
- Total Number of Nurses in Hospitals at Projects and Corp. Office –16
- Total number of consultations provided to employees/contract workers during 2015-16- 58451
- Total number of consultations provided to local people other than employees during 2015-16 - 11728
- No. of Ambulance – 05
- No. of cases in which Ambulance provided to employees- 214
- No. of cases in which Ambulance provided to local people-43

6.12 Disaster Management Plan (Tehri HPP):

THDCIL, as the owner of the dam, is fully responsible for the maintenance of the Dam and other structures. Nevertheless, in case any fortuitous event occurs, Disaster Management Plan of Tehri HPP is in place which would help in saving lives and reducing damage to property of the citizens living along the river Bhagirathi / Gangas, right from downstream of dam up to Haridwar. In the unlikely event of flooding, a protocol for coordination with civil authorities is triggered.

Under the national policy, providing relief in the event of calamities / disaster is the primary responsibility of the States, in this particular case, the State of Uttarakhand /Uttar Pradesh. The Central Government, with its resources, physical and financial, does provide the needed help and assistance to buttress relief efforts.

The state governments have Relief Commissioners, who are in-charge of the relief measures in the wake of occurrence of natural calamities. The responsibility of THDCIL is to take most effective measures in ensuring health and integrity of the dam, project structures and the reservoir rim and in providing timely information to concerned State and Central Government Agencies about the flood forecast and the flood water being released from the spillways from its network. Also in the event of any untoward incident, THDCIL will take immediate measures to rectify the damage for preventing it to become a disaster while keeping the State and Central Government Authorities duly informed. The responsibility for issuing warnings to citizens and their shifting and providing relief measures rests mainly with the District Administration.

6.13 Emergency Action Plan (Vishnugad Pipalkoti HEP):

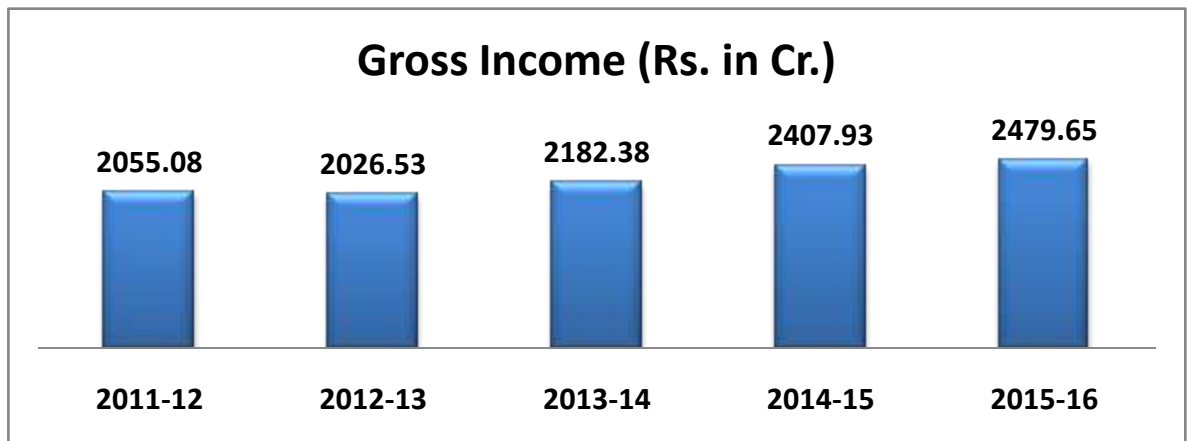
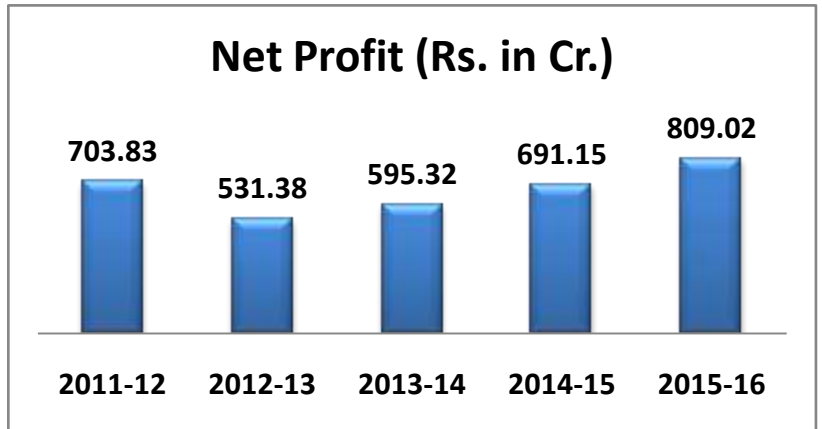
In line with the guidelines issued by CWC, EAP for VPHEP has been prepared to identify potential emergency conditions at VPHEP and specified preplanned actions to be followed to minimize property damage and loss of life. The EAP specifies actions to be taken to moderate the problems at the dam site as well as in the areas downstream of the dam. It contains procedures and information to assist THDCIL in issuing early warning and notification messages / request for assistance to responsible emergency management authorities, viz., District Magistrate / Collector, Armed forces, Paramilitary forces, Project Authorities and other Central/ State Agencies. It also contains inundation maps to show the emergency management authorities of the critical areas for necessary relief and rescue actions in case of an emergency.

7.0 Sustainable Development Performance: Economic

THDCIL has a strong financial base. The Company has an authorised share capital of Rs. 4000 Cr. THDCIL values financial interest of all its stake holders and always thrives to optimize value addition to its financial capital by earning profit along with discharging its social responsibility not just restricting itself to statutory minimum. The company ensures adherence to the debt equity norm of 70:30 from project inception. Paid up Equity capital of THDCIL as on 31.03.2016 is Rs.3558.88 Cr and long term borrowing is Rs. 3497.92 cr. Within the broad regulated parameters, THDCIL try to control cost without compromising on quality to add to our bottom line. With efficient management of financial capital, THDCIL has never incurred loss since its first project went into commercial operation in 2006-07. The company pays taxes on purchase of goods and services, creates direct and indirect employment and stimulates the local economy. THDCIL provides 12% free power to home state (Uttarakhand) for its operational power plants.

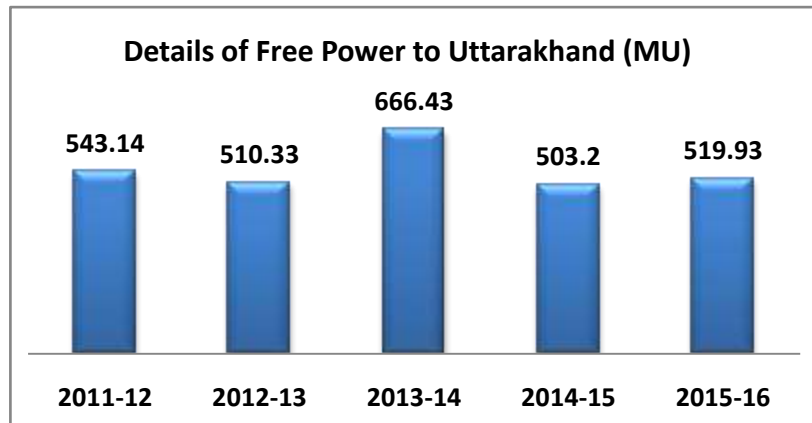
Highlights 2015-16:

- Gross Income generated during 2015-16 is Rs. 2479.65 Cr which is 3.0% higher than gross income of previous year (Rs. 2407.93 Cr.).
- THDCIL has earned a net profit of Rs. 809.02 Cr. during 2015-16 which is 17.05% higher than that of previous year (Rs. 691.15 Cr.).



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- During 2015-16, expenditure on CSR and R&D was Rs. 13.35 Cr and Rs. 1.62 Cr. respectively.
- During 2015-16, Gross Taxes paid by THDCIL were Rs. 242.53 Cr.
- Free energy to the tune of 371.02 MU from Tehri HPP(1000 MW) and 148.91 MU from Koteshwar HEP(400 MW) was provided to the Home State of Uttarakhand during 2015-16.



8.0 Sustainable Development Performance: Environment

THDCIL strives to control the environmental impact of its activities. Reduction of atmospheric emissions (especially greenhouse gases), measures for soil and water conservation, biodiversity protection, integration of facilities with their surroundings, reduction at source, reuse, recycling: the efforts extend to all aspects of reducing environmental impact. THDCIL believes that Company's business should be known not just for the financial results it generates, but for the imprint it leaves on the society as a whole and impact on the environment in particular.

THDCIL has a vision – to develop sustainable power with commitment to environment, ecology and social values. THDCIL counts on sound Environmental Management Systems (EMS). ISO 14001:2004 has been acquired for corporate office and projects namely Tehri HPP, Tehri PSP, Koteshwar HEP and Vishnugad Pipalkoti HEP. THDCIL strategy on environmental sustainability is to optimize use of energy and water, to reduce carbon footprint and to protect/reconstruct Biodiversity.

The key environmental concerns affecting components such as land, water, air, flora and fauna are addressed in partnership with different stakeholders, i.e. public agencies, local communities, academic and scientific institutions, the investment community, and international development partners, harnessing their respective resources and strengths for environmental management.

THDCIL makes all-out efforts to integrate environment protection measures at project planning stage itself. This approach is more cost-effective than establishing environmental controls after the commencement of project.

After site selection the company conducts Environment Impact Assessment (EIA) studies and assess the impacts of construction / operation activities and its vulnerability to cause any damage to the environment. Based on this, an Environment Management Plan (EMP) is prepared. EMP is aimed at mitigating the possible adverse impact of the project and maintaining the existing environmental quality. The EMP covers all aspects of planning, construction and operation of the project, which are relevant to environment. Based on the findings of EIA/EMP studies, environmental clearance for the project is obtained in accordance with EIA Notification 2006 issued by Ministry of Environment, Forest and Climate Change, Government of India.

All environmental concerns, such as, biodiversity conservation, pollution control measures, waste management, soil erosion control measures, muck management etc. are well addressed in these EMP and six monthly compliance reports of these management plan are regularly submitted to Ministry of Environment, Forest and Climate Change (MoEFCC) regional office for information.

Major Environmental Activities undertaken are as under:

a) Botanical garden at Koti (Tehri HPP & PSP Area):

A Botanical Garden has been developed in an area of 14.28 ha. near Koti. The species of plants which has submerged into the Dam reservoir have been conserved in the Botanical Garden. A total of 249 different species of plant including medicinal, ornamental, timber, fuel and fodder have been planted in the garden. All the species include approximately 12500 plants.



Botanical Garden at Koti, Tehri Garhwal

The Botanical garden is being cared by Deptt. of Forest, GoUK since 2011. During the financial year 2015-16, Rs. 8.00 Lakhs has been spent against maintenance and care of planted saplings, trees etc.

Maintenance and care of Botanical garden is a regular process being looked after by Forest Department, GoUK, while financial expenditure is being paid by THDCIL.

b) Green belt developed in Tehri Project area

As per recommendations made by Hannumantha Rao Committee (HRC) development of Green Belt along reservoir rim is being carried out by Deptt. of Forest (GoUK). 200 mtr. wide green belt (from 840 MSL to 1040 MSL) with estimated cost of Rs. 820 lacs in 2100 hact. of land which includes 1138 ha forest land and 962 ha agriculture land is being developed. Out of 2100 hact. an area of 1138 hact. of forest land has been completed while 962 hact. of agriculture land is yet to be treated. An amount of Rs. 476 lacs has been released to Forest Deptt., GoUK upto Mar' 2012.

c) Mahaseer Fish Hatchery:

As per conditions laid down by MoEF, THDCIL has conducted the study of flora and fauna in the region. Zoological Survey of India (ZSI) made extensive study of fauna of concerned rivers and submitted the report to MoEF along with recommendations in 1993.

In compliance of ZSI recommendations, Mahaseer fish hatchery having capacity of 3 lacs seeds per annum has been constructed near Jurasi nalla Koteshwar under consultancy of National Research Centre for Cold Water Fisheries (NRCCWF), Bhimtal. The expenditure of Rs. 110 lac has been incurred in development of fish hatchery. The fish hatchery is under operations, where in 60 number of Mahaseer brooders (male & female) are available weighing approximately 1.5 to 2.3 kg with capacity of 5000 to 12000 eggs per brooder. Artificial breeding operation of fish has been successfully made twice in the hatchery.



Mahaseer Fish Hatchery

Wherein 60000 fingerlings introduced into the back waters of Tehri Dam reservoir. Along this, species of common carp including 112 number of brooder and adults are also available in the hatchery tanks. Meanwhile, the hatchery has been transferred to deptt. of fisheries Govt. of Uttarakhand in Nov, 2015.

d) Plantation along the rim of Koteshwar reservoir

Plantation of dwarf plant species around the reservoir of Koteshwar Dam Project is being carried out through Tehri forest Division New Tehri. An MOU has been signed between DFO Forest Division, New Tehri and THDC India Limited, Koteshwar on 14/07/2014 for ₹ 1.60 Cr. (One Crore Sixty Lakh). The area taken for plantation mainly comprises of civil soyam land stripes of 200m to 500m width. The total peripheral land area available for said plantation is 450 ha. The main objective of this dwarf plant species plantation is to stabilize the area and to form the green belt around dam reservoir. It will check the direct siltation into the reservoir and increase the vegetation cover adjoining to the reservoir which will enhance the habitat of wild animals and increase the aesthetic and ecological value of the dam.

e) Slope stabilization in Koteshwar Project area:

During execution of civil works of Koteshwar HEP, approximately 90.0 Lacs CuM of earth work was excavated. This huge quantity of earth was disposed in planned manner at designated locations around project area. One of the location was about 2Km downstream of the dam at Right bank. Excavated earth was disposed and placed in the location from 2003 to 2007. In due course, it was almost stabilized and slope was maintained. In year 2014, it was observed that there is a settlement in the earth pile and movement was observed towards river bank. To check the movement, it was

decided to carry-out protection work all along the dumped muck area. As a immediate action, storm water channel was prepared all along the slope to divert the rain water so that slopes are maintained and intact. Subsequently, in year 2015-16, slope protection work all along the dumped are of 750.0 M length by providing 10M height having base of 6M gabions filled with boulders was started. Priority was to protect the vulnerable location. In the year, 580M area was taken up and protected up to the required height ranging from 3M to 10M. This has made an active impact to control the movement of earth mass towards the river side. The work is still going on in remaining area and to be completed by the end of 2016-17. Thereafter, slope dressing and plantation work shall be taken up in the entire vicinity for a strong and stable solution.

f) Slope stabilization work of road between Tehri HPP and Koteshwar HEP:

The slope protection work between Ch.0.0 to 10.0Km., Ch.10.0 to 17.0, of Tehri-Koteshwar Road and Chaaka-Pendars-Ali Halzent Road have been carried out during the year 2014-15 through engineering measures. The total amount of Rs 4,08,35,842.00 (Four Crore Eight Lakh Thirty Five Thousand Eight Hundred Forty Two) has been invested against this work. Award of slope stabilization work at Ch.1.755 to 1.797 Km, Ch 2.749 to 8.99 Km, Ch15.420 to 15.461 Km, Ch 15.551 to15.564 Km. and Ch 1.775 to 1.905 Km worth Rs.4,18,66,368.00 in Tehri-Koteshwar road for the financial year 2015-16 has been done and the work is under execution.

g) Plantation in Koteshwar Project:

The greenery development work at various site such as THDC guest house, Administrative Building, CISF fire station and new field hostel of KHEP area is in progress. For this work Rs.1,00,000.00(One Lakh) has been invested.

h) Nala/Slope treatment

THDCIL has also conducted treatment of Jurrasi and Palam Nala at Koteshwar by engineering measures during 2014-15. Treatment work at Kyari Nala at Koteshwar has been awarded cost (Cost-Rs.23.27 Lakh) during the year 2015-16 and the work has been completed during said period.

i) Herbal Garden at Vishnigad Pipalkoti HEP (444 MW)

In order to increase an aesthetic nature and catalyze growth of Bio-Diversity on the land and in surrounding area of VPHE Project, Bio-Diversity Management Plan under Environment Management Plan (EMP), VPHEP stipulates THDCIL to develop Herbal Garden at suitable place in consultation with Forest Department, GoUK. The objective of Development of the Herbal Garden is to propagate vulnerable & other species of Medicinal value & Aesthetic nature.

The Herbal Research Development Institute (HRDI), Mandal, Gopeshwar, District Chamoli has been assigned the consultancy for the development of Herbal Garden at VPHEP. Officials from HRDI have already visited the site and finalized the location for establishment of Herbal Garden. The location is within the VPHEP complex at Alaknandapuram at Siysain.

As suggested by HRDI, the civil works towards development of Terraces including soil preparation activities have already been completed during 2015-16. Meanwhile, the requisite species that comprise of Ornamental, Medicinal & Aesthetic value have been planted during current monsoon.

8.1 Environment Up-gradation and Protection initiatives taken under Corporate Social Responsibility

- Total 15,000 saplings of different varieties of fruits and herbs planted in the rim area of Tehri reservoir and other project affected area/ rehabilitation colonies through SEWA-THDC.
- Herbal plant nursery has been developed at THDCIL Campus, Rishikesh containing Aloe vera, Tulsi, Aonla etc. Plants are distributed to needy farmers free of cost from this Nursery.
- Environment day was celebrated in Rishikesh to create awareness among children through plantation.



8.2 State Level Painting Competition under National Energy Conservation Campaign

THDC India Limited annually organizes State Level Painting Competition in the Uttarakhand State as Nodal Agency under the Energy Conservation Campaign of Bureau of Energy Efficiency, Ministry of Power, Govt. of India. Around 01 lakh students of various schools participate in the preliminary round at their schools. 100 best painters are selected throughout the state, 50 nos. in Category –A for students of Class 4, 5 & 6 and 50 nos category-B for the students of class 7, 8 & 9. All these successful kids gets the opportunity to participate in National Level Painting Competition on Energy Conservation at Delhi. Many times kids from Uttakarkahnd got prizes at National Level and received prizes from Hon'ble President, Prime Minister, Union Minister for Power.

8.3 Energy Efficiency and Energy Conservation

THDCIL endeavors to use energy efficient technology in its conscious approach and responsibility to minimize environmental foot prints. THDCIL is adopting use of environment friendly and star rated equipments in the offices, guest houses, street lights, residence etc. The old equipments consuming more electricity are being replaced by star rated equipments in a phased manner.

The company is involved in Hydro Electric generation which itself is a clean and renewable energy. However, the company has taken initiatives to enter into other renewable sources of energy viz. Small Hydro Power, Wind Power and Solar Power. Small Hydro Project of 24 MW is scheduled to be commissioned in Feb'2018 in Dhukwan, UP. Wind Power project of 50MW capacity has been commissioned at Patan in Gujarat in June-2016. Another Wind Power Project (63 MW) is under construction at Dwarika, Gujarat. The process for installation of 50MW Solar Power project in Kerala in collaboration with SECI Ltd. has been started. The process for installation of 300KW roof top Solar Power project in THDCIL premises has been started through Central Electronics Corporation, Faridabad, a nodal agency of MOP for such projects. THDC is also planning to establish a 6.5MW Solar Power project over Head Race and Tail Race Channels of its Dhukwan Small Hydro Project in UP.

THDCIL believes in efficient use of electricity as a way to reduce demand. THDCIL is focusing on energy efficiency programs with in the company.

Energy audit of residential and office complexes are conducted on regular intervals. Recommendations of energy auditor are implemented in time bound matter. Following measures have been adopted for energy conservation and management:

- Energy Audit of KHEP was conducted through Central Power Research Institute (CPRI). THDCIL is in process of implementing recommendation made by CPRI.
- Solar water heaters have been installed in all hostels and guest houses in Rishikesh.
- Old ceiling fans have been replaced with Five star rated ceiling fans.
- New buildings were equipped with energy efficient equipments / Luminary with day light provision to use day light properly
- LED light fittings have been installed in office and guest houses buildings
- Residential electricity consumers of colony premises were inspired towards benefits of use of energy efficient appliances / luminaries in their residence.
- Old Air Conditioners have been replaced with new Star Rated ACs
- Conventional street lights has been replaced with energy efficient LED lights. Transition to LED present a huge potential for cost and consumption savings
- THDCIL is planning to install rooftop solar energy generation plant at corporate office.
- THDCIL is planning to install motion sensor based lighting system across facilities.

8.4 E-Waste and Muck Mangement

- **E-waste:** Towards responsible handling of e-waste, THDCIL has empanelled third party e-waste handlers authorized by Central Pollution Control Board (CPCB) for disposal of e-waste.
- **Muck Management:** Dumping of muck is being done at designated / identified area & well above the high flood level. Engineering measures and Biological measures are adopted at sites for muck handling in environment friendly manner.

8.5 Sewage Treatment & Disposal

Construction of 1 MLD Sewage Treatment Plant for township located at Rishikesh Township has been taken up in FY 2015-16. The mechanism for use of treated effluent water from STP will be worked out for green parks, two fountains, work shop and flower beds etc to conserve water.

8.6 Biogas Plant

THDCIL has taken an initiative to harness the canteen and horticultural waste for productive use at Rishikesh Township. In this regard, THDCIL carried out an assessment study of all the available technologies. THDCIL adopted the TEAM (TERI's Enhanced Acidification and Methanation) process after the preliminary assessment. THDC awarded project to TERI for the setting up of a waste treatment plant based on the TERI's patented technology-TEAM process for the treatment of kitchen and horticultural waste. The biogas generated from the plant of the capacity of 500 kg/day is utilized for thermal application in the kitchen while the manure is used for in-house horticultural activities.

8.7 Water Conservation Measures taken at Corporate Office, Rishikesh:

- A seminar to sensitise about judicious use of water & cleanliness was organized by DGM (Services) on 19.02.2016 and residents of colony and employees participated in this programme.
- Two nos. inflow water meter installed in both the tube well in colony area to know quantity of water lifted into tanks every day.
- Recording of inflow water meter being maintained on fortnightly basis and for quality of drinking water testing is done on six month basis and proper record is kept in township department.
- One no. water table indicator installed for use of both water tube well in consultation with D&E department for recording of monthly reading started from May- 2016.

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- Separate energy meter for both tube well are fixed for dedicated record of energy consumption for these work areas.
- In central park water taps which were prone to misuse by children have been changed with gate valve system. Awareness is being generated for use of water in the garden by individuals.
- For judicious use & saving of water in colony area timing for supplying of water reviewed and reduced by 2 hrs to save water.
- Monthly check up of roof water tank and float valve of all buildings tanks and connected pipe line is being done to check any leakage to conserve water.
- Normal taps in public area of colony are replaced by push cocks to avoid water wastage.

8.8 Total energy consumed by the business entity for its operations

Location	Tehri HPP	Tehri PSP	Koteshwar HEP	VPHEP	Rishikesh	Total
Energy Consumed(KWh)	15919975	6208188	5812760	912000	2958611	31811534
Amount (₹ in Cr.)	7.04	4.23	4.85	0.68	1.38	18.18

During 2015-16, the Auxiliary Energy Consumption of Tehri HPP was 15.21 MU and Koteshwar HEP was 9.11 MU which correspond to 0.491% and 0.731% against Normative 1.2% and 1.0% respectively.

8.9 Strategies, Current action and Future Plans for maintaining Environment

a) Strategies

- To develop habitats for wild life, fodder for cattle and fuel for local inhabitants by developing forest eco system in the project area.
- To address Impacts & Conserve Environment in accordance to various applicable Acts, Rules & Guidelines etc.

b) Current action

- Habitats for wild life and birds are being developed by dense afforestation activities, herbal gardens etc within and outside project locations.
- Implementation of following segments for Management measures are under progress at Vishnugad Pipalkoti HEP:
Bio-Diversity Management, CAT Plan, Compensatory Afforestation, Fish Management, Green Belt Development, Solid Waste Management, Public Health Delivery System, Environmental Monitoring, Archaeological

Management etc.

- Apart from above, the Measures viz; Management of Labor Camps, Muck Management, Labor Health & Hygiene etc are also under process of implementation by Civil Works Contractor at Vishnugad Pipalkoti HEP.

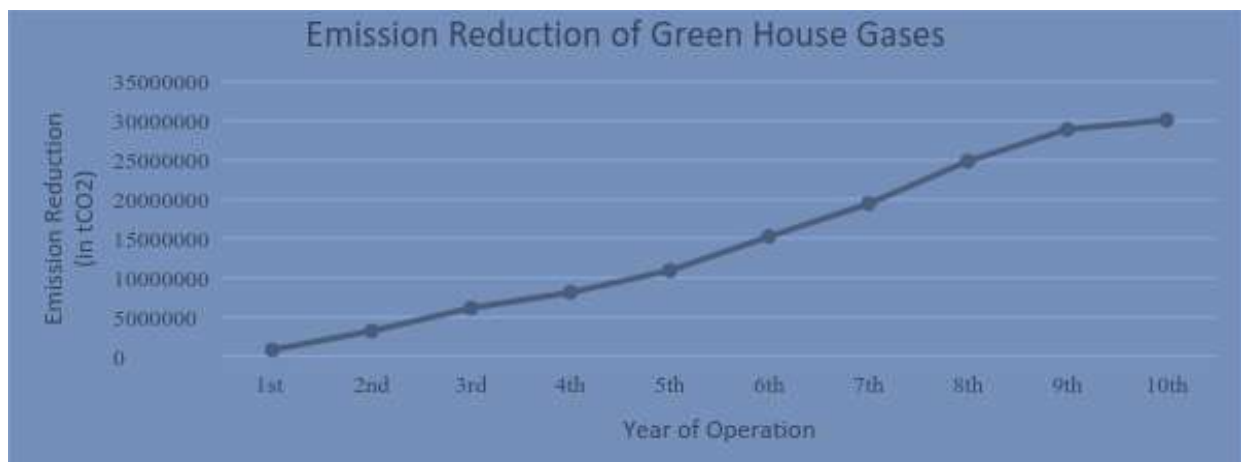
c) Future Plan

- To make awareness activities/ programs for protection of wild life and forest ecosystem among local villagers / inhabitants.
- To make densification of forest in residential and reservoir area of Tehri HPP and Kotehswar HEP.

8.10 Reduction in Green House Gas Emission

Generation of electricity from hydro and renewable sources not only saved the natural resources but also helps THDCIL in becoming an active member in combat against climate change. By virtue of operation, THDCIL has saved generation of approximately 3.00 Cr tCO₂ of Green House Gases (GHGs) that could be generated by burning coal to produce 34954 MU of electricity from 2006-07 to 2015-16*.

Study on emission of green house gases has been carried out by National Institute of Oceanography, Dona, Paula, Goa. The report *concluded* that the water column remained well stratified during most times of the year, it was observed to be oxic at all times. The absence of anaerobic conditions in the reservoir was not conducive for methane production and any methane produced in the sediments would be oxidised in the oxic water column. The surface waters of the reservoir were under saturated with methane as evident from our direct flux measurement and thus there is no emission of methane from the reservoir.



*ACM0002: Grid-connected electricity generation from renewable sources, issued by United Nations Framework Convention on Climate Change (UNFCCC).

9.0 Sustainable Development Performance: Social

THDCIL is committed for sustainable development based on the simple principle that “no organization can survive until and unless it keeps its stakeholders happy”. This commitment towards upliftment of society is evident from Resettlement & Rehabilitation of Project Affected Persons (PAPs) executed by THDCIL and execution of various schemes under Corporate Social Responsibility.

In 2008, THDCIL had framed a Policy on Corporate Social Responsibility (CSR) known as 'Scheme for Corporate Social Responsibility – Community Development (CSR-CD)', which was adopted from financial year 2008-09.

Consequent to the issue of guidelines by DPE in April, 2010, 'THDC CSR-CD Scheme 2010' was introduced. Subsequently, a separate policy on Sustainable Development was framed in 2012, which was based on DPE guidelines issued in September, 2011.

Because of the close linkage between the concepts of Corporate Social Responsibility and Sustainable Development, DPE issued combined guidelines on Corporate Social Responsibility and Sustainability for CPSEs effective from 1st April 2013. In accordance with the said guidelines, THDCIL CSR & Sustainability policy-2013 was issued with the approval of the Board.

New rules and guidelines are being followed since April-2014. As required under Companies Act and CSR Rules, the company is formulating CSR and Sustainability Policy-2015 incorporating the new rules/ guidelines. **CSR and Sustainability Programmes of the Company are steered through Below Board Level (BBL) & Board Level (BL) CSR Committees.**

As per the Companies Act 2013 an average of 2% PBT of the previous three years shall be taken as CSR Budget for implementation of CSR activities of the company. Accordingly, CSR Budget for the year 2015-16 comes out to Rs. 13.34Cr. Implementation of all CSR works of company have been entrusted to company sponsored NGO i.e. SEWA-THDC. CSR budget has been utilized mostly in the vicinity of THDCIL's various project locations /business area as per the Companies Act 2013 and DPE guidelines on CSR & Sustainability 2014 effective from 1st April 2014. The major thrust areas during current financial year were health & sanitation, promoting education, vocational skills & livelihood projects, women empowerment, environmental sustainability & ecological balance, rural development of backward district Tehri. Overall it has been ensured to have inclusive growth and upliftment of the marginalized and under-privileged sections of the society.

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Details on CSR Activities (F.Y. 2015-16)

Sl. No.	CSR Project or activity	Sectors	Local Area & District	Approved Budget (Rs in Lacs)	Amount spent (Rs in Lacs)	Amount spent: Direct or through implementing agency.
1	Health & Sanitation etc.	Health	Uttarakhand & Uttar Pradesh	1334.00	556.94	SEWA-THDC
2	Education & Employment Enhancing Vocational Skill etc.	Education	Project affected area		564.34	SEWA-THDC
3	Women Empowerment	Women Empowerment			17.95	SEWA-THDC
4	Environment Sustainability etc.	Environment			3.68	SEWA-THDC
5	Promotion of National Heritage Art Culture	Welfare			3.50	SEWA-THDC
6	Prime Minister's National Relief Fund /Calamity/Disaster	Disaster Management			-	SEWA-THDC
7	Rural Development program	Social			165.39	SEWA-THDC
8	Office Expenses of executing agency (SEWA-THDC)/ Base line survey/ Expert visits etc.				23.20	SEWA-THDC
Total				1334.00	1335.00	

9.1 Education Development (THDC Jagriti)

a) THDC School at Rishikesh & Tehri

As a responsible corporate citizen THDCIL strives to contribute and promote education among needy external stakeholders. THDCIL is running two schools under THDC Education Society (TES) (Society registered under Societies Registration Act 1860), one at Bhagirathipuram, Tehri offering education from 6th to 12th standards and another school at Pragatipuram, Rishikesh offering education from 1st to 10th standards. In both schools children of nearby areas belonging to economically weaker sections including backward and SC/ST are being provided quality education. The schools are being run in permanent buildings (Concrete Structure) with well ventilated spacious class rooms and labs for physics, chemistry, biology and computer education.

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To enhance the knowledge and personality development of students various in house competitions, co-curricular activities viz. Yoga, poem recitation, Quiz, Essay Writing, Games, Cultural Programme, Drawing etc. are organized regularly. Many initiatives have been taken to improve the quality of Education by a team of trained staff & experienced faculties with Army school & Central School background. Extracurricular activities are organized from time to time like Summer Camps, Excursion Tours etc. The students are trained for cultural programmes and National Festivals. The initiative taken by TES has yielded fruitful results. There is sharp increase in the enrolment of students in both the schools. Teachers are being provided training from time to time to improve their skills. Total expenditure incurred to run both schools for the year 2015-16 was about Rs. 3.68 Cr. Free dress, books and stationary, free bus service are being provided to students with fee concession to SC/ST/BPL students. 100% scholarship for SC/ST students have been provided. THDC India Limited (THDCIL) started “Naivaidyam” Initiative in collaboration with Madhuban Aashram, Rishikesh in the Schools managed by THDC Education Society in Rishikesh and Tehri on 08.04.2016 at Rishikesh. Under this scheme nutritious meal will be offered to the students.

The details of students for year 2015-16 is as under:-

	BPL Category Students		SC/ST/OBC Category Students						Physically Challenged Category Students		Total Students	
	M	F		SC	ST	OBC	Gen	Total	M	F	M	F
Rishikesh	11	10	Girls	38	01	84	103	226	Nil	Nil	220	236
			Boys	45	01	73	90	209				
			Total									
Bhagirathi Puram, Tehri	04	07	Girls	48	02	Nil	42	92	Nil	Nil	114	99
			Boys	50	Nil	Nil	60	110				
			Total									

b) THDC Institute of Hydropower Engineering and Technology

An Engineering Institute named as “THDC Institute of Hydropower Engineering and Technology (THDCIHET)” in Bhagirathipuram (near Tehri Dam and HPP), Tehri has been established by THDCIL under CSR initiatives to meet out the future requirements of skilled manpower/ technical graduates in sustainable mannner. The institute



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has state of art infrastructural facilities viz. Administrative Block, Academic Blocks, Laboratories, Workshops, Library, Canteen and Hostel for boys and girls etc. Presently, Institute is providing Under Graduation Courses (B.Tech.) in five disciplines i.e. Civil, Mechanical, Electrical, Electronics & Communication and Computer Science. The Institute is a constituent college of Uttarakhand Technical University (UTU), Dehradun. THDCIHET is operational since academic year 2011-12. Girls Hostel was completed in 2015-16 by joint CSR contribution from Rural Electrification Corporation Limited (RECL) & THDCIL and inaugurated jointly by CMD, THDCIL & CMD, RECL in the month of Feb 2016. Students of far flung areas of Uttarakhand mainly from tribal belt of the State are being benefitted and getting higher technical education. Moreover, Tehri Dam project affected families are also being benefitted by opening of the institute close to their homes. 5% seats are reserved for the students from the Project Affected Families. Presence of THDCIHET has increased the income level of the local community. It has generated direct / indirect employment. Local communities / vendors engaged in various livelihood activities viz milk supply, news paper/magazines, Book shops, fruits and vegetables shops, medical shops, canteen, laundry etc. are largely benefitted. Local agencies are operating hostel canteens, transport facilities etc. Grocery and other local needs of the students and staff are also being managed by local shopkeepers and residents of the area. Local people / labours of this area are happy with the presence of THDCIHET.

Year	Total Strength		Students From FAFs		Students Category						Students (THDC Employees' Wards)	
	M	F	M	F		SC	ST	OBC	Gen	Total	M	F
2013-14	231	81	10	01	Girls	13	5	11	52	81	6	3
	Total- 312				Boys	33	6	31	161	231		
					Total					312		
2014-15	204	67	12	02	Girls	12	02	07	46	67	03	03
	Total- 271				Boys	37	08	27	132	204		
					Total					271		
2015-16	151	67	5	1	Girls	11	02	07	47	67	06	02
	Total- 218				Boys	23	06	18	104	151		
					Total					218		

c) Jr. High School Koteshwarpuram

One English Medium Jr. High School is being run at Koteshwar, Tehri by SEWA-THDC through a society Omkaranand Saraswati Public School, Education Society to provide quality education to children of project affected families of KHEP. Total 140 no students are getting education from this school. Teaching staff having good qualification are appointed to provide better education and curricular activities to the children. The total expenditure for the school for the year 2015-16 was Rs. 21.42 Lac.

d) Computer Training Programmes

Under education development programme, SEWA-THDC established 18 nos. Computer Centres for Skill Development of unemployed youth and students at project affected and rehabilitation area in Tehri, Dehradun and Haridwar district. Six month computer training programme was organized in all centres and More than 1300 youth and students benefited from this programme. The rural community who were not aware of the functions of the computer and hesitate to work on it,



have now got skill and basic knowledge of computer i.e. MS word, MS excel, MS power point and internet etc. Now they are working on computer with confidence.

e) Distribution of Books, Furniture and other item in various govt. schools.



- ✓ For promotion of better education, THDCIL has provided 350 furniture sets (3 seats per set) in 12 Govt. schools of Bhilangana Block. Total beneficiary students are 1050 every year.
- ✓ Provided 28 furniture sets, 04 sets dining tables, 84 Blankets, 02 computer & 01 inverter to Kasturba Gandhi Vidyalaya, Vill-Rausal (Bhilangana), Tehri
- ✓ Provided study material, school uniforms etc. to 79 students of SC/ST families of village Chopra, District Tehri.

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- ✓ 300 no. furniture sets (3 seats per set) were provided with the collaboration of Rotary Foundation in project affected area schools & office.
- ✓ 40 no. water filters have been provided in 22 Govt. schools of Chamba Block, Tehri District.
- ✓ Provided sweater to 149 under privileged students of Govt. Inter college Thati, Budha Kedar (Bhilangana), Tehri and school dress were also provided to 50 children of disaster affected (Flood affected) area students of Swami Dayanand Saraswati Sukhanand Career Public school, Rishikesh.

9.2 Health and Veterinary Care (THDC Niramaya)

- Four homeopathic dispensaries are running at Muni-Ki-Reti (Narendra Nagar), Pokhari (Pratapnagar), Dhauntary (Uttarkashi) & Koteshwar puram (Koteshwar) since last four years through Swami Narayan Mission Society, Shisham Jhari, Muni Ki Reti, Rishikesh. Running Cost of per homeopathy dispensary is approx. Rs. 5.00 Lac per year and approx.1200 patient per month are getting benefitted from each dispensary. Approx 20 villages of rim area are benefitted through this project. Qualified doctors having BHMS degree are posted in all dispensaries. Local people, MLA/ MP and gram pradhans appreciated the work of dispensaries.
- Three Multispecialty Medical Health Camps were organized through Nirmal Eye Institute, Rishikesh and one medical camp organized through THDC hospital Tehri in the project affected areas and rehab colonies. Total 762 patients attended the camps for taking medical treatment. Out of these 200 critical patients have undergone cataract surgery. Free treatment & medicines were provided to patients.



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DATE OF CAMP	LOCATION	Physician OPD	Eye OPD	Gyan. OPD	Dental OPD	Total OPD	EYE SURGERY PERFORMED AT BASE HOSPITAL
09.12.2015	KANDISOUD (CHHAM)	21	153	8	2	184	66
08.02.2016	LAMBGAON	136	160	35	28	359	74
24.02.2016	CHAMIYALA	67	105	25	22	219	60
Total						762	200

- A 06 bedded allopathic dispensary with pathological test, X-ray, ECG and Minor Operation Theatre facilities with free of cost distribution of medicines and ambulance facilities has been established at Deen gaon, Pratapnagar, Tehri. A team of MBBS doctor, Pharmacist, Nurse and Medical assistant has been posted at dispensary for regular health care service to rural masses since June'14. Residents of around 20 villages approx are being primarily benefitted from this dispensary. On an average 40 patients per day are availing health consultations and free medicines.



9.3 Swachh Bharat Abhiyan

- Ministry of Power, Govt. of India allocated construction/ repair work of 1093 no. toilets in various schools of Uttarakhand and UP state under “Swachh Vidyalaya Abhiyan” as per Govt. target. THDCIL has achieved the target in time. Under this program THDCIL have completed total 1188 no. toilets (539 new & 649 Dysfunctional toilets) and handed over to school authority.



- Massive public awareness campaign was done at various locations viz. THDCIL Premises, Schools, Hospitals, Streets, roads, Markets, Railway Station, Bus Stations, Holy River Ganga Banks, Parks and other Public places. As per need,

cleaning was done in local areas and dustbins were provided at different locations with consultation of Nagar Palika, Rishikesh & New Tehri. As a result, now all the dump of local areas is being collected first in dustbin then sent to the allocated dumping sites.

- In the FY 2015-16, THDCIL has constructed total 25 no. individual toilets in the remote location of block Pratapnagar, Tehri. Toilets were constructed for the SC families of the village panchayat Deengaoon after a open meeting organized in the village. Beneficiary families found that the construction of toilets is right approach for better, healthy and safe life for their family members.



9.4 Rural Development (THDC Utthan)

a) Holistic Development Programme through Hemwati Nandan Bahuguna Garhwal University (HNBGU)

THDCIL and HNBGU are working in 30 villages of project affected area on sustainable livelihood, empowering of women and rural based holistic development of rim area villages. Continuous activities of the project are being looked after by staff deputed by HNBGU. Major activities initiated under the project are as under:

- Operation of project centre at site (Bhauniyara village of Jakhnidhar Block) for taking up CSR activities
- Establishment of Computer Centre (02 nos.) & Tailoring cum Stitching Centre (02 nos.)
- Organised 02 health camps (597 persons benefitted)
- Provided vocational training in Hotel management (10 Youth benefitted)
- Promotion of off seasonal vegetable by distribution of Hybrid seeds to approx. 1000 farmers
- Horticulture- Distribution of fruit plants in 10 villages
- Awareness programme- 02 no. Kisan Gosthis and 02 no. Block level meetings for convergence with Govt. schemes (i.e.; RKVY, MNREGA etc)
- Exposure visit to 30 local farmers in H.N.B. Garhwal University, Srinagar for promotion of latest Agriculture based techniques.

b) Programme on Ecological Restoration and Socio-economic Empowerment of Rural Communities for Sustainable Livelihood and Resource Management at Deengaoon through Kirori Mal College, Delhi

THDCIL in association with Kirori Mal College, Delhi University is running a programme on “Ecological and Socio-economic Empowerment of Rural Communities for Sustainable Livelihood and Management” at Upali Ramoli in Pratapnagar Block of Tehri Garhwal District in Uttarakhand since 2011. This is a long term programme for

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Rural Based Holistic Development of 10 remote villages of block Pratapnagar Distt. Tehri. Activities of 4th phase of the project have been completed in F.Y. 2015-16. Major activities initiated at Deengaon Centre include:

- Operation of centre at site (Deengaon village of Pratapnagar Block) for taking up CSR activities
- Awareness Programme for Adolescent girls & distribution of Sanitary Napkins
- Cleanliness Programme in 04 villages
- 03 no. Yoga Camps
- Coaching Programme for Competitive Exams
- Distribution of 5000 fruit plants in 08 villages
- Plantation of fodder (Napier Grass) in 04 villages
- Poly Houses for increased productivity (02 no.)
- Distribution of hybrid seeds for promotion of off season vegetable
- Awareness programme through Kisan Gosthis
- Construction of Vermin Compost pits (05 no. for demonstration).
- Promotion and Strengthening of Farmer Self Help Groups (FSHGs) for Pickle & Juice making & Bee Keeping.
- Drinking water management (Management of springs & distribution of water filters)
- Promotion of clean energy through distribution of smokeless Chulhas.

c) Livelihood development program through integrated farming systems approach in Dam Affected Area of Tehri Distt.

THDCIL awarded a project of Livelihood development program through integrated farming systems approach in dam affected area of Tehri Distt to College of Forestry, Ranichuri, VCSG Uttarakhand University of Horticulture & Forestry, Bharsar, Ranichuri. This is a long term project of 03 years based on agriculture activities. The project activities shall be implemented in 20 villages of Tehri District in two clusters one is being established in Koteshwar project area and other is being established in Bhilangana block of Tehri District. Total budget of the project for 3 years is approx. Rs. 68.00 Lac . The major activities of the project are:

- Formation of 20 SHGs and helping them with seed money of Rs. 20000/- to each SHG.
- Community Plantation
- Development of 03 Napier grass nursery
- Distribution of fruit plants
- Quality vegetable seed distribution to farmers
- Providing the organic manure in form of fortified compost & vermin compost
- Providing improved seed replacement in millet based farming to farmers
- Developing 4 sites for specific vegetable nurseries

- Protected farming aids (four poly houses for off season vegetable production) for demonstration purpose and Govt. scheme will be introduced
- Exposure visits for improving Agriculture & Horticulture activities and conducting Kisan Gosthis through experts
- Technical demonstration for improved Agriculture practices
- Facilitation for linkages with the Govt. schemes
- Providing bio pesticides for pest and disease management
- Interactive forums for crop insurance banking and line department services (Market linkage with Govt. schemes)

d) Agriculture Development & Livelihood Project under Rural Development at Tehri Baandh Visthapit Area, Pathri, Haridwar

The Project Affected Families residing in Pathri Rehab Colony have got the small/marginal holdings, the potential for Custom Hiring Centre (CHC) which will cater to the farm machinery requirement of such a vast area, was quite huge. Subsidy schemes are also being formulated by Govt of India to encourage entrepreneurs and Agricultural Graduates to set up Custom Hiring Centres. Therefore, keeping in view the emphasis of agricultural farm machinery and the need for bringing the farm machinery within the reach of small/marginal farmers a joint effort was made in association with the Krishi Vibhaag, GOUK, Haridwar, SEWA-THDC, Rishikesh and the farmers self help group 'Adarsh Kisan Club, Bhaag 3 & 4, Pathri' (registered with NABARD) to share the amount in the ratio 40:40:20 respectively. Under CHC total beneficiaries are 20 farmers involved in 02 self-help groups and over 50 other project affected farmers of this area whereas; in dairy farm ten (10) female members of SHG are involved. All the beneficiaries are from displaced village Chham in Pathri Bhaag 3 & 4, Haridwar. The farmers benefitted are having land within the range of 1 to 3 Km.



9.5 Empowerment Initiatives (THDC Samarth)

- Six months training programmes on tailoring have been organized at Tehri & Rishikesh. Total 06 no. training centres opened for six months training program at various locations during the year. Through these programmes over 250 families of poor and weaker section of



the society including minorities benefitted.

- Six months beautician training programme has been organized at Rishikesh total 51 families of poor and weaker section have got benefitted.
- Six months paper carry bag & makaram training program have been organized at Rishikesh.

9.6 Livelihood Generation and Skill Development Initiatives (THDC Daksh)

- THDCIL & IL&FS Skills partnered together to deliver placement linked Skill Development programs for the youth of the Project Affected Areas and IL&IF submitted a proposal for demand-driven short terms skills training and placement programs, to alleviate poverty in rural areas of project affected area. Under this project, different industrial based training programs i.e. Hotel Management, BPO, Hospitality etc were provided to over 100 educated youth of project affected area. At present apprx.75 % youth have been placed on job in different hotels and companies.



10.0 A Case Study: Climate Change & Weather Pattern Impact on Hydropower and THDC India Limited

In the present developing state of country's economy, there is a great requirement of electrical power for both industrial and agricultural growth. Exploitation of hydropower potential is highly considered by government and international bodies to be a key feature in economic development especially in Indian scenario. Hydropower is the cleanest source of energy which fulfils the countries demand during peak & off peak hours. Hydropower is an attractive energy source as it is renewable with minimal operational emissions of greenhouse gases. In addition, there are no fuel charges and the civil works have a long useful life.

Introduction

Climate change or global warming is the expected outcome of increased atmospheric concentrations of "greenhouse" gases resulting from human activities. Many greenhouse gases, including carbon dioxide (CO₂), occur naturally and keep the earth warm by trapping heat in the atmosphere. However, since the Industrial Revolution, anthropogenic sources of CO₂ have added greatly to the atmospheric concentrations, and in particular, transportation and the burning of fossil fuels for electricity generation are frequently cited as major sources.

In recent past anthropogenic emissions of greenhouse gases had led to significant changes in climate & weather pattern. In order to minimize the adverse impacts of climate change on water resources and attaining its sustainable development and management, there is a need for developing rational adaptation strategies. In India the distribution of rainfall is highly non-uniform both in terms of time and space. As a result water is required to be stored and utilized for meeting the demands of different sectors throughout the year. Efficient water management requires sustainable development of the available surface and ground water resources and their optimal utilizations.

The main technique for avoiding the worst extremes of climate change is to limit the increase in greenhouse gas concentrations by reducing carbon emissions. As non-renewable sources of electricity production is somehow responsible for a significant portion of the emissions, much of the burden will fall on the renewable sources of energy sector when it comes to limit the emissions. Possible measures include switching to lower carbon fuels like natural gas, together with increased use of renewable energy sources including hydropower, solar, wind etc. Here attempts have been made to predict and quantify the possible impacts of climatic changes.

POTENTIAL IMPACTS

In reflection of climate change there will be substantial effect on functioning of hydro power plants.

- **Catchment runoff-** One of the many potential effects of climate change is that the river catchment runoff may be altered. This could have implications on the design, operation and viability of hydroelectric power plants in operation or under construction/DPR stage.

- **Quantity & Timing-**Changes in the quantity and timing of river runoff, together with increased reservoir evaporation will have a number of effects on the production of hydroelectric power.
- **Snowmelt Contribution-** The snow that accumulates in the Himalayas is one of the principal sources of water in the Indo-Gangetic plains of north India. One of the general characteristics of the snow fed basins is the accumulation of snow in winter and its depletion during the spring and summer months. The magnitude of the snow storage and its melting rate are controlled by the climatic conditions over the basin. For hydro projects snowmelts are reliable estimates of the volume of water contained in the snowpack. As glaciers continue to retreat in response to climate change, runoff to rivers will initially increase in the short-term due to the large volumes of stored ice melting away. Eventually these stores of ice may disappear entirely, however, resulting in long-term decreases in annual runoff and stream discharge.
- **Operation of hydropower-** Changes in the availability of existing hydroelectric plant, together with system constraints will affect the ability of the electricity supply system to meet average and peak demands. In the longer term, as demand levels increase, system planning may have to address any predicted shortfall in hydro output by constructing additional generating plant such as pumped storage schemes.
- **Financial Effects-**Hydroelectric stations are characterised by low operational costs but high capital costs. Generally, revenue from electricity sales is the only way of servicing the capital debt. Thus reductions in electricity sales will affect the return on investment and hence the viability of the plant. The loss of hydroelectric generating capacity will require additional plant to be constructed to meet demand, requiring additional capital and thus reducing overall system returns.

APPROACH TOWARDS CLIMATE IMPACT ASSESSMENT

To assess climate impacts on hydropower production a number of key steps may be taken.

- (i) Study on snowmelt contribution which is continuously depleting caused by global warming and climate changes.
- (ii) A river basin may be selected and its rainfall-runoff processes could be modelled and calibrated. A relationship between climate inputs (i.e. rainfall) and hydrological outputs (i.e. runoff) could be established.
- (iii) River runoff values may be converted into estimates of hydroelectric power production.

STUDY-(SNOWMELT CONTRIBUTION)

A study was carried out with the objective of computing the snowmelt contribution in the river Bhagirathi at Tehri dam. The quantification of snow melt runoff is essential to secure long term water availability for this dam and effective reservoir operation. For computation of snowmelt runoff SNOWMOD model based on Degree-day approach was used.

The elevation of the study area varies from 617 m to 6917 m. The basin is situated in the Western Himalayas and has an extensive snow cover during winter. Remote sensing techniques have been used to estimate the aerial extent of the snow cover.

The whole catchment area was divided into ten elevation bands of 650m each. The aerial extent of the snow cover has been evaluated for each elevation zone. The snow cover depletion curves were derived and the daily snow cover area was calculated. The daily runoff for the snow covered area and the snow free area was computed separately by conceptualizing the catchment as two sets of linear reservoirs. However, model was calibrated using the observed stream flow for the period from 1998-99 to 2000-01, model computes all the three components of runoff i.e. snowmelt runoff, rainfall Induced runoff and base flow separately. Model performance is adjudged based on statistical measures of Nash-Sutcliffe Efficiency (NSE) and percentage of volume difference for which validation period (2001/02 to 2003/04) has been considered.

Table-1.1				
Percentage of different component of runoff				
Period	Year	Rainfall runoff (%)	Snow / Glacier melt runoff (%)	Base flow (%)
Calibration	1998-99	44.3	35.3	20.4
	1999-00	45.7	39.6	14.7
	2000-01	39.2	44.0	16.8
Validation	2001-02	44.9	39.6	15.5
	2002-03	42.0	42.0	16.0
	2003-04	43.5	36.9	19.6

From the Table- 1.1 it is evident that snowmelt contributions during calibration and validation period are not decreasing or increasing but random. Therefore, it can be concluded that the effect of climate change over Tehri reservoir is diminutive during period of study.

Regulatory Risk on Hydropower Plants

The regulatory risks may be legitimately or mandatory policies imposed on designer and planners of hydropower plants such as mandatory flow releases from reservoirs to conserve or maintain the ecological health, functioning and reverine of rivers. For example, a term defining “environmental flows” has been introduced by Govt. i.e. the minimum flow required to achieve desired ecological objectives. When this mandatory flows taken into account while planning & designing of the project, the qualitative objective is affected. Ultimately the capacity of project and thus generation reduces

sharply. Also during lean season when the discharges are low the mandatory releases causes insufficient supplies for drinking & agricultural uses in planes.

Though, environment releases are necessary, however on implications of mandatory discharges the potential of hydropower plants reduces which determines projects uneconomical and un-feasible. Differentiable impacts have been assessed in some of the projects under development by THDCIL such as Vishnugad Pipalkoti HEP (444 MW), Jhelam Tamak HEP (108MW) etc.

Conclusion

Certain areas of the globe are becoming increasingly susceptible to hydrological transformations caused by climate change. Changes in evaporation rates, annual river discharge amounts, seasonal and temporal offsets of hydrological patterns, extreme precipitation events, and increased glacial melt are the most pertinent climate change effects that will impact hydroelectric generation. It is necessary to remember that these impacts all affect each other and cannot solely be viewed in isolation. Some of these changes will cause an increase of hydropower generation, while others have the potential to decrease generation. This is detrimental to hydroelectric generation because to generate electricity reliably, a hydropower facility requires a relatively reliable water source. Additionally, differing climate scenarios and the uncertain trends make it very difficult to determine the precise effect climate change will have on hydroelectric production. However, even with this uncertainty, we still need to plan for the world's future energy demands.

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GRI/NVG INDEXING

	Sustainability Principles and Core Elements	Corresponding GRI Aspects	Reference
Principle 1: Businesses should conduct and govern themselves with Ethics, Transparency and Accountability			
Core Elements:			
1.1	Businesses should develop governance structures, procedures and practices that ensure ethical conduct at all levels; and promote the adoption of this principle across its value chain.	<ul style="list-style-type: none"> • Sustainability Governance • Social • Corruption 	8-13
1.2	Businesses should communicate transparently and assure access to information about their decisions that impact relevant stakeholders		8-19
1.3	Businesses should not engage in practices that are abusive, corrupt, or anti competition		8-13 30
1.4	Businesses should truthfully discharge their responsibility on financial and other mandatory disclosures.		Full Report
1.5	Businesses should report on the status of their adoption of these Guidelines		2
1.6	Businesses should avoid complicity with the actions of any third party that violates any of the principles contained in these Guidelines		2
Principle 2: Businesses should provide goods and services that are safe and contribute to sustainability throughout their life cycle			
Core Elements:			
2.2	Businesses should assure safety and optimal resource use over the life-cycle of the product – from design to disposal – and ensure that everyone connected with it- designers, producers, value chain members, customers and recyclers are aware of their responsibilities.	<ul style="list-style-type: none"> • Product Responsibility • Health and Safety 	5-7 14-19 30-32
2.3	Businesses should raise the consumer's awareness of their rights through education, product labeling, appropriate and helpful marketing communication, full details of contents and composition and promotion of safe usage and disposal of their products and services.	Product Responsibility	NA
2.4	In designing the product, businesses should ensure that the manufacturing processes and technologies required to produce it are resource efficient and sustainable.		35-43
2.5	Businesses should regularly review and improve upon the process of new technology development, deployment and commercialization, incorporating social, ethical, and environmental considerations.		Full Report
2.6	Businesses should recognize and respect the rights of people who may be owners of traditional knowledge, and other forms of intellectual property.	Local Communities	44-54
2.7	Businesses should recognize that over-consumption results in unsustainable exploitation of our planet's resources, and should therefore promote sustainable consumption, including recycling of resources.		35-43
Principle 3: Businesses should promote the wellbeing of all employees			
Core Elements:			
3.1	Businesses should respect the right to freedom of association, participation, collective bargaining, and provide access to appropriate grievance redressal mechanisms.	Labour/ Management Relation	20-26

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3.2	Businesses should provide and maintain equal opportunities at the time of recruitment as well as during the course of employment irrespective of caste, creed, gender, race, religion, disability or sexual orientation.	<ul style="list-style-type: none"> • Employment • Diversity and Equal Opportunity 	20-26
3.3	Businesses should not use child labour, forced labour or any form of involuntary labour, paid or unpaid.	<ul style="list-style-type: none"> • Child Labour • Forced and Compulsory Labour 	20-26
3.4	Businesses should take cognizance of the work-life balance of its employees, especially that of women.	Employment	22-24
3.5	Businesses should provide facilities for the wellbeing of its employees including those with special needs. They should ensure timely payment of fair living wages to meet basic needs and economic security of the employees.		20-26
3.6	Businesses should provide a workplace environment that is safe, hygienic humane, and which upholds the dignity of the employees. Business should communicate this provision to their employees and train them on a regular basis.	<ul style="list-style-type: none"> • Occupational Health and Safety • Security Practices 	30-32
3.7	Businesses should ensure continuous skill and competence upgrading of all employees by providing access to necessary learning opportunities, on an equal and non-discriminatory basis. They should promote employee morale and career development through enlightened human resource interventions.	Training and Education	26-30
3.8	Businesses should create systems and practices to ensure a harassment free workplace where employees feel safe and secure in discharging their responsibilities.	Non Discrimination	20-26
Principle 4: Businesses should respect the interests of, and be responsive towards all stakeholders, especially those who are disadvantaged, vulnerable and marginalized. Core Elements:			
4.1	Businesses should systematically identify their stakeholders, understand their concerns, define purpose and scope of engagement, and commit to engaging with them	Sustainability Governance Disclosures	14-19
4.2	Businesses should acknowledge, assume responsibility and be transparent about the impact of their policies, decisions, product & services and associated operations on the stakeholders		14-19
4.3	Businesses should give special attention to stakeholders in areas that are under developed.		14-19
4.4	Businesses should resolve differences with stakeholders in a just, fair and equitable manner		14-19
Principle 5: Businesses should respect and promote human rights Core Elements:			
5.1	Businesses should understand the human rights content of the Constitution of India, national laws and policies and the content of International Bill of Human Rights. Businesses should appreciate that human rights are inherent, universal, indivisible and interdependent in nature	Human Rights	Full Report
5.2	Businesses should integrate respect for human rights in management systems, in particular through assessing and managing human rights impacts of operations, and ensuring all individuals impacted by the business have access to grievance mechanisms.		Full Report

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5.3	Businesses should recognize and respect the human rights of all relevant stakeholders and groups within and beyond the workplace, including that of communities, consumers and vulnerable and marginalized groups.		Full Report
5.4	Businesses should, within their sphere of influence, promote the awareness and realization of human rights across their value chain	Training on Human Rights	28-29
5.5	Businesses should not be complicit with human rights abuses by a third party.	Human Rights	Full Report
Principle 6: Business should respect, protect, and make efforts to restore the environment			
Core Elements:			
6.1	Businesses should utilize natural and manmade resources in an optimal and responsible manner and ensure the sustainability of resources by reducing, reusing, recycling and managing waste.	Overall Environmental Performance	35-43
6.2	Businesses should take measures to check and prevent pollution. They should assess the environmental damage and bear the cost of pollution abatement with due regard to public interest.	Emissions, Effluents and Waste	35-43
6.3	Businesses should ensure that benefits arising out of access and commercialization of biological and other natural resources and associated traditional knowledge are shared equitably.	Indigenous Rights	35-43
6.4	Businesses should continuously seek to improve their environmental performance by adopting cleaner production methods, promoting use of energy efficient and environment friendly technologies and use of renewable energy	Product and Services	35-43
6.5	Businesses should develop Environment Management Systems (EMS) and contingency plans and processes that help them in preventing, mitigating and controlling environmental damages and disasters, which may be caused due to their operations or that of a member of its value chain		35-43
6.6	Businesses should report their environmental performance, including the assessment of potential environmental risks associated with their operations, to the stakeholders in a fair and transparent manner.	<ul style="list-style-type: none"> • Energy • Water • Bio Diversity 	35-43
6.7	Businesses should proactively persuade and support its value chain to adopt this principle assessment of potential environmental risks associated with their operations, to the stakeholders in a fair and transparent manner.	Product and Service	35-43
Principle 7: Businesses, when engaged in influencing public and regulatory policy, should do so in a responsible manner			
Core Elements:			
7.1	Businesses, while pursuing policy advocacy, must ensure that their advocacy positions are consistent with the Principles and Core Elements contained in these Guidelines.	Public Policy	8-13
7.2	To the extent possible, businesses should utilize the trade and industry chambers and associations and other such collective platforms to undertake such policy advocacy.		8-13
Principle 8: Businesses should support inclusive growth and equitable development			
Core Elements:			
8.1	Businesses should understand their impact on social and economic development, and respond through appropriate action to minimise the negative impacts.	Economic Performance	33-43
8.2	Businesses should innovate and invest in products, technologies and processes that promote the wellbeing of society.		5-7

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8.3	Businesses should make efforts to complement and support the development priorities at local and national levels, and assure appropriate resettlement and rehabilitation of communities who have been displaced owing to their business operations.	<ul style="list-style-type: none"> • Local Communities • Indigenous Rights 	18
8.4	Businesses operating in regions that are underdeveloped should be especially sensitive to local concerns.	Local Communities	44-54
Principle 9: Businesses should engage with and provide value to their customers and consumers in a responsible manner			
Core Elements:			
9.1	Businesses, while serving the needs of their customers, should take into account the overall well-being of the customers and that of society.		14-19 44-54
9.2	Businesses should ensure that they do not restrict the freedom of choice and free competition in any manner while designing, promoting and selling their products.	Competitive Behavior	NA
9.3	Businesses should disclose all information truthfully and factually, through labeling and other means, including the risks to the individual, to society and to the planet from the use of the products, so that the customers can exercise their freedom to consume in a responsible manner. Where required, businesses should also educate their customers on the safe and responsible usage of their products and services.	Product and Service Labeling	NA
9.4	Businesses should promote and advertise their products in ways that do not mislead or confuse the consumers or violate any of the principles in these Guidelines.	Market Communication	NA
9.5	Businesses should exercise due care and caution while providing goods and services that result in over exploitation of natural resources or lead to excessive conspicuous consumption.	Environmental Compliance	35-43
9.6	Businesses should provide adequate grievance handling mechanisms to address customer concerns and feedback.		14-19