

CHIRAG BHIMANI

SENIOR ENVIRONMENTAL PROFESSIONAL
(25+ YEARS EXPERIENCE)



Experience

Nov 2021 – Current	<ul style="list-style-type: none">✓ Project Consultant, Project Vesta, USA (working to reverse climate change and ocean acidification by greatly accelerating the Earth's natural long-term process of rock weathering through Coastal Carbon Capture) (www.vesta.earth)✓ Expert Member BAT (INDIA) and Member of Sub-Group for Study on Cross-Country Comparison of Selected BREFs of BAT Projects of Textile Sector, Cement Sector and Thermal Power Plant Sector, Environment Directorate, Organisation for Economic Co-operation and Development (OECD), Paris (www.oecd.org/chemicalsafety/risk-management/best-available-techniques.htm)✓ International Advisor, Adelphi (a leading independent think tank and public policy consultancy on climate, environment and development), Germany (www.adelphi.de/en) for the Sustainability in the Textile and Leather Sector in Bangladesh (STILE) Project, for Ministry of Environment, Government of Bangladesh implemented by GIZ Bangladesh✓ Technical Expert, Gujarat Cleaner Production Centre (GCPC) has been established by Industries & Mines Department, Government of Gujarat, Gandhinagar (gcp Gujarat.org.in)✓ Technical Advisor, Centre for Environment Education Ahmedabad (established as a Centre of Excellence under the Ministry of Environment, Forest and Climate Change, Govt. of India, working in the field of Environmental Education and Education for Sustainable Development) (www.ceeindia.org)✓ Vice-President (Operations), Wattency Worldwide LLP, India and Dubai (wattency.com) (new age fractional ownership Platform, that enables Renewable Energy Project investments in a structured framework to reap huge potential of high ROI's for retail investors)✓ Freelancing Climate Change and Sustainability Professional, Ahmedabad, Gujarat, India (www.chiragbhimani.in / www.chiragbhimani.com)✓ Founder Director, Blue Globe Foundation, India (Not for Profit Organisation for Marine and Environmental Conservation) (www.blueglobe.earth)
Nov 2020 – Oct 2021	<ul style="list-style-type: none">✓ Senior Technical Advisor, The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH (German Corporation for International Cooperation GmbH) (www.giz.de)✓ Expert Member BAT (INDIA) and Member of Sub-Group for Study on Cross-Country Comparison of Selected BREFs of BAT Projects of Textile Sector, Cement Sector and Thermal Power Plant Sector, Environment Directorate, Organisation for Economic Co-operation and Development (OECD), Paris (www.oecd.org/chemicalsafety/risk-management/best-available-techniques.htm)

Responsibilities as Senior Technical Advisor at GIZ

- ✓ Independent management of the projects (with support of the supervisor) with complex multiple tasks:
 - ✓ Clean Air Program
 - ✓ Reduction of Air Pollution in Three Indian Cities
 - ✓ Triangular Cooperation
 - ✓ BAT Reference Document for the Textiles Sector
 - ✓ National Document
 - ✓ Document for Gujarat State
- ✓ Responsible for project planning, implementation and management of the two projects and related additional tasks of GIZ India



Feb 2019 – Oct 2020	<ul style="list-style-type: none"> ✓ Freelance Environmental Professional, Ahmedabad, Gujarat, India ✓ Expert Member BAT (INDIA) and Member of Sub-Group for Study on Cross-Country Comparison of Selected BREFs of BAT Projects of Textile Sector, Cement Sector and Thermal Power Plant Sector, Environment Directorate, Organisation for Economic Co-operation and Development (OECD), Paris (www.oecd.org/chemicalsafety/risk-management/best-available-techniques.htm) ✓ Indian Senior Expert (Legal Framework), Adelphi (a leading independent think tank and public policy consultancy on climate, environment and development), Germany (www.adelphi.de/en) ✓ Expert, Tata Centre for Development, University of Chicago, Delhi Centre (tcd.uchicago.edu)
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Key Duties & Responsibilities

- ✓ Advise and guide industrial units for implementation of strategies for the management of environmental issues impacting on land, air, water and people including air pollution, water pollution and wastes
- ✓ Advise and guide industrial units for compliance of orders, directions and permits from various authorities viz. Hon. National Green Tribunal, Central Pollution Control Board, State Pollution Control Boards, District Authorities etc.
- ✓ To participate, give inputs and comments at various forums and in expert group workshops as an Indian Expert (non-member country expert) for development of Best Available Techniques Standards and Reference Documents (BREF) in the Environment Directorate of Organisation for Economic Co-operation and Development (OECD) - an intergovernmental economic organisation with 36 member countries, founded in 1961 to stimulate economic progress and world trade and having its Head Quarters in Paris
- ✓ Work as Indian Senior Expert (Legal Framework) for Adelphi, Germany for "Framework for Reuse, Recycle and Zero Liquid Discharge (ZLD) Of Wastewater in India" for the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH [German Development Cooperation (GIZ)]
- ✓ Advise, discuss and negotiate with various State Government Environment Departments and State Pollution Control Boards for nationwide scale up and implementation of "Star Rating Program" developed by Energy Policy Institute at University of Chicago (EPIC)

Jan 2013 – Jan 2019	Divisional (Unit) Head, Head Office, Gandhinagar Gujarat Pollution Control Board (GPCB), INDIA (gpcb.gujarat.gov.in) (State [Provincial] Environment Protection Agency) <i>(Bhavnagar, Amreli, Junagadh, Gir-Somnath, Banaskantha, Patan, Porbandar, Ahmedabad Rural, Botad & Ankleshwar Districts, BRAP – EODB, ETS, CEMS & BREFD Divisions)</i>
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Key Duties & Responsibilities

- ✓ Implement strategies for the management of environmental issues impacting on land, air, water and people including air pollution, water pollution and wastes for the Districts / Areas / Divisions assigned
- ✓ Liaise and consult with Government, industry and community groups regarding implementation of environmental management and protection
- ✓ Review, make recommendations and decide on applications for statutory approvals like Consent to Establish (CtE), Consent to Operate (CtO) and Hazardous Waste Authorisation and, where appropriate, recommend conditions to be applied to statutory approvals for the industries in the Districts / Areas / Divisions assigned
- ✓ Implement, analyse and report on complaint investigations into environmental management and protection
- ✓ Preparation, Compilation and Submission of various types of information as required by various authorities, government departments and agencies
- ✓ Reply and Follow-up of matters and issues with Central Government, State Government, Central Pollution Control Board, Hon. National Green Tribunal, Hon. High Court, Hon. Supreme Court etc.
- ✓ Strategise and implement Information and Communication Technologies (ICT) in GPCB including own website (gpcb.gujarat.gov.in) and e-governance portal XGN – eXtended Green Node (gpcbxgn.gujarat.gov.in) for functioning of Board
- ✓ Strategise, Develop and Implement Continuous Online Monitoring System for Water Emissions, Air Emissions and Ambient Air Quality within the State and display the same in public domain
- ✓ Nodal and Coordinating Officer from GPCB for "Business Reforms Action Plan" (BRAP) or also known as the Ease of Doing Business Initiative of Department of Industrial Policy and Promotion, Government of India. Under Assessment of State Implementation of BRAP - 2015, 2016 and 2017, GPCB achieved 100 % compliance for all the prescribed parameters. During the Year 2015 GPCB was the only department in the country to achieve 100% compliance and the same was noted by the World Bank Group in their Assessment Report
- ✓ Convener of the Committee for preparation of Best Available Techniques Reference (BREF) Document at GPCB. The BREF Document is being prepared in collaboration with German Federal Environment Agency (UBA) and Deutsche



<p>Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. Has independently created and managed the BREF Information System (BIS) platform vital for the communications under BREF preparation</p> <ul style="list-style-type: none"> ✓ Nodal and Coordinating Officer, GPCB for coordinating with CPCB on various issues like e-Samiksha (virtual platform for monitoring of follow-up action on the decisions taken during the presentations made by different Divisions/Zonal offices/State Boards to the CPCB Chairman), INDIA E-Track (MIS developed by CPCB for enabling the furnishing data/information by the SPCBs, updated information and quick access of data on 17 Categories and Grossly Polluting Industries) and various other regular review meetings at CPCB ✓ Technical Committee Member representing Gujarat State in the Pilot Project - "Emission Trading Scheme for Particulate Matter from Stationary Sources in India" ✓ Core team member for awards application such as National e-Governance Awards, Prime Minister's Award, United Nations Public Service Awards, Manthan Awards etc. and could bag 5 prestigious awards for GPCB including National Award for e-Governance (Incremental Innovation) – Gold Award for 2014-15 ✓ Editorial Committee Member for the GPCB in-house magazine – "Environmental Action" 	
Feb 1996 – Dec 2012	Deputy Environmental Engineer (DEE) and Assistant Environmental Engineer (AEE), Gujarat Pollution Control Board, INDIA
Oct 1994 – Jan 1996	Assistant to Senior Professional Structural Engineer Mr. Mulvantbhai G. Domadia, Professional Engineer, Rajkot INDIA (<i>Held Professional Engineer License</i>)

Education

Master of Technology – Environmental Engineering from Swarnim Startup and Innovation University, Gujarat INDIA – Thesis on "**Comparative Study of Reactive Media for Remediation of Ground Water Contaminated by Industries Using Permeable Reactive Barriers**"

Bachelor of Civil Engineering from Sardar Patel University (Studied in Birla Vishwakarma Mahavidyalaya – Engineering College), Vallabh Vidyanagar, Gujarat INDIA – Electives – "**Air Pollution Control**" and "**Advanced Structural Analysis**"

Felicitated by University of Berkley in Michigan, USA and conferred the Degree of **Doctor of Philosophy** (Honoris Causa)

Training

Training Program on Environment Friendly Ship Recycling at The Association for Overseas Technical Scholarship, Yokohama, Japan – February 2011

ICAP Summer School on Emissions Trading at Madrid, Spain – July 2011

ICAP-NA2050 Workshop on Developing Industrial Benchmarks for GHG Emissions at Pace University, New York, USA – September 2012

Training program for Online Monitoring Systems at Freiburg and Dresden, Germany – September 2014

Remediation of Sites Contaminated with Hazardous Wastes at Deventer, Netherlands – October 2014

ICAP Master Class on Emissions Trading at London, UK – July 2015

Training program "Remote Sensing: An Overview for Decision Makers" at Indian Institute of Remote Sensing, Dehradun – June 2018

Study Tour to Germany organised by German Federal Environment Agency (UBA) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH for preparation of Best Available Techniques Reference (BREF) Document at GPCB – September 2018

Successfully completed Applied Remote Sensing Training Programs organised by National Aeronautics and Space Administration (NASA) USA on :

- ✓ Satellite Derived Annual PM_{2.5} Data Sets in Support of United Nations Sustainable Development Goals (15 & 29 March 2017)
- ✓ An Inside Look at how NASA Measures Air Pollution (26 & 28 May 2020)
- ✓ Remote Sensing of Coastal Ecosystems (25 August, 1 & 8 September 2020)



- ✓ MODIS to VIIRS Transition for Air Quality Applications (22 October 2020)
- ✓ Introduction to NASA's "Black Marble" Night Lights Data (3 December 2020)
- ✓ Satellite Observations and Tools for Fire Risk, Detection, and Analysis (11 & 27 May 2021)
- ✓ Using Earth Observations for Pre- and Post-Fire Monitoring (Jan 18 & 20, 2022)

Presentations / Publications

Presentation on "Innovative Tools in Environmental Governance" on 9 October 2012 at Harvard Kennedy School, Harvard University, Cambridge, MA, United States of America

Specifications and Guidelines for Continuous Emissions Monitoring Systems (CEMS) For P M Measurement with Special Reference to Emission Trading Programs by Dr. Dipankar Saha, Chirag Bhimani, et al. – Central Pollution Control Board, New Delhi, 2013-14

Issues and Challenges for Emission Trading Scheme for Particulate Matter in India by Kavitha B.V., Bhimani Chirag, et al. – Journal of Environmental Research and Development, Vol. 9 No. 03, January-March 2015

A Critical Literature Review on Emission Trading Scheme by Ekam Patel, Chirag Bhimani, et al. – International Journal of Advance Research and Innovative Ideas in Education, Volume 2 Issue 3 May 2016

A Critical Literature Review of Air Pollution in Cement Industry by Kruti Shah, Chirag Bhimani, et al. – International Journal of Advance Research and Innovative Ideas in Education, Volume 2 Issue 3 May 2016

e-Governance - Governing Tools - A booklet on checks and balances in the Online Portal of GPCB by Chirag Bhimani, et al., January 2017

Review of Emissions Trading Schemes Across The Globe - Chirag Bhimani and Bina Patel – International Journal of Advance Research and Innovative Ideas in Education, Volume 3 Issue 4 July 2017

Presentation on "ENVIRONMENTAL GOVERNANCE - Towards Better Enforcement & Monitoring" at National Conference on Air and Water Pollution: Innovations in Regulation, Abatement and Monitoring jointly organized by EPIC-India and NITI Aayog on 7 July 2017 at University of Chicago Centre, New Delhi

Presentation on "Challenges in DAHS for CEMS" at CEM India 2017 (Conference on Emissions Monitoring) on 28 September 2017 at New Delhi organised by International Labmate Ltd., United Kingdom

Contributing team member for the book "CEMS – Continuous Emissions Monitoring System – A Technical Guidance Manual" published by Centre for Science and Environment, New Delhi, India in September 2017

Presentation on "Implementation Challenges in CEMS: Indian Experience" at CEM 2018 (Conference on Emissions Monitoring) on 16 May 2018 at Budapest, Hungary

Lecture at National Conference on Innovation in Pollution Regulation on 13 August 2018 at University of Chicago Centre, New Delhi

Presentation on "e-Governance In Emerging Economies" at European Corporate Governance Conference on 2 April 2019 at Bucharest, Romania

Presentation on "An Overview of BREF in Gujarat, India" at Workshop to Promote the Ratification of Protocols of the UNECE Air Convention with Focus on Countries in the EECCA Region organised by United Nations Economic Commission for Europe on 14 May 2019 at Environment Ministry, Berlin, Germany

Presentation on "CEMS - Gujarat Experience" at Jharkhand State Pollution Control Board, Ranchi on eve of World Environment Day, 5 June 2019

Presentation on "Environmental Modernisation in India" at the III Climate Forum of Cities, Moscow 2019 on 5 September 2019 organised by Department for Natural Resources and Environmental Protection, Moscow City Government at Moscow, Russia (eipc.center/en/news_en/environmental-modernisation-of-industry)

Passive in-Situ Remediation of Contaminated Ground Water using Permeable Reactive Barrier by Chirag Bhimani and Dhvani Joshi – International Journal for Scientific Research & Development, Vol. 7, Issue 4, June 2019

Presentation on "Opportunities and challenges for BAT in India and current status" at Fourth Meeting of Expert Group on BAT on 23 October 2019 organised jointly by the Expert Group on BAT and the OECD Secretariat of the EU4Environment project at Seoul, South Korea



Presentation on "Current status of BAT in India" at International Workshop on BAT on 24 October 2019 organised by Ministry of Environment, Republic of Korea at Seoul, South Korea
Presentation on "Legal framework for wastewater treatment and reuse in the industry" in the online expert certification program on industrial water management organised by International Centre for Clean Water (ICCW)- Indian Institute of Technology Madras (IITM) in association with Confederation of Indian Industries (CII) - Southern region, Chennai on 7 August, 2020
Presentation on "How to conduct CEMS and CEQMS Audit" at the online training programme for Industry officials, regulators and other stakeholders on "Understanding Real-time Monitoring for Industries and its Audit Methodology" "CEMS Audit" on 28 September 2020 organised by Centre for Science and Environment, New Delhi
Presentation on "CEMS Audit Methodology" at the "Advance Training Programme on Continuous Emission and Effluent Monitoring System for Regulators" on 29 September 2021 at Anil Agarwal Environmental Training Institute, Nimli, Rajasthan organised by Centre for Science and Environment
Presentations at 6th meeting of the Expert Group on Best Available Techniques (BAT) under the Environment Directorate Chemicals and Biotechnology Committee of Organisation for Economic Co-operation and Development (OECD), Paris on 8 and 9 November 2021 organised by EIPC (Russian BAT Bureau), Moscow, Russia
Presentation at the International Conference "the Concept of Best Available Techniques : Application across the World" on 10 November 2021 organised by EIPC (Russian BAT Bureau), Moscow, Russia
Several Trainings Sessions for newly recruited District and Sessions Judges at Gujarat High Court Judicial Academy, Ahmedabad on Environmental Acts and Rules – 2012 to 2018
Visiting Lecturer at Nirma University, Ahmedabad for the subject "Air and Noise Pollution" specifically for the topics - Air Pollutant Modelling and Air Quality Monitoring and Pollution Control" – 2021
Lectures and presentations at Nirma University, Birla Vishwakarma Mahavidyalaya, Charotar University of Science & Technology and various other such academic and professional institutes on Environment related topics including techno-legal issues and innovative technologies and initiatives – 2010 to 2021

Achievements / Awards

Cumulative Performance Index – 9.70 /10.00 and Ranked FIRST in the University in the FINAL YEAR at Graduate Level
Three Gold Medals viz. from Birla Vishwakarma Mahavidyalaya (Engineering College), Sardar Patel University, Vallabh Vidyanagar and Institute of Engineers (India) for best performance at Graduate Level
Cumulative Grade Point Average – 8.79 /10.00 and Ranked FIRST in the University at Post Graduate Level

Professional Memberships

Member of the Forum for Air Quality Modelling in Europe (FAIRMODE) - A joint response initiative of the European Environment Agency (EEA) and the European Commission Joint Research Centre (JRC) (fairmode.jrc.ec.europa.eu)
Member of the Forum on "Earth Observations of Crop Burning and Air Pollution over India" joint initiative of NASA and USRA (www.firesandaq2020.info)
Member of Institute of Engineers (India) (www.ieindia.org)
Member of Scientific & Technical Committee & Editorial Review Board on Environmental & Ecological Engineering, International Research Conferences at The World Academy of Science, Engineering & Technology (www.waset.org)



Areas of Interest

Climate Change Mitigation through Coastal Carbon Capture and other Innovative Technologies	Best Available Techniques (BAT) Reference Documents
Environmental and Climate Change Policy, Planning & Data Analytics	Innovative Business Models for Renewable Energies like Solar, Wind, Tidal etc.
Air Quality Management using innovative tools like Satellite Based Measurements, Market Based Instruments like Emissions Trading Scheme etc.	Environmental Management using innovative technologies like Remote Sensing, UAVs & Drones, Artificial Intelligence etc.
Contaminated Sites Remediation and Management	Coastal & Marine Pollution Management

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