

**Sustainability  
@ Tata Chemicals**



Our Mission “**Serving Society through Science**”, our vision for a greener tomorrow and our values all together helps us integrate sustainability as a core of our business strategy.

As a multi-product and multi-location enterprise, involved in the manufacture of commodity chemicals with a supply chain extending to consumer product space and several economic activities, our activities have

the potential to impact significantly on environmental, economic and social systems. We have identified our key stakeholders based on the analysis of impacts across the Value Chain.

	ECONOMIC	SOCIAL	ENVIRONMENTAL
INBOUND LOGISTICS	Freight / Transport Cost Raw Material Price & Quality Raw material Securitisation	Safety & Health Issues for Employees / Vendors/ Transporters Safety and Health Issues for surrounding community Scarcity issues for communities using the same resources	Resource Depletion Pollution risk due to leakage / improper handling of raw materials
MANUFACTURING	Impact on Cost & Quality of the product Impact on opportunities for livelihood of the surrounding communities	Employee Satisfaction Safety & Health of employees & local community Employee issues due to level of automation	Issues related to emissions Disposal of hazardous waste Usage levels / Depletion of resources like water
OUTBOUND LOGISTICS	Freight / Transport Cost	Safety & Health Issues for Labour/ Transporters Working standards of 3 <sup>rd</sup> party employees	Pollution risk due to leakage / improper handling of goods
MARKETING AND SALES	Impact on Customer Demand & Market Position Impact on Brand Value / Positioning	Impact on Customer due to quality & service Safety & Health of Employees	Impact on proper / Improper handling of Goods (Responsible care principles) Issues due to dust emissions

Fig. Ss-01

### Stakeholder engagement, Issue Assessment

Our Strategic Planning Process besides having inputs related to changes in technology and market place, changes in competitors' actions and regulations, also takes into

consideration sustainability inputs including risk assessment and feedback from stakeholder engagement. The engagement process ensures that we have established two

way communications with our stakeholders to ensure that appropriate inputs are included both during the business strategy formulation and during implementation. (Fig:Ss-02)

Stakeholder	Fora	Frequency	Agenda	Methodology	Two-way Comm.	Communication records and outcome
Share Holders	Annual General Meetings (AGM), Quarterly reports to Shareholders Analyst meets, Annual report	Annually Quarterly	Financial performance, broad future strategies, information sharing, feedback	Presentation, teleconference, road show, Audio- visuals, reports	Yes	Transcript of teleconference, minutes of AGM questions, Shareholder Satisfaction Index
Customer	Distributor Meets, KAM Workshops, senior management customer contact meet, customer's visit to TCL facilities	As per calendar, Annually' Monthly	MVV, TCoc, Direction setting, customer feedback/ satisfaction, Improvement Opportunities.	Presentations, brainstorming, informal discussions, CFT meetings, plant visit	Yes	Minutes of meetings and action plans
Suppliers Partners	Plant Visit, Suppliers meets	As per calendar	MVV, TCoc, Direction setting, customer feedback / satis., Imp. Opportunities	Presentations, brainstorming, informal discussins, CFT meetings, plant visit ,SRM Portal	Yes	Minutes of meetings and action plans
Govt.	Advocacy Meeting with Government and Ministries	As required	Appraising govt. on constraints faced by the Industry & suggesting the way ahead	One-to-one meeting	Yes	
Employee	Senior leaders' communication, Functional Head Communication meets, Exit Interview / Communication cascades, Goal setting & performance Appraisal meetings, Theatre Workshops (Oorja), Town hall meets, Awaaz workshops, senior leader talks,	As per calendar, As required.	Immediate communication / announcements / Create awareness and promote participation, Issues and actions for addressal Performance Improvement, communication of MVV, Feedback from employees on their well-being and satisfaction, Knowledge sharing on critical issues	Discussions and communications-formal & informal, Audio and video conference, One-to-one meetings, Skits.	Yes	Feedback, Collecting articles/ other news from employees, Minutes of meeting, Action plans, Awareness and participation, Record of Exit Interviewse-PMS, Polls, Recorded talks
	Email updates, Poster Campaigns, Intranet, House Magazines, Circulars			Mail from Corp. Com, Creative posters Circulars, Printed magazine	No	
Community Society	TCSR Village visits Location head's meet	Daily/Req Quarterly	Community Development Initiatives communication and capturing societal concerns.	Discussion forum, personal visit		Minutes of meetings and action plans

Stakeholder engagement process

Fig. Ss-02

Our strategic planning process besides having inputs related to changes in technology and market place, changes in competitors' actions, regulations etc. also takes into considerations the material issues thus identified.

As issues are interconnected, changes in one part impact others across the value chain. Our effort is to systematically understand sustainability aspects of the various stages of our value chain and increase stakeholder engagement to identify opportunities that meet 'essential needs' relating to economic, environmental & social aspects. In the process the following aspects are taken care of:

- The technologies used for production of needed goods are not harmful to the environment or to human health
- Renewable resources (such as biomass, solar energy & wind etc) are used rather than those, like fossil fuels, that will eventually run out
- Materials that are not biodegradable are recycled at the end of their use. Manufacturing processes are either designed so as not to produce waste products or to recycle them or they are biodegradable.

The analysis of all these inputs helps us in revisiting and if need be, redefining our Mission, Vision and Values. This leads to the SWOT analysis, which helps us to identify our strategic challenges and advantages including those that pertain to sustainability concerns. The current challenges faced by us are:

- Dependence on commodities/low differentiated products
- Global demand destruction and overcapacity in China
- Climate change/sustainability expectations
- High energy cost ,low delivered cost of competition
- Development of skill sets required for new business
- Funding for growth

## Risks and Opportunities

**Enterprise Risk Management** at TCL is a key tool used to ensure that major business risks & opportunities are given due importance in the overall organizational governance. It helps to drive the sustainability strategy and actions and considers all aspects including

leadership, people-numbers and skill-sets, facilities, plant & machinery which material to achieving business objectives – which include the sustainability objectives as per the enterprise BSC. Enterprise Risk Management framework at TCL covers all the business units, subsidiary operations and new businesses including the Innovation Centre activities. It includes the following activities-  
**Risk Identification:** A periodic assessment across the Company and the subsidiaries together with a trigger based assessment is undertaken to identify and thereafter prioritize significant risks. This assessment is based on an online risk perception survey, environment scanning and inputs from key stakeholders.

**Risk Measurement and control:** Owners are identified for all identified risks and they go on to develop and deploy mitigation strategies. Measurement indices are used to evaluate effectiveness of the mitigation plans.

**Risk Reporting and Review:** Besides detailed review by the Executive Committee, Enterprise Risks are reviewed quarterly by the Audit Committee of the Board. Risk owners present status updates on their mitigation plans. Some of the major risks and concerns identified are :

**Continued Recessary Pressure** (Linked to the sustainability challenge regarding global demand destruction & overcapacity in China): Though markets & economies have begun to recover from the unprecedented turmoil witnessed in the previous year, reduced consumer wealth and consequent demand continues to be a concern. Additionally, the withdrawal of fiscal stimulus packages across the globe further accentuates the situation. While the breadth of TCL's portfolio and our geographic spread has helped mitigate the crisis to an extent, we will continue to protect our profits through a new wave of enterprise wide initiatives on cost compression under our ongoing program called ADAPT.

**Financial Risks** (Linked to protecting the financials of the company from fluctuations in currency rates): TCLs breadth in international operations, our foreign currency borrowings and our dependency on imports for the phosphatic fertilizers, continue to subject us to risks from changes in the relative value of currencies. Our elaborate Treasury policy

ensures that foreign exchange exposures are within prescribed limits and the use of foreign exchange forward contracts is resorted to judiciously. We have a separate Risk Management Committee which monitors and helps mitigate our currency & interest rate risks.

**Input costs and securitization of raw materials/energy sources** (Linked to the sustainability challenge of securitization of raw materials/energy at right costs): The prices of raw materials for phosphatic fertilizers are subject to economic conditions and global demand-supply balances. With the change in policy to Nutrient Based Subsidy, it's imperative that the imports are competitive. While TCL has entered into long term supply contracts for its key raw materials & energy sources, the pricing of these are normally formula based. TCL actively monitors the environment for opportunities and maintains good supplier relationships to ensure minimal impact from commodity price fluctuations.

**People and Talent** (Linked to the sustainability challenge of availability of right skillsets for the operations and growth plans): Attracting and retaining talented employees is core to our success. TCL has over the years embarked on several "people initiatives" to enhance the environment and help employees achieve their personal and professional goals. Work life balance is consciously pursued. TCLs performance appraisal systems are well integrated to our business objectives and help bring out the best in individuals. Investment in employees through training are constantly made to ensure we equip our employees for challenges in their roles.

**Safety and Environment related risks** (Linked to the rising expectations from key stakeholders regarding safe and environment-friendly operations): TCL is conscious of its strong corporate reputation and the positive role it can play by focusing on social and environmental issues. Towards this, the Company has set very exacting standards in workplace safety, health and environmental management. The Company continue to recognize the importance of safety & environmental issues in the operations and have established comprehensive leading and lagging indicators to track performance in these areas. TCL values the safety of our

employees and associates to constantly raise the bar in ensuring a safe work place. Our Global Customer Base, Community Equity / Trust, Tata Brand Equity, commitment to Responsible Care, preferential access to raw materials and a committed workforce are our key strategic advantages that helps us to effectively address the challenges. As we look into the future, we find new ways of responding to the continually changing & emerging needs of our stakeholders. Innovation is therefore an important Value to seed the future growth. We have established an Innovation Centre in Pune, India in 2004. The Centre was set up with the objective of developing world class

R&D capabilities in new knowledge-based products, cutting edge technologies and emerging areas of nanotechnology and biotechnology. The Centre would thus help develop a wider range of value added products and build new business lines for the future. With Sustainability and wellness as the mantra & nanotechnology & Biotechnology as the focus, the foundation is strong for Innovation center to deep dive and soar high. The efforts have not just been in innovations catering to TCL and Tata Group companies but also for and in collaboration with other industries, academic institutions and research organizations. One of the key innovation from the innovation centre is the

“Tata Swach” water purifier. We have recruited scientists with high levels of capabilities in their field of specializations. The Centre has built a state-of-the-art infrastructure with latest equipment for development work. Our efforts around Agri-Business, Fresh Produce, Bio-fuels (the 3 major new initiatives) are significant drivers to sustainable agriculture & our aim is to achieve premier positions in the respective fields in a short time. As we integrate with our new national and international entities, we learn from each other, creating synergies that help us multiply our strengths and increase our global competitiveness.

### Drivers of Sustainability

During the previous years, we had identified the six pillars of sustainability, which are:

1. Climate Change: GHG Emissions
2. Green Manufacturing Index (Energy consumption, solid waste reuse, Green cover, Afforestation, Renewable energy)
3. Workforce- Safety, Health & engagement

4. Community : CS protocol
  5. Product Stewardship
  6. Sustainability Focused Investments
- We have made considerable progress on each of these and the status of our performance against commitments Vs achievement is shown in the table Fig. Ss-03 .There have been

setbacks on some of the targets, which have led to internal review and analysis and necessary corrections, preventives and enablers have been identified and implemented. We would continue to strive for these goals in the future and work to overcome these gaps.

Aspect	Indicator	Unit	Targets	2008-09	2009-10	Remarks
Social- Workforce Safety & Health	Fatalities	No.	0	0	1	The unfortunate fatality due to electrocution at Mithapur plant led to introspection and resolve to engage with contractors on zero tolerance on safe behavior and practices
	TRIR (Total Recordable – LWC including fatality, MTC, RWC – Injury Rate)	No. of TRI per million man-hrs worked	<1	1.35	1.42	We feel happy that the injury rate is matching the global best in the chemical industry encouraging us to drive the Zero Injury program
	LTIR (Lost Work Time cases including fatality– Injury Rate)	No. of LWC per million man-hrs worked	<0.5	0.57	0.89	We will focus on eliminating the high severity injuries to achieve the goal of less than 0.5 LTIR
	OHI (Occupational Health Index)	%	>95%	>90%	>95%	We would increase the sample size of contract workers in the Occupational Health Checks to increase the coverage
Social- Community	CSPI	No.	850 by 2015	687	714	There would be increased emphasize on quantification of impacts and skill building in Community Project Management
Climate Change	GHG Emission	MT of CO <sub>2</sub> e/MT of products sold	<0.6 by 2020	0.69	0.65	Participation in CDP – Carbon Disclosure Project has helped us in benchmarking and find that our product intensity is on the lower end amongst large chemical corporate across the world.
Sustainable Manufacturing	Green Manufacturing Index	%	5% Improve YOY	0.38%	2.34%	The performance on this key parameter lagged behind the targets due to low reuse of fly ash and soda as solid waste in cement production. Necessary actions have been taken including installation of additional filters to maintain improvement in the index
Product Stewardship	LCA for all Major products on website by 2015	Website Reporting Year	All major products Urea, DAP, Soda Ash & Salt LCA on website by 2015	Work started on LCA for Urea & DAP	Completed the manufacturing LCA for Urea & DAP, Soda Ash and Salt	We would be getting the Life Cycle Assessment methodology for all products and extend it for carbon and water foot-printing.
Sustainability Focused Investments		% of Total Investment	>20% of total investments by 2020 in carbon offsets & innovation green chemistry	Swachh water purifier jOil JV	Solar Power at Mithapur; Mozambique bio-fuels; Customized Fertilizers	There are significant initiatives in this direction which will yield positive results in increasing share of investments in sustainable businesses

Fig. Ss-03

Going forward we have taken the process of materiality determination to the next level. We improved our engagement process to include structured engagement by a third party (SustainAbility, an NGO from UK) on sustainability concerns and assessment of these leading to establishment of the materiality map. The process followed is as Fig. Ss-04

Structured interviews and focus group discussions were held with both internal & external stakeholders. Approx. 20 external stakeholders were a part of this process. Tata Chemicals identified both the business drivers & sustainability concerns. 8 issues & 30 sub issues were identified which are listed in (Fig. Ss-05) below. These reinforced the six drivers

of sustainability which we identified & engaged with in the past. Fig. Ss-06 details the business case matrix linking the sustainability and business drivers. The business case matrix is the basis for TCL's materiality map that clearly identifies the key material themes. (Fig. Ss-07)

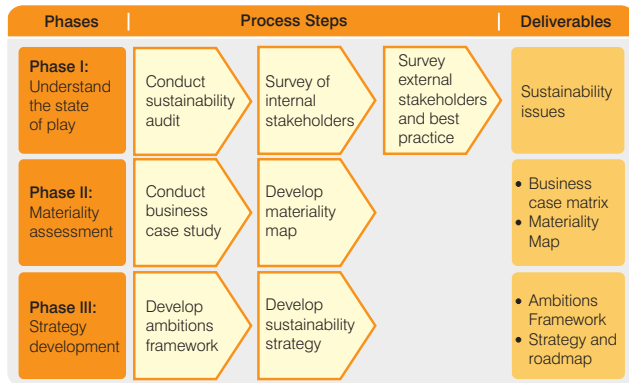


Fig. Ss-04

Issue	Sub Issue
Corporate Governance	Ethics, fair competition
Employment Practices	Training safety
Resource Usage	Energy efficiency Water usages/mgmt Renewables/fossil fuels
Waste and Emissions	Accidents/spill Emissions/discharge - solids, liquids, gases
Supply Chain	Sustainability performance
Customer Service	Product performance, safety
Community Development	Benefits

Fig. Ss-05

Business success drivers	License to operate	Brand value and reputation	Quality of human resources	Resource efficiency	Market access and revenue growth	Access to capital	Legal action
Sustainability drivers							
Business ethics	High Impact	High Impact	High Impact	Low Impact	High Impact	High Impact	High Impact
Training	Low Impact	High Impact	High Impact	High Impact	High Impact	Low Impact	High Impact
Safety	High Impact	High Impact	High Impact	Low Impact	High Impact	High Impact	High Impact
Accidental spills	High Impact	High Impact	High Impact	Low Impact	High Impact	High Impact	High Impact
Energy efficiency	High Impact	High Impact	High Impact	High Impact	High Impact	High Impact	High Impact
Water consumption	High Impact	High Impact	High Impact	High Impact	High Impact	High Impact	High Impact
Renewable energy	High Impact	High Impact	High Impact	High Impact	High Impact	High Impact	High Impact
Environmental performance of suppliers	Low Impact	High Impact	High Impact	High Impact	High Impact	High Impact	High Impact
Waste and emissions (solid / liquid / gaseous)	High Impact	High Impact	High Impact	High Impact	High Impact	High Impact	High Impact
Product performance, safety	High Impact	High Impact	High Impact	High Impact	High Impact	High Impact	High Impact
Community engagement	High Impact	High Impact	High Impact	High Impact	High Impact	High Impact	High Impact

High Impact     Medium Impact     Low Impact     Very low or no Impact

Fig. Ss-06

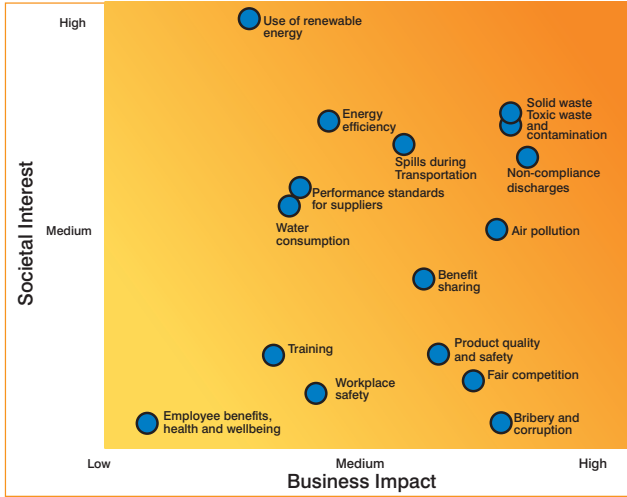


Fig. Ss-07

### Drivers of Sustainability

The seven material sustainability Issues identified are as follows: (Fig. Ss-08)

Issue	Sub-issues	Achieved through
Waste (solid/liquid)	Solid waste, toxic waste, contamination, discharges, spills	Measurement Life Cycle assessments Sustainable investments
Climate change and GHG emissions	Air discharges Use of renewables	Measurement Life Cycle assessments Sustainable investments
Water and energy consumption	Energy consumption water consumption	Measurement Life Cycle assessments Sustainable investments
Employee investments	Safety and health	Training
Supply chain performance	Safety and health Other conditions of work Environment	Training Technical/financial support Life Cycle Assessment
Community development	Benefit sharing Social investments	Infrastructure Livelihoods

Fig. Ss-08

The findings take forward our current approach with more granularity, linking them to business and making them more strategic. (Fig. Ss-09)

Focus Areas	Key Performance Indicators	Findings of the Study
Employee Safety & Health and Community Development	Workforce Safety & Health	Employee investments
	Community	Community development
	Affirmative Actions	
Climate Change	Mt. CO2/mt of total products	Climate Change and GHG emissions
Sustainable Manufacturing	Green Manufacturing Index	Waste Energy and water consumption
Product Stewardship	Life Cycle Assessment	Supply chain performance
Sustainable Investments	Renewable raw materials and energy, biofuels, low carbon products, water, agribusiness, Green Chemistry Innovations	Waste Climate Change and GHG emissions Energy and water consumption
Sustainability Reporting & Communications	UNGC-GRI Reporting, Carbon Disclosure Project-UK	Transparency, Materiality, Share Concerns

Fig. Ss-09



Tata Chemicals reviews the strategic objectives and the performance against targets and revisits the same every year as part of strategic planning process. Long-term goals for sustainability are included in the long-term strategy planning process of the organization to cover the various materiality aspects outlined above. All issues related to the economic, environmental & social aspects are reviewed across the organization. At the locations, the review forums include the environment steering committee, safety steering committee, HR council review, Apex quality council review, SBU council review & at the corporate level these are reviewed at the EXCOM, CSSGM and TCSR board meetings. Sustainability goals linked to material concerns as identified by the process mentioned above are:

**Waste**

- Reduce solid and effluent waste discharge to lower than global benchmarks and eliminate accumulation of solid wastes over the years.
- All packaging material will either be recyclable or reusable; where not possible, arrangements made for their collection and safe disposal.

**Climate change, GHG emissions**

- Reduce CO2e intensity to meet the national and global commitments.
- Maximise usage of energy from renewable sources.
- Carbon emission reduction would be a key selection criteria while upgrading technologies and selecting new technologies.

**Energy & water**

- Reduce specific energy and water consumption to levels comparable to

global benchmarks and be in the top decile of global best performers.

- Attain overall water neutrality and reduce/eliminate ground water usage especially from shallow aquifers which can affect the ground water table in the surrounding area. Conduct Water Resource Management Studies at all locations involving water intensive operations.
- Reduce water and energy consumption in usage of products through product design and promotion of better usage practices.

**Employee investments**

- Create an environment that fosters employee well-being, achievement, innovation, learning, teamwork and ensures safety & health and minimises attrition rates

**Supply chain performance**

- Establish social & environment standards (covering safety, working conditions, skill, well-being, GHG and other emissions, water/energy consumption) for supply chain ( workers, material, transportation etc.).
- Cooperate and collaborate to ensure compliance improvements in sustainable performance of these amongst key suppliers and customers and partners.

**Society/ community**

- Investments will be made in sustainable & “marketable” livelihoods impacting all communities in the area of influence and reach.
- Be recognised as the leader in community development amongst Indian companies in terms of spread and impact.

