



*THE PUMA FOREVER FASTER*  
***SUSTAINABILITY HANDBOOKS***  
ENVIRONMENTAL STANDARDS



## ***FOREWORD***

At PUMA, we believe that our position as creative leader in the Sports industry gives us the opportunity and the responsibility to contribute to a better world for generations to come. With the Forever Faster transformation, Sustainability remains a key value of the PUMA brand. Faster is how we are working towards a more just and sustainable future, accelerating positive change in the industry and the world. We believe that by staying true to our values, inspiring the passion and talent of our people, working in sustainable, innovative ways, and doing our best to be Fair, Honest, Positive, and Creative, we will keep on making the products our customers love, and at the same time bring our vision of a better world a little closer every day.

We aim to bring our trading practices in line with the principles of sustainable development. This means that we do not just want to provide high-quality products, but it is our duty to ensure that these products are manufactured in workplaces where human rights are respected and workers' health and safety as well as the environment are protected.

PUMA takes on the responsibility for everybody involved in the production process, whether a PUMA employee or not. However, this responsibility cannot replace nor substitute the responsibility of our Vendors within their own manufacturing facilities. Our "Code of Conduct" expresses the expectations we have of our Vendors. It is integrated into our manufacturing agreement, which delimits the business relationship we share with our partners. PUMA takes this shared responsibility seriously. We reserve the right to terminate business relations with any partner who does not respect the letter or the spirit of our Code of Conduct or Corporate Sustainability Policies.

Only by partnering up with our Vendors we will be able to have a positive impact and contribute to making a better world for the communities we operate in, the workers who make our great products, our customers and our own employees and, of course, for future generations.



**Anne-Laure Descours**

Chief Sourcing Officer

# ~~*FOLLOW*~~ *MASTER THE RULES*

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## Introduction

### ***RUNNING THE WALK***

Taking steps to protect the environment, in accordance with established environmental and social standards, has become an important topic in every industry, as well as in society in general. As a signatory of the United Nations Global Compact, PUMA is committed to setting a brave example for optimizing our social impact and reducing our environmental footprint.

Our comprehensive and ambitious targets to enhance our sustainability are inspired by the United Nations Sustainable Development Goals and encompassed in the PUMA 10FOR20 Sustainability Targets (see Sec. 1.3).

### ***WORKING AS A TEAM***

PUMA's pledge applies to both PUMA entities and Vendors in our supply chain. While we continuously optimize the production process, PUMA also takes measures to mitigate the negative impacts of our supply chain on the global ecosystem.

## The PUMA Forever Faster Sustainability Handbooks

PUMA requires all Vendors within our supply chain to fulfill established environmental and social standards. First, all PUMA Vendors must have met all minimum legal requirements. In addition, each must comply with PUMA standards (which may exceed legal requirements) as defined in the four (4) PUMA Forever Faster Sustainability Handbooks: (the "Handbooks"):

- "Social Standards" elaborates upon PUMA's position on labor rights
- Guidelines for sustainability and environmental protection are contained in "Environmental Standards"
- "Occupational Health & Safety" outlines our standards for and health and safety throughout our supply chain
- Guidelines for Chemicals and Restricted Substances are in "Chemical Management"

These Handbooks are subject to continuous updates. Any feedback or suggestions for improvement is welcome (contact your PUMA Sustainability Team representative or email [sustain@puma.com](mailto:sustain@puma.com)).

### ***GETTING IN THE GAME***

PUMA pursues and maintains contractual relationships only with those Factories and Licensees that have agreed to comply with the guidelines and directives set out in the Handbooks.

- All PUMA Factories are contractually bound to pursue business relationships only with Subcontractors that are in compliance with the Handbooks
- Any indication of 1) false documentation or other failures to provide accurate information, or 2) coaching of workers may have serious repercussions on the business relationship with PUMA, e.g. Deactivation

### ***COMMUNICATE, COMMUNICATE, COMMUNICATE***

Transparency from all of PUMA's Vendors is paramount to a successful working relationship. PUMA's Sustainability Team is determined to work with Vendors, to help address any root causes of noncompliance (through e.g. training and development projects). However, this can only be effectively conducted within the context of full transparency.

#### ***Legal Disclaimer:***

*The content of this handbook is not intended to replace local or national regulations, nor will following the guidelines in the Handbooks guarantee compliance with them. At all times, it remains the sole responsibility of our own entities and Vendors, and their Subcontractors, to ensure compliance with all applicable local and national regulations, including those labor, worker health and safety, and environmental and product safety.*



## Sec. 1 – PUMA’s Mission Statement & Sustainability Strategy

### 1.1 PUMA’s Mission Statement

PUMA’s mission is “to be the fastest sports brand in the world.”

Faster is how PUMA will work towards a more just and sustainable future, accelerating positive change within the industry and the world.

PUMA achieves this by considering the welfare and best interests of:

- the **consumers** of PUMA products,
- the **workers** who make them, and
- the **environment** that provides the resources for their manufacture.

PUMA aims to do this while striving to make our business profitable, in order to continuously optimize the benefits for all our stakeholders.

### 1.2 PUMA’s Sustainability Strategy

In line with our “Forever Faster” transformation, PUMA has refined its global sustainability strategy that balances three (3) dimensions—**Economic**, **Social**, and **Environment** (see Fig. 1)—to achieve sustainable business development. The new strategy includes a drive to mainstream sustainability, create impact and ensure industry alignment.

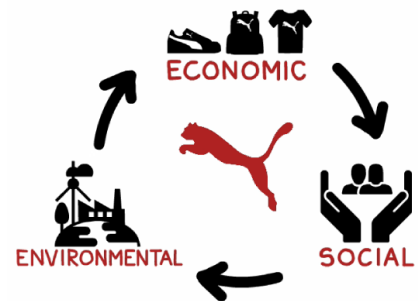


Figure 1: Three dimensions of PUMA’s Sustainability Strategy

### 1.3 PUMA’s 10FOR20 Sustainability Targets



Figure 2: PUMA 10FOR20 Sustainability Targets



The PUMA 10FOR20 Sustainability Targets encompass PUMA's goals for reducing our environmental impact and enhancing our sustainability, which will accelerate positive impact within ten (10) areas of focus (see Figure 2). From 2010 to 2015, PUMA primarily focused on environmental targets within our own direct sphere of influence. Going forward, our lifecycle approach means we have shifted focus to look deeper into our supply chain and balanced our efforts by adding three (3) new focus areas and related targets for 2020: Health and Safety, Human Rights and Governance.

A lifecycle approach starts from product design, e.g. emphasize sourcing significant volumes of raw materials from more sustainable sources. In addition, PUMA encourages its supply chain to adopt Industry Good Practice in manufacturing processes, with the goal of achieving Zero Discharge of Hazardous Chemicals by 2020.

Leading by example, PUMA's owned and operated entities are required to meet reduction targets that are as ambitious as those established for Suppliers.

In summary, we quantify the impacts of PUMA's business activities. Corporate environmental accounting is used to track progress towards the PUMA 10FOR20 Sustainability Targets; the PUMA Environmental Profit & Loss Account not only puts a price tag on nature's services but also provides a useful tool for identifying where the largest environmental impacts lie and how to minimize them (see Environmental Standards handbook).

## Sec. 2 – Compliance

### 2.1 Vendor Requirements

PUMA pursues and maintains contractual relationships only with those **Factories** and **Licensees** that have agreed to comply with the guidelines and directives set out in the PUMA Forever Faster Sustainability Handbooks. All PUMA **Factories** are contractually bound to pursue business relationships only with **Subcontractors** that are also in compliance with the Handbooks.

To support implementation, **Factories** shall put into effect Vendor Compliance Programs (i.e. internal policies and control mechanisms that find any potential noncompliance at an early stage and work toward remediation wherever needed). **Suppliers** shall ensure that all activities, contracts, agreements, accounting, etc., are compliant with the Handbooks.

Each **Supplier** shall appoint a Sustainability Compliance Officer ("SCO"). Ideally, the Officer shall speak English in addition to the relevant national language, as he/she will be the main point of contact between the Factory and the PUMA Sustainability Team. SCOs will promote the internal development of Vendor Compliance Programs and monitor their effectiveness to aid and ensure full compliance with the Handbooks.

The PUMA Sustainability Team is available for support in these matters. PUMA also supports capacity-building projects and conducts regular consultation with Factories to improve the level of compliance within these facilities.

### 2.2 Core Supplier Requirements

PUMA considers Core Suppliers as key partners. They are selected on a regular, periodic basis through the PUMA Vendor Rating System. This system is a supplier decision matrix that rates all Suppliers against strategic and operational parameters including the demonstration of Vendor management's commitment to a PUMA partnership as evidenced by investments and improvements in:

- Compliance and performance according to the Handbooks
- Quality and price
- Delivery performance
- Customer service

The PUMA Forever Faster Sustainability Handbooks detail the minimum requirements for all Core Suppliers and Core Supplier candidates, that are expected for compliance (including enhancement of workplace dialogue and conflict resolution) and management systems. Examples include:

- Certified Management systems (ISO 14001, ISO 9001, OSHAS 45001, and SA 8000)
- Participation in industry schemes such as the Sustainable Apparel Coalition HIGG Index and/or the ILO Better Work Program
- Following best practices outlined in the Handbooks
- Publishing of Supplier's own sustainability reports

Core Suppliers are expected to have medium-term plans (<12 months) and appropriate procedures in place for implementing strategic compliance and improving social performance in a continuous improvement cycle over time.

Core Suppliers must be able to track their performance against these plans using Social KPIs. They must also be able to report on these metrics to PUMA or to any other interested party such as the FLA on an annual basis, as a proactive step to mitigate social audit fatigue.

## 2.3 Monitoring Programs & Audit Instruments

The PUMA compliance monitoring program applies not only to manufacturers of finished goods (Tier 1 contract Factories), but also to key manufacturers of components and materials (Tier 2 or 3) within PUMA's supply chain (whether they may be subsidiaries, licensees, or joint ventures).

PUMA therefore regularly audits every Factory that manufactures PUMA products to verify its compliance with PUMA's policies and requirements, as well as with applicable national and local laws. A Compliance Audit is an important tool to ensure that the standards in PUMA's Sustainability Handbooks are observed at facilities in the PUMA supply chain.

Within manufacturing agreements, PUMA reserves the right to conduct a comprehensive audit at Factories.

## 2.4 Conflicting Requirements & Conflicts of Interest

Vendor compliance programs must guarantee compliance with all relevant local, national, and international legislation. In case of conflicting requirements, the regulation with stricter demands shall be followed.

Factories shall always make company decisions objectively, and free of any bias that could result in a conflict of interest. Examples of potential biases include:

- Business dealings (e.g. having relationships or investment with competitors)
- Social ties (e.g. friends or relatives influencing decisions)
- Other personal considerations (e.g. offering or accepting bribes; receiving gifts from Suppliers, Subcontractors etc.)

## 2.5 Limitations Regarding Antitrust

PUMA will not willingly violate any antitrust legislation by sharing commercial information or other information considered a violation by government authorities. However, we acknowledge that when Vendor compliance programs converge with other business-related activities (e.g. when Suppliers engage in production planning) the compliance-related data may imply some commercial information.

Thus, **Suppliers** are responsible for maintaining the confidentiality of commercial information; and must inform all relevant customers, including PUMA, of what information the Supplier shares with which parties.

## 2.6 Anti-Corruption

Around the world, corruption remains a considerable obstacle to sustainable economic and social development. It threatens the reputations of companies as well as those in their supply chains. Furthermore, new, and stringent anti-corruption regulations continue to emerge worldwide. As a signatory of UN Global Compact, PUMA is committed to uphold the ten (10) Global Compact principles in our operations and supply chain. This commitment includes fighting corruption. As part of this commitment, PUMA has added "Ethical Business Practices" to the PUMA Code of Conduct (see Appendix A). PUMA believes:

corruption impedes business growth, escalates costs and poses serious legal and reputational risks. It also raises transaction costs, undermines fair competition, and distorts sustainable development priorities. **For Factories**, corruption can also negatively impact value. It also poses financial, operational, and reputational risks, both for Factories and their stakeholders.

As part of PUMA's supply chain, **Factories** must implement robust anti-corruption measures and practices to protect against such risks for all potentially impacted parties, as follows:

- Conduct regular training to raise awareness on anti-corruption within their organizations
- Conduct an Anti-Bribery and Corruption Risk Assessment
- Develop an anti-corruption policy and program
- Implement a whistleblowing mechanism

## 2.7 Factory Training & Capacity Building Projects

PUMA supports the development of its Suppliers through capacity-building projects, which aim to improve social and labor compliance and performance. This can be achieved through trainings with NGOs, labor expert organizations, the PUMA team, or related industry initiatives.

These projects are considered investments toward improving working conditions and mitigating risk of negative publicity. They are targeted to create positive impact within or even beyond the Factory.

Suppliers may engage in these investments either jointly with PUMA or on their own. In some cases, such activities may be conducted by the Supplier as a form of corrective action arising from an audit. In these circumstances, PUMA shall be given regular updates on the progress and results in keeping with the Corrective Action Plan in place.

## 2.8 New Factory Applications

### ***Pre-Screening Visits***

Before a PUMA audit is conducted at a Factory seeking PUMA Supplier accreditation, sourcing partners usually conduct a pre-screening to get an overview of the Factory's compliance status. Based on an initial visit and investigation at the Factory, the sourcing partner may fill out an initial compliance report that can be used to prepare the full audit.

### ***Factory Self-Assessments***

In addition, before a Compliance Audit is scheduled, each Factory will be asked to complete a self-assessment questionnaire. This self-assessment questionnaire is similar in scope to the PUMA Compliance Audit. It also allows the Factory in question to compare its existing compliance system with PUMA's requirements and work on potential areas for improvement before the full audit is conducted.

## Sec. 3 – PUMA Compliance Audit

A PUMA Compliance Audit verifies that a Factory is following PUMA standards. Only PUMA and other qualified third-parties designated by PUMA ("Auditor(s)") may conduct verifiable monitoring activities. PUMA conducts audits with all potential Suppliers prior to the start of business relationship; Factories already authorized for production will be assessed at regular intervals (typically once per year).

PUMA reserves the right to conduct  
Compliance Audits without advance notice.

PUMA may contact **Core Suppliers** more frequently. However, not all assessments will be in the form of audits. For example, Core Suppliers may be visited to validate social and environmental KPIs and their entries on the SAC HIGG Index.

### AUDIT SCORE SUMMARY

- Only Factories with a passing grade of **A**, **B+** or **B-** will be authorized for PUMA production.
- Factories that receive a **C** rating will be given a specific timeframe (typically 4 months) to resolve noncompliance Critical Issues. Based on successful completion, the Factory will be upgraded to a **B** rating and production authorization will be given.
- Factories given a **D** rating are considered unprepared for compliance with the PUMA Standards. No production authorization shall be given to these Factories. **D**-rated Factories may apply for a new PUMA Compliance Audit only if they provide Credible Evidence that a higher compliance status has been permanently achieved (e.g. Factory has passed a Compliance Audit report by other brand and presents an externally verified completion of corrective action plan or similar).

### 3.1 Preliminary Briefing

The audit starts with a briefing to the **Factory Management** and representatives on the PUMA standards, as well as the audit process and its scope.

### 3.2 Facility Tour

After the briefing, inspection of all production areas and connected facilities commences. This may include materials storage areas, drinking stations, kitchen, dining room, medical clinic, dormitories, shower and toilet facilities, recreational areas, garbage staging areas and wastewater treatment facility, where applicable. In some cases, areas subject to inspection may be located outside of the Factory premises.

### 3.3 Document Review

**Factory Management** must make documents available for review, including but not limited to the following:

- Registration papers with appropriate government agencies
- Business and safety licenses and permits
- Company policies and procedures
- Employment records including contracts and age documentation
- Attendance records, payroll, and other related records
- Those related to health, safety, and environmental practices in the Factory

These documents serve as the primary evidence of the Factory's compliance performance.

Presentation of fake or manufactured documents during the audit is a serious violation of PUMA's Code of Conduct and is a Critical Issue.

If Factories present forged/falsified documents or practice other forms of non-transparency, the following consequences may result:

- The audit will be discontinued until Credible Evidence of transparency is obtained,
- The **Factory** will receive maximum audit rating penalties, and regardless of the final audit grade obtained,
- The **PUMA Sustainability Team** may recommend against a business relationship with the subject Factory or advise that PUMA discontinue a business relationship that has already been started.

### 3.4 Employee Interviews

We believe that interviews with worker or union representation are crucial for witnessing and understanding workers' perspectives on workplace standards and Factory atmosphere.

Interview of randomly selected employees is another important audit procedure. PUMA reserves the right to interview employees of Factories at its discretion. Auditors may conduct these in groups or individually, depending on the nature of the topic or information sought. Interviews may take place onsite, offsite, or remotely, depending on the circumstances during the audit. Onsite interviews may occur during actual work proceedings, or separately, as circumstances warrant.

PUMA prohibits the presence of members of the **Factory Management** or any office staff during interviews with workers or supervisors to avoid biased answers and coaching. In addition, Auditors will provide workers with PUMA contact details during their interviews.

Any form of management retaliation against interviewed workers is considered a Critical Issue and serious failure of compliance.

### 3.5 Summary Meeting

PUMA's Compliance Audits conclude with a summary meeting. Participants include **Factory top management** and other relevant parties, such as the Factory's own:

Sustainability Team  
HR  
OHS Expert  
Environmental Expert  
Worker or union representation

The meeting provides the **audit team** with the opportunity to:

- Communicate audit findings to relevant parties
- Highlight good practices
- Note areas that require improvement

This meeting also gives the **Factory Management** an opportunity to:

- React to audit findings
- Contest any they disagree with
- Present relevant proof to support their claims

It is also during the summary meeting that the audit team shall provide the Factory with suggestions for appropriate corrective actions to resolve any noncompliance. At this stage, Factories have ideally signed a corrective action plan (see Sec. 3.6).

### 3.6 Corrective Action Plan

The Corrective Action Plan documents the issues discovered during the audit, and outline plans for improvement. Both the audit team and the Factory representative sign the plan, before two (2) copies are made:

- **Factory Management** receives a copy, which it can use to formulate a plan for corrective actions and an implementation timetable.
- The other copy remains with the **Auditor team** and is kept on file for subsequent verification of corrective actions and remediation of identified issues.

Depending on the nature of the findings, Auditors may conduct verification of corrective actions either remotely (via desktop review) or in-person (via a follow-up visit); therewith, some immediate corrections may be taken into account prior to the finalization of the audit report, in accordance with remediation standards for the issue(s).

Factories have a maximum of **ten (10) days** after the audit to send the Corrective Action Plan to the Auditor (including already implemented action points) before the audit report and the Factory rating is finalized.

### 3.7 Audit Report

The Auditor prepares a report after completion of the audit. In line with PUMA's principle of transparency, the Factory will receive a printed or electronic copy of the audit report including space to provide feedback on the professionalism of the audit team. The Factory is free to share this audit report copy with other brand customers to reduce audit fatigue.

Please note: Noncompliance of Zero Tolerance issues (see Sec. 7.1) automatically results in a **failure rating**, regardless of the Factory's total points. Such Zero Tolerance issues include:

- Proven Case of Child Labor
- Noncompliance with Basic Government Licensing Regulation
- Payment Below Legal Minimum Wage

### 3.8 Additional Checks for Compliance

As a supplement to the formal audit, **PUMA associates** who visit any facility that manufactures PUMA products, regardless of their normal assignment, have permission to check for compliance with the Code of Conduct and the Handbooks as part of their regular duties.

*See next page.*



### 3.9 The PUMA Audit Rating System

PUMA's Audit Rating System is based on the ratings: **A**, **B+**, **B-**, **C** and **D**. The minimum passing grade is 85% (i.e. only **A**, **B+** and **B-** ratings are passable) and **C** and **D** are **failure** ratings. The ratings and corresponding grades are:

RATING	DEFINITION
<b>A</b>	<p><b>95% to 100%   PASSED – VERY GOOD RESULT</b></p> <p>Routine: Every 12 months</p> <ul style="list-style-type: none"> <li>The PUMA Forever Faster Sustainability Handbooks requirements have been met, and there are indications of strategic initiatives to maintain compliance with the PUMA Code of Conduct.</li> </ul>
<b>B+</b>	<p><b>90% to 94.99%   PASSED – GOOD RESULT</b></p> <p>Routine: Every 12 months</p> <ul style="list-style-type: none"> <li>Noncompliance issues are of minor importance and can be rectified immediately.</li> </ul>
<b>B-</b>	<p><b>85% to 89.99%   PASSED – SATISFACTORY RESULT – REMEDIATION NECESSARY</b></p> <p>Routine: Another audit is conducted within the next 12 months to check improvements. If there is still no progress, a warning letter is issued.</p> <ul style="list-style-type: none"> <li>Noncompliance issues are of minor importance, but there are a larger number of such issues found compared to a B+ rating.</li> </ul>
<b>C</b>	<p><b>75% to 84.99%   FAILED</b></p> <p>Routine: Every 4 months</p> <ul style="list-style-type: none"> <li>Serious or numerous noncompliance issues found during the audit that must be rectified immediately.</li> <li>For <b>existing Factories</b>, a follow up audit is conducted within four (4) months to check the remediation status of identified issues.</li> <li>For <b>Better Work ("BW") Factories</b>, PUMA will collaborate with both BW and Factories suggesting a specific timeframe to improve the issues based on the BW Improvement Plans.</li> <li>In the event a Zero Tolerance ("ZT") issue is identified, all Factories including BW Factories will follow PUMA's standard CAP timeframe (Depending on the issues found, between 8 weeks to 6 months) to improve the potential ZT issue (see Sec. 4.1).</li> <li>New Factories will not be provided with manufacturing authorization until the issues identified are rectified and an <b>A</b> or <b>B</b> rating is achieved.</li> </ul>
<b>D</b>	<p><b>74.99% and below   FAILED – FACTORY LACKS BASIC COMPLIANCE SYSTEMS</b></p> <ul style="list-style-type: none"> <li>Many serious violations or at least one (1) Zero Tolerance issue found (see Sec. 4.1).</li> <li>For an initial audit of potentially a <b>new Factory</b>, a business relationship will not be started. For an audit of an <b>existing Factory</b>, a phase-out plan will be started, leading to the eventual termination of the business relationship, i.e. Deactivation.</li> <li>For <b>Better Work ("BW") Factories</b>, PUMA will collaborate with both BW and Factories suggesting a specific timeframe to improve the issues based on the BW Improvement Plans.</li> <li>In the event a Zero Tolerance issue is identified, all Factories including BW Factories will follow PUMA's standard CAP timeframe (Depending on the issues found, between 8 weeks to 6 months) to improve the potential ZT issue (see Sec. 4.1).</li> </ul>

Figure 3: PUMA rating system

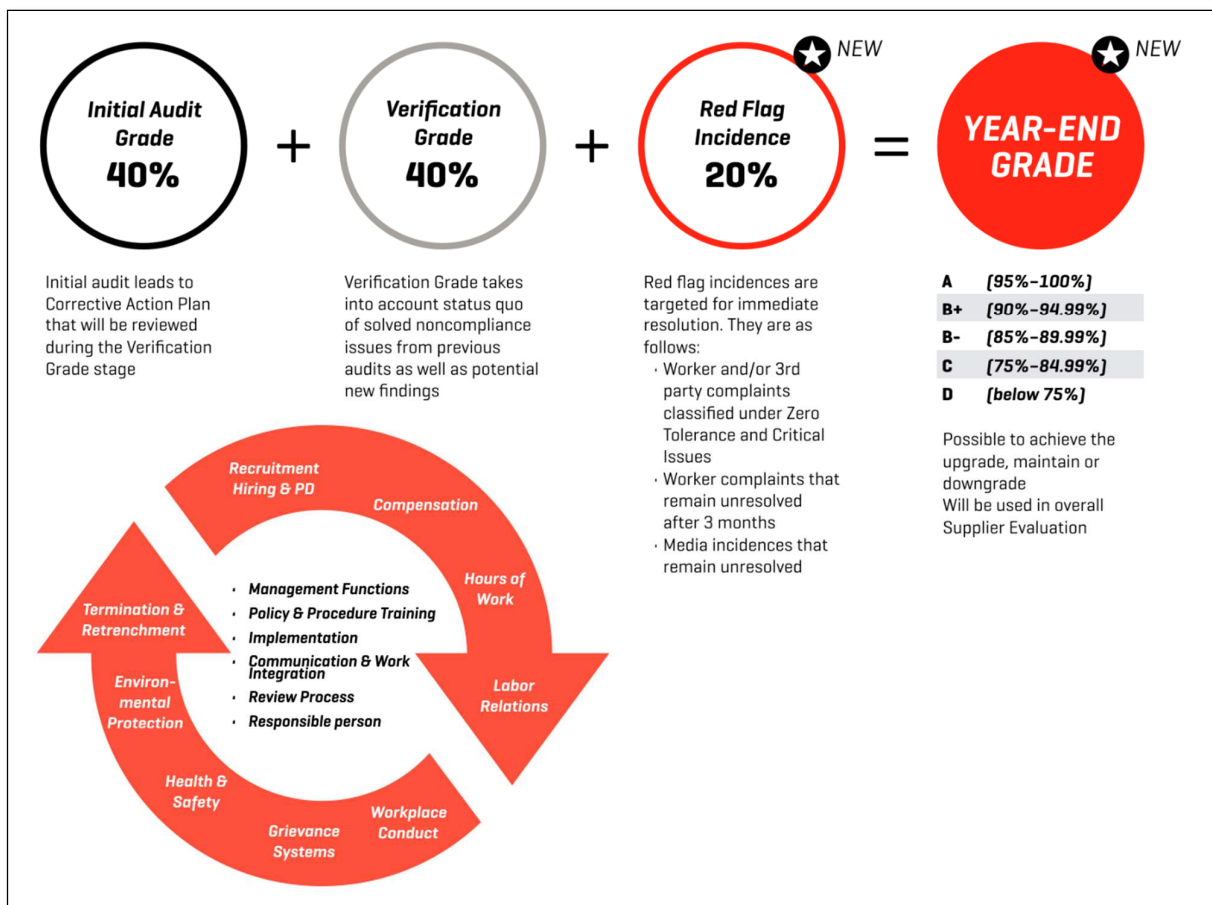
### 3.10 Environmental Audits

PUMA aims to move from individual brand environmental audits to the use of industry-wide tools, such as ZDHC and the Higg Index FEM 3.0. Once the FEM 3.0 is complete and deployed to PUMA's core supply chain, PUMA will require external verification on the self-assessment FEM modules. This external verification may be completed by PUMA's internal team, approved verifiers from other credited brands, or third-party organizations. Until the verification capability complete, PUMA will cover the Core Suppliers with external environmental audits conducted and shared by the other credited brands or organization such as LWG, Bluesign, Oeko-tex, etc., as well as with the internal verification conducted by PUMA's Sustainability Team.

### 3.11 Year-End Grade Guidance

In the past, the Year-End Grade that our Suppliers earned was synonymous with their last audit rating. However, any audit rating is always only a snapshot in time. Therefore, going forward, we have decided to consider the implementation status of Corrective Action Plans (Verification Grade), as well as the occurrence of any serious compliance violations after the last audit, irrespective on how those were brought to PUMA's attention (Red Flag Incidences).

Figure 4: New rating and scoring system structure



As audit scores only reflect the status of compliance at a point in time, the purpose of the year-end grade is to capture annual sustainability performance of Factories from a variety of data sources received throughout the operating year. The year-end grade is used to evaluate our Suppliers and will be published in the PUMA Annual Financial and Sustainability Reports on an aggregate level.

## Sec. 4 – Issues

PUMA's system for rating Code of Conduct compliance organizes instances of noncompliance into four categories: Zero Tolerance ("ZT") Issues; Critical ("CI") Issues; Major ("MI") Issues; and Regular ("RG") Issues. When an instance of noncompliance is found, the result is a reduction of the Factory's audit score according to the following schedule:

- A ZTI results in a 30-point reduction and automatic failure of the audit;
- A CI issue results in a 10-point reduction and a requirement that the Factory take immediate actions to remediate in order to maintain an opportunity to pass the audit;
- A MI issue results in a five-point reduction, where the Factory may still achieve a passing grade but must nonetheless take action to remediate; and
- An RG issue results in a one-point deduction. RG issues are considered non-urgent, and Factories are given reasonable timeframes in which to address them.

### 4.1 Zero Tolerance ("ZT") Issues

Zero Tolerance Issues are unacceptable violation of PUMA's Code of Conduct. If a ZT issue is discovered, the Factory will automatically fail its audit.

There is no possibility for the Supplier to produce any PUMA goods if ZT issues are present.

ZT issues are defined as follows:

NO.	ZT ISSUE	DEFINITION
1	<b><i>Noncompliance with Basic Government Licensing Regulation</i></b>	Missing or invalid business permit, or any missing operation/license/certification that is legally required from local authorities to operate the business.
2	<b><i>Payment Below Legal Minimum Wage</i></b> (see Social Handbook)	Failure of the Supplier to meet any of the following wage requirements: <ul style="list-style-type: none"> <li>• the legal minimum wage</li> <li>• the appropriate prevailing, industry, or sectorial minimum wage</li> <li>• the collectively bargained wage, either national or regional for the workers (including sub-contracted workers or whoever works in the Factory in any operation or service for the Factory)</li> </ul>
3	<b><i>Proven Case of Forced Labor</i></b> (see Social Handbook)	Any work or service performed by a worker which worker does not voluntarily agree to, and under the threat of any kind of penalty. All slavery practices, including human trafficking and bonded labor, prison labor, indentured labor, or other form of forced labor.
4	<b><i>Proven Case of Child Labor</i></b> (see Sec. Social Handbook)	A hiring age policy and/or practice that is not in compliance with the legal requirement and/ or the PUMA Code of Conduct (whichever is more stringent). The minimum age for employment under international standards and PUMA Code of Conduct is no less than 15 years, or the age at which compulsory schooling is completed, whichever is higher.

5	<b><i>Imminent Danger to Life</i></b>	Any combination of health and safety conditions in the Factory that present an imminent risk or danger to a worker's life, including unsound Factory building structures.
6	<b><i>Illegal Discharge of Waste Water or Hazardous Waste</i></b> (see Environmental Standards handbook)	Discharging untreated waste water into natural water bodies such as rivers and streams (or into the ground), as well as illegally disposing hazardous waste (such as chemicals or oil).

## 4.2 Critical ("CI") Issues

Critical Issues constitute a serious violation of PUMA's Code of Conduct. They will be treated with higher priority than other findings. Discovery of one (1) or more CIs may lead to a **failure** of the PUMA Compliance Audit or to a significant downgrade of the final audit grade. CI issues are defined as follows:

NO.	CI ISSUE	DEFINITION
1	<b><i>Unauthorized Sub-Contracting</i></b>	Any operation that Suppliers carry out in outsourced Factories, that has not been approved or audited by PUMA.
2	<b><i>Unregistered Workers</i></b> (see Social Handbook)	Employment contracts must be provided according to local legislation requirements. A working contract or equivalent local document shall be signed with all employees <b>before</b> the start of employment. One (1) copy of this contract shall be filed by the Factory and another shall be given to the worker.
3	<b><i>Social Insurance, Provision Deficiency</i></b> (see Social Handbook)	Any instance where the Factory does not make full contributions to the provident fund / social insurance / medical insurance / unemployment insurance / work injury insurance / maternity insurance / pension scheme(s) or other funds as required by law, taking into account both the employer and employee contributions where applicable. Any instance where the Factory does not keep proper records of payments of contributions to the authorities in relation to social security/medical/pension schemes and funds, with details on the contribution for each employee.
4	<b><i>Falsified Records [Statements, Practices &amp; Documentation]</i></b>	In all instances, a false representation of a matter of fact, whether by word, conduct or documentation. Examples include hiding records, illegal practices, (such as coaching workers for falsified answers in interviews, paying bribes or wherein documentation is found to be inconsistent with other records found at the facility, including verification from workers and other entities, such as civil society and government, as may be pertinent).
5	<b><i>Proven Case of Discrimination</i></b> (see Social Handbook)	Any instance where workers are subject to discrimination in employment, including: hiring, compensation, advancement, discipline, termination or retirement, on the basis of gender, race, color, religion, age, health, disability, sexual orientation, nationality, political opinion, social or ethnic origin, or position.
6	<b><i>Proven Case of Harassment or Abuse</i></b> (see Social Handbook)	Any systematic verbal, sexual, physical, or psychological abuse or harassment that may also be part of the Factory's management style e.g. physical punishment used to discipline workers (such as workers are regularly locked inside the Factory and unable to leave), widespread sexual harassment.

7	<b><i>Proven Case of Reprisal or Retaliation Against Workers</i></b>	Penalizing workers without just cause, negative consequences or other inappropriate behavior by the Factory towards workers, such as threatening of the same e.g. employee is threatened to be penalized after he/she elects to not perform overtime or hazardous work.
8	<b><i>Proven Case of No Freedom of Association</i></b> (see Social Handbook)	Factories that do not recognize or respect workers' rights to Freedom of Association and/or Collective Bargaining.
9	<b><i>Sub-license Mission [Environment Permit, Fire Safety Permit, etc.]</i></b>	Missing or invalid fire safety, building safety or environmental license/permit/certification, as legally required by local authorities.
10	<b><i>No testing for Restricted Substances</i></b>	Lack of a procedure to regularly test incoming materials for restricted substances (as per the Restricted Substances List; "RSL").
11	<b><i>Missing/Inadequate Professional Risk Assessment</i></b> (See Occupational Health & Safety Handbook)	This risk assessment should include: general health and safety issues in production processes and devices; fire and electrical safety; mechanical safety; chemical hazards; emissions hazards (including for radiation); confined space hazards; tripping hazards; health risks to vulnerable employees; requirements for frequency of exposure; structure safety; monitoring and prevention; safety control procedures where extreme temperatures may affect workers; fall protection hazards, and other relevant factors.

### 4.3 Major ("MI") Issues

Major Issues are crucial violations of PUMA's Code of Conduct. **Suppliers** are expected to remediate issues with immediate action or within a reasonable timeframe. We define MI issues as follows:

NO.	MI ISSUE	DEFINITION
1	<b><i>Overall Special Performance and Management Commitment Violation</i></b>	The Factory does not collaborate with PUMA or does not implement/complete/clear all ZT, CI, and MI issues from earlier PUMA audits. Factory does not adopt policies/procedures and conditions of employment that respect workers' rights, during the tenure of their employment. Any violation of management's overall commitment, such as rules, policies, or practices.
2	<b><i>Insufficient Overtime Payment</i></b> (see Social Handbook)	The Factory does not pay the correct, legally defined rates for overtime, rest days, and holidays.
3	<b><i>Occurrence of Delayed Payment</i></b>	The Factory has delayed the release payments of wages within the last twelve months in more than two (2) instances.
4	<b><i>Proven Case of Homeworking</i></b>	Evidence of <b>homeworkers</b> or failure to declare subcontracted workers hired by the Factory. The use of homework is not authorized by PUMA. Homework shall not be confused with <b>micro-enterprises</b> with a legitimate commercial identity. Such micro-enterprises must be evaluated for presence of Critical Issues like child labor (see CI issues). In proven cases of homework, <b>Suppliers</b> will be required to move production processes to legitimate commercial enterprises and compensate the contracted parties either by arranging legitimate employment within their own or other commercial enterprises.

5	<b>Regular Working Hours Violation</b> (see Social Handbook)	The Factory does not comply with regular daily/weekly/monthly working hours or has incomplete or contradictory records on working hours.
6	<b>Excessive Overtime Violation</b> (see Social Handbook)	The Factory does not follow the relevant local law and PUMA's policy regarding overtime work.
7	<b>Vulnerable Workers Violation</b> (see Social Handbook)	The Factory does not meet the basic legal requirements regarding working hours, for pregnant/nursing employees and other special vulnerable workers (e.g. young and senior workers), such as shortened work hours or special breaks.
8	<b>Complaints/Grievance Procedure - Worker Communication Violation</b> (see Social Handbook)	The Factory lacks an effective complaints/grievance process to confidentially gather and address worker allegations, in a manner that protects the complainant against any form of reprisal/retaliation.
9	<b>Failure to Complete Emergency Reporting to PUMA</b>	Factories shall record accidents that result in work stoppage properly and follow PUMA's "Emergency Reporting Protocol" when reporting accidents, and ensure that reports are submitted in a timely manner.
10	<b>Welfare Facilities &amp; Amenities Violation</b> (see Social Handbook)	The Factory is not in compliance with local legal requirements for the provision of facilities such as dormitories, canteens/kitchens, childcare/crèche, lactation area and/or equipment, etc.
11	<b>Missing MRSL Procedure / Using Banned Chemicals</b>	There is no procedure in place for ensuring compliance with the ZDHC Manufacturing Restricted Substances List (MRSL) for eliminating banned chemicals

#### 4.4 Regular ("RG") Issues

Regular Issues are considered minor violations of PUMA's Code of Conduct. They are treated with lower priority than other issues discovered during the audit. The timeframe for resolving each RI depends on nature of the issues. The PUMA auditor or External Monitor shall provide guidance on the correction and implementation of each issue with Factory Management during the audit summary meeting (see Sec. 3.5).

*See next page.*



## Sec. 5 – PUMA’s Environmental Policy

We recognize that protecting our environment is an ongoing process and challenge. In our aim to improve the sustainability of PUMA’s business activities, by initiating more sustainability-related activities, we strive to comply with local and international environmental legislations, be transparent with our stakeholders about the Environmental Impact of our work, and continuously improve our performance.

Our Environmental Policy applies to all of our branches and employees worldwide, and we request that our licensees, joint venture partners, suppliers and service providers adhere to the same principles.

Our Environmental Policy is comprised of five (5) key aims as well as our Environmental Impact Targets:

1. **Ensure compliance to all legal regulations and set standards that exceed minimum legal requirements.** Enforcing the highest environmental standards, both at PUMA and through our business partner levels, benefits PUMA economically by eliminating and/or mitigating risk associated with illegal noncompliance; pre-empting new regulations and maintaining a good practice position to generate positive momentum on environmental issues within the company and our stakeholders. This includes a due diligence process for mergers and acquisitions as well as the onboarding of new suppliers.
2. **Fully integrate PUMA’s Environmental Policy into the Corporate Strategy and align with key stakeholders.** Sustainability goals cannot be achieved by an individual department or brand alone, success in this area requires coordination among all individuals and stakeholders involved to serve a common goal.
3. **Find ‘win-win’ solutions that serve both financial and environmental interests.** PUMA believes that meeting our reduction targets for the consumption and use of energy and water, as well as for the emission of CO<sub>2</sub> and waste, will generate financial savings in the long term. We also believe that today’s consumers are interested in buying more sustainable products, which have been made with environmentally preferred materials. Aligning our environmental strategy with goals for long-term growth will enhance staff and consumer loyalty to our brand and enhance our competitive advantage, all while reducing PUMA’s impact on the environment.
4. **Communicate PUMA’s Environmental Policy to different levels of our organization and main stakeholders.** Once we establish these standards, we aim to effectively communicate them to all PUMA employees to raise awareness and enlist support in implementing them within all divisions of PUMA, in our business partners and consumers when buying and using our products.
5. **Strive for continuous improvement.** PUMA strives to undertake more sustainability activities and produce our products in a more sustainable way by continuously monitoring our performance against established targets.

### 6. **Environmental Policy Impact Targets**

We have established specific targets (and enforceable actions) for minimizing our Environmental Impact. These include the following:

#### GENERAL

- Support, actively, industry initiatives that promote a more sustainable apparel and footwear industry
- Meet or exceed all requirements in relevant environmental legislation
- Track, calculate and reduce the Environmental Impact generated by our activities

#### CO<sub>2</sub> EMISSIONS & AIR POLLUTION

- Achieve our Science Based Climate Action target through:
  - Optimizing the efficient use of energy
  - Switching fully to renewable energy sources for all PUMA entities, wherever possible
  - Reducing GHG-Emissions within our logistics network

- Supporting our suppliers in reducing their energy consumption
- Phasing out coal fired boilers in our supply chain and promoting the use of renewable energy
- Increasing the use of low carbon materials

#### **WATER USE, WATER POLLUTION, & WASTEWATER**

- Conserve, reuse, and recycle water
- Ensure good practice waste water and air emission treatment systems
- Transparently report about our suppliers' waste water quality

#### **MINIMIZING WASTE AND PROMOTING A CIRCULAR ECONOMY**

- Minimize waste and promote reuse and recycling at our own entities
- Help our suppliers to minimize their waste to landfill and expand recycling efforts
- Increase the usage of recycled raw materials such as polyester and cotton
- Engage in industry initiatives on design for circularity and research for circular business models.

#### **CHEMICALS**

- Ensure good chemical management within PUMA and our supply chain
- Full product safety through the exclusive use of materials tested according to international standards
- Zero Discharge of Hazardous Chemicals

#### **PLASTIC AND THE OCEANS**

- Eliminate single use plastics from our offices
- Eliminate plastic bags from our stores
- Increase the use of recycled polyester and other recycled polymers within our product ranges
- Support research on microfiber release and biodegradable polymers

#### **BIODIVERSITY**

- Ensure minimal impact on Biodiversity by using raw materials from sustainably managed sources, specifically cotton, leather, viscose as well as paper & cardboard
- Zero use of exotic skins or hides

#### **MORE SUSTAINABLE PRODUCTS**

- Promote the usage of certified and/or environmentally preferred raw materials at scale
- Communicate our sustainability efforts on product level to inspire consumers and ensure they can make informed purchasing decisions.

## 5.1 Sustainable Consumption of Natural Resources

PUMA encourages its employees and Suppliers to optimize their use of natural resources (including energy, water, and raw materials) to improve the sustainability of their supply chains. Over the last several years, PUMA has initiated **capacity-building projects to help stakeholders achieve this aim**. These projects have included hosting trainings, conducting onsite assessments, introducing cleaner production technologies, and consulting with experts on other improvement methods. Examples of past projects include CONSERV (2011-2013), [SAVE](#) (2013-2015), [Vietnam Improvement Project or "VIP"](#) (2017), PaCT, and work with various operations with high environmental impact in the PUMA supply chain including those of Tier 1 suppliers, key fabric mills, and leather tanneries.

Learn more about our capacity-building projects online at our [website](#).

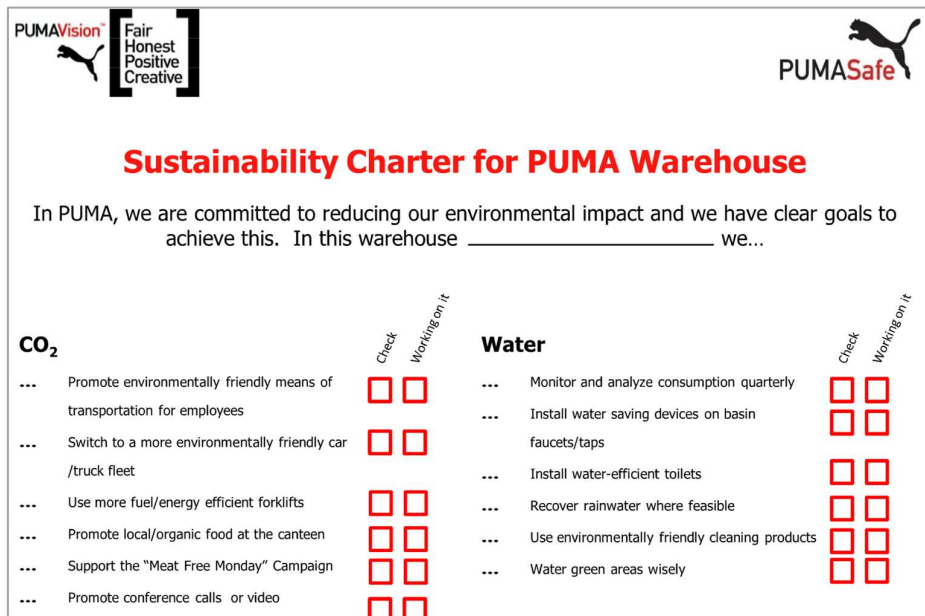
## 5.2 Reduction & Offsetting of Carbon Emission

PUMA is an active participant of the Carbon Disclosure Project and recognizes the importance of limiting global warming to two degrees Celsius. PUMA commits to contributing its fair share to achieve this two-degree goal.

Because energy consumption is directly linked to the carbon emissions, which accelerates global warming, PUMA encourages Suppliers to use renewable energy sources where possible to curb their own carbon emissions and footprints.

## 5.3 Sustainability Charter for Own Entities & Suppliers

PUMA's Sustainability Team has also created Sustainability Charters that provide our offices, stores, warehouses, and factories with a tool for identifying easy improvements that can be made toward environmental protection. The Factory Management at each of these locations are encouraged to complete the Charter and display a signed copy at the building's entrance or reception, indicating to all employees which actions have already been taken and which are in progress.



**PUMAVision** Fair Honest Positive Creative **PUMASafe**

### Sustainability Charter for PUMA Warehouse

In PUMA, we are committed to reducing our environmental impact and we have clear goals to achieve this. In this warehouse \_\_\_\_\_ we...

CO <sub>2</sub>		Check	Working on it	Water		Check	Working on it
...	Promote environmentally friendly means of transportation for employees	<input type="checkbox"/>	<input type="checkbox"/>	...	Monitor and analyze consumption quarterly	<input type="checkbox"/>	<input type="checkbox"/>
...	Switch to a more environmentally friendly car /truck fleet	<input type="checkbox"/>	<input type="checkbox"/>	...	Install water saving devices on basin faucets/taps	<input type="checkbox"/>	<input type="checkbox"/>
...	Use more fuel/energy efficient forklifts	<input type="checkbox"/>	<input type="checkbox"/>	...	Install water-efficient toilets	<input type="checkbox"/>	<input type="checkbox"/>
...	Promote local/organic food at the canteen	<input type="checkbox"/>	<input type="checkbox"/>	...	Recover rainwater where feasible	<input type="checkbox"/>	<input type="checkbox"/>
...	Support the "Meat Free Monday" Campaign	<input type="checkbox"/>	<input type="checkbox"/>	...	Use environmentally friendly cleaning products	<input type="checkbox"/>	<input type="checkbox"/>
...	Promote conference calls or video	<input type="checkbox"/>	<input type="checkbox"/>	...	Water green areas wisely	<input type="checkbox"/>	<input type="checkbox"/>

Figure 5: Excerpt from Sustainability Charter for Offices (see Appendix D for full charter)

## Sec. 6 – Environmental Data Collection and Reporting

PUMA uses Enablon, the environmental software tool, for the regular collection of environmental performance data from both owned entities and Core Suppliers. Data collection occurs annually and covers at least 80% of PUMA's sourcing business volume.

Each PUMA entity is accountable for its environmental performance. All PUMA offices, stores and warehouses are therefore required to regularly complete web-based questionnaires on the usage of energy, water, and paper, as well as the creation of waste. This data also forms the basis for PUMA's internal management system, as well as the information presented in each Annual Report.

Given that the majority of PUMA's overall environmental footprint is created in the supply chain, PUMA includes all major Tier 1 and exemplary material Suppliers into the regular data collection process. PUMA then uses this data to establish environmental key performance indicators ("E-KPIs") that align with production volume for each supplier,

helping us track supplier improvements on energy and resource consumption, as well as the creation of emissions and waste.

For more information on PUMA's data collection procedure, please contact the PUMA Sustainability Team (see Appendix B).

## 6.1 Global Reporting Initiative ("GRI") Sustainability Reporting

PUMA has been publicly reporting its sustainability performance in accordance with the guidelines of the Global Reporting Initiative ("GRI") since 2004. Since 2010, PUMA's Sustainability and Financial Reporting have been integrated into the consolidated PUMA Annual and Sustainability report.

PUMA continues to encourage its Core Suppliers to publish sustainability reports that adhere to GRI guidelines to further transparent sustainability reporting across the supply chain.

Please visit the PUMA website for a copy of our [Annual Report](#).

## 6.2 Reporting of Environmental Key Performance Indicators ("E-KPIs")

PUMA has established Environmental Key Performance Indicators to measure our progress and manage PUMA's environmental footprint. These E-KPIs track use of energy and water, as well as the generation of CO<sub>2</sub> and waste per unit of products, square meter of buildings used, financial turnover or per staff full time equivalent ("FTE").

PUMA and PUMA Suppliers use the online platform Enablon for regular data collection from Core Suppliers, and to enable monitoring, tracking, and publishing of the E-KPI performance in PUMA's Annual Report. See figure below for PUMA's 2017 E-KPI performance compared to previous years:

**T.12 PUMA'S ENVIRONMENTAL IMPACT (E-KPI)\* (in € million)**

	2017	2016	2015	Consumption 2017/ Turnover [Unit/€ million]	Consumption 2016/ Turnover [Unit/€ million]	Consumption 2015/ Turnover [Unit/€ million]	Variation 2016/2017 [in%]	Variation 2015/2016 [in%]
<b>Turnover</b>	<b>4,136</b>	<b>3,627</b>	<b>3,387</b>	-	-	-	-	-
Energy consumption [MWh]	83,794	81,508	81,620	20.3	22.5	24.1	-9.9	-6.9
Electricity consumption [MWh]	64,119	63,339	59,888	15.5	17.5	17.7	-11.2	-1.4
Electricity consumption from renewable tariff [MWh]	11,611	12,049	11,360	2.8	3.3	3.4	-15.5	-1.1
Percentage renewable electricity consumption	18%	19%	19%	-	-	-	-	-
Energy consumption from PUMA production [MWh] *	194,881	180,041	149,709	47.1	49.6	44.2	-5.1	12.1
Waste [T]	5,293	5,302	5,007	1.3	1.5	1.5	-12.5	-1.3
Recycled waste [T]	3,419	3,275	2,949	0.8	0.9	0.9	-8.5	3.5
Percentage recycled waste	65%	62%	59%	-	-	-	-	-
Waste from PUMA production [T] *	14,686	12,257	11,433	3.6	3.4	3.4	5.1	-0.1
Paper and cardboard consumption [T] **	2,756	3,337	3,465	0.7	0.9	1.0	-27.6	-10.2
Certified or recycled paper and cardboard consumption [T]	2,025	2,512	2,498	0.5	0.7	0.7	-29.3	-6.2
Percentage certified or recycled paper consumption	74%	75%	72%	-	-	-	-	-
Paper and cardboard consumption from PUMA production [T] *	14,129	15,269	13,357	3.4	4.2	3.9	-18.9	6.6
Water [m³]	106,397	107,025	104,221	25.7	29.6	30.8	-13.2	-3.9
Water from PUMA production [thous. m³] *	2,149	2,145	1,774	520	592	524	-12.2	12.7

\* PUMA production covers Tier 1 suppliers  
 \*\* Including paper bags, direct and indirect paper consumption and cardboard

Figure 6: PUMA's E-KPI Performance, 2017

For more information about the results of the PUMA E-KPI data collection, please refer to PUMA's [Annual Financial and Sustainability Report](#).

## 6.3 Institute of Public and Environmental Affairs ("IPE")

The Institute of Public and Environmental Affairs ("IPE") is a registered non-profit organization based in Beijing, and suppliers based in China must adhere to their reporting policies. Since its establishment in May 2006, the IPE has developed a database to monitor corporate environmental performance and pollution. The IPE's aim is to expand environmental information disclosure and allow communities that harbor manufacturing facilities to fully understand the hazards and risks in the surrounding environment, promoting enhanced public participation in environmental governance.

Every year, IPE publishes the CITI report with the Natural Resources Defense Council ("NRDC") to evaluate more than 100 brands' local annual environmental performance and update factories' environmental violation records (via public

resource) in Mainland China. IPE has also developed the Pollutant Release and Transfer Register ("PRTR") and Detox data platforms in partnership with Greenpeace, to publicly disclose Detox data and other environmental performance data from Factories. PUMA therefore requires those suppliers based in Mainland China to adhere to the following reporting policies:

- Track their own environmental performance on IPE's platform (via website or app). In the case of any violation, the Factory shall communicate with IPE to report follow-up actions
- Publish their environmental KPIs and other relevant data on IPE's RPTR platform as requested by PUMA

Global suppliers are required to report detox information on IPE's detox platform as requested by PUMA.

For more information about IPE and its CITI index please visit the IPE [website](#).

## 6.4 Corporate Environment Profit & Loss Accounting

### RECOGNIZING THE VALUE OF ECOSERVICES

All business operations and supply chains depend on natural resources for ecosystem services such as fresh water, clean air, healthy biodiversity, and productive land.

*At PUMA, we believe that healthy ecosystems are critical to the future of our business. We also recognize that we must be ethical, accountable, and responsible to our environment as we conduct our business activities.*

We recognize that we must account for the **cost of natural resources** in our day-to-day business decisions. The establishment of PUMA's Environmental Profit and Loss Account ("EP&L") is our first attempt at measuring the immense value these services provide to a business, as well as the **true costs or impacts on nature by a business**.

Toward the end of 2009, we embarked on a journey to develop an enterprise and supply chain-wide view of our Environmental Impact in monetary terms. The PUMA EP&L measures and values both reductions in ecosystem services and increases in Environmental Impact due to PUMA's operational and supply chain activities.

- **Definition:** An Environmental Profit & Loss Account provides companies with a means of placing monetary value on the Environmental Impact along the entire supply chain of their business.
- **Profit:** Activities that benefit the environment.
- **Loss:** Activities that have an adverse Environmental Impact.
- **Environmental Impact:** A change in the makeup, functioning, or appearance of the environment. Examples include:
  - Greenhouse gases ("GHGs"), which contribute to climate change, are associated with a range of Environmental Impacts such as reducing crop yields, changes in water availability and increases in extreme weather.
  - Waste disposal, including its leachate, can affect water courses, permeate local areas with unpleasant dust, noise, and odor, and create GHG emissions.

### TRANSPARENCY & COMMUNICATION

Many audiences, both in our business and among our suppliers, are unfamiliar with the language of sustainability and may struggle to put figures such as 'metric tons of GHG emissions' and 'cubic meters of water' into context. As such, we chose to convert our Environmental Impact into monetary terms to make them digestible and meaningful to a wider audience.

Our EP&L will help us explore answers to the following:

- How can we help our employees, shareholders and suppliers understand the magnitude and importance of our impact on the environment?



- How can everyone in the business grasp the significance of the amount of CO<sub>2</sub> released, the impacts of land conversion required to provide raw materials, or the volume of water consumed? How can this be factored into day-to-day decision making?
- How do our different Environmental Impacts compare to one another? Which are most significant?
- Where in our supply chain shall we focus our resources to reduce our overall impact?
- How can we help others understand the challenge of reducing our Environmental Impact, and the work we are doing to manage them?

By reporting the results of the EP&L, PUMA makes transparent the true scale of our Environmental Impact and enables clearer communication about their implications on people's lives, jobs, and environment. We believe this provides a basis for more meaningful, evidence-based engagement with our stakeholders.

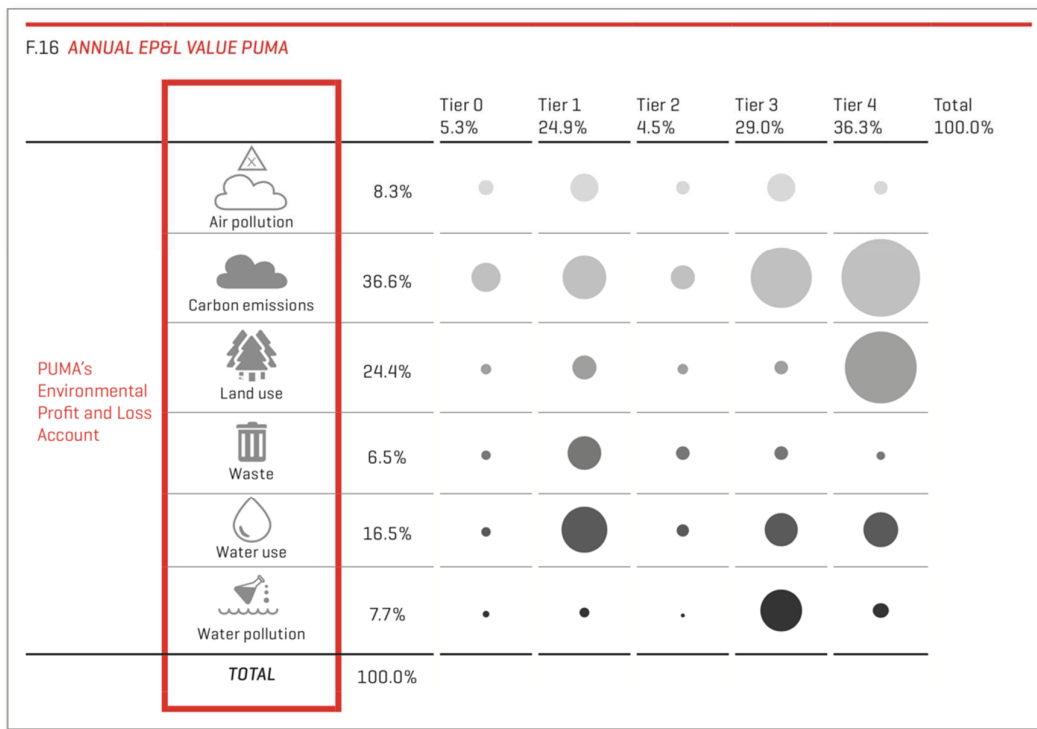


Figure 7: PUMA's Environmental Profit and Loss Account, 2016

### INFORMED BUSINESS DECISION-MAKING

By placing a monetary value on our Environmental Impact with our EP&L, we are able to clearly quantify the impact of our activities, illuminate areas for improvement, and provide a roadmap for modes of reducing our footprint.

Ultimately, the EP&L will enable us to make better, more informed business decisions that account for our Environmental Impact alongside more traditional financial and operational considerations.

### SIGNIFICANT SOURCES OF ENVIRONMENTAL COSTS ARE IN THE SUPPLY CHAIN

The results of our EP&L clearly show that the majority of the Environmental Impact of our work originates in our supply chain, particularly during the raw material stage (see Figure 6). While PUMA has also published an EP&L for specific selected products and aims to release a corporate-level EP&L regularly going forward, the early results of this analysis clearly reinforce the need to focus on the both processing (Tier 3) and raw material (Tier 4) stages of the supply chain (as indicated in Figure 9).

**Tier 3** and **Tier 4** represent **65%** of all calculated costs to the environment (29% and 36%, respectively), while PUMA's own operations (including transport of products from country of manufacture to selling markets) added up to only **5%** in 2017, representing a reduction from the year prior.

Please visit the PUMA website for the full report on PUMA's [EP&L](#).

**Illustration of processes and impacts through PUMA's supply chain**



Figure 8: PUMA Supply Chain Map used for the EP&L

## Sec. 7– Industry Collaboration

PUMA has placed a large emphasis on industry collaboration and, where possible, supporting existing industry initiatives. Collaboration with our peers is paramount to streamline the sustainability efforts of our industry. We believe that encouraging alignment of individual industry organizations, e.g. converging use of tools and processes, makes the overall system more efficient. Examples of actions PUMA has taken are:

- Harmonized the PUMA Compliance Audit tool with the methodology of FLA and Better Work;
- Supported a convergence of various existing supplier social compliance assessments under the umbrella of the Social and Labor Convergence Project ("SLCP"), and
- Introduced relevant social key performance indicators ("KPIs") as part of an industrywide

framework on social standards that measure performance in addition to compliance

The results of these and similar coordinated efforts potentially free up resources currently spent by brands and Suppliers alike. Examples of what we believe are redundant processes include:

- Multiple audits for the same Factory
- Multiple test reports for hazardous chemicals on the same materials and effluents

- Multiple capacity-building and training projects focusing on similar subjects and Suppliers

By de-duplicating efforts across the industry, through Brand Collaboration we aim to use our own resources more effectively. This, in turn, achieves stable, long-term positive impact on our direct and indirect employees, as well as the Factories, communities and environment in which we operate. Our new “10FOR20” targets will guide our work in this respect.

## 7.1 Sustainable Apparel Coalition

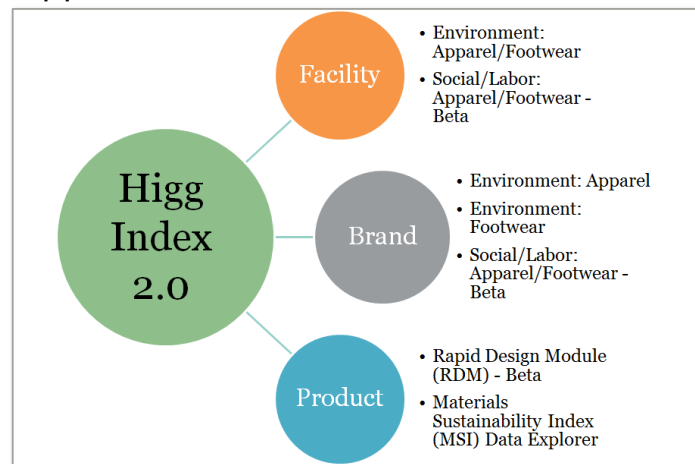


Figure 9: HIGG Index 2.0 suite of tools

The Sustainable Apparel Coalition (“SAC”), an industrywide group of over 60 leading apparel and footwear brands, retailers, suppliers, nonprofits, and NGOs, all working to reduce the environmental and social impacts of apparel and footwear products around the world. Through multi-stakeholder engagement, the Coalition seeks to lead the industry toward a shared vision of sustainability, built upon a common approach for measuring and evaluating the sustainability performance of apparel and footwear products. This analysis seeks to illuminate priorities for action alongside opportunities for technological innovation.

PUMA became an active member of the Sustainable Apparel Coalition in 2011 and remains actively engaged in working groups within the Coalition, including those focused on environmental and social issues. Active membership in the SAC gives PUMA and PUMA’s suppliers the opportunity to collaborate with industry peers toward the achievement of common goals. These goals are related to creating environmentally friendly products, improving production processes and enhancing working standards within our global supply chains.

In 2012, the SAC launched the HIGG Index. And, in 2017, the Sustainable Apparel Coalition launched the HIGG Index FEM (Facility Environmental Module) 3.0 with plans to roll it out to all suppliers in 2018. The HIGG Index FEM 3.0 is an indicator-based sustainability assessment tool that measures a facility, brand, or product’s Environmental Impact. PUMA requires core suppliers in Tiers 1 and 2 to complete the self-assessment modules available from the Index for their environmental performance. Completion of these modules will help prepare suppliers for future PUMA product scoring and serve as a valuable source of information on sustainability trends and best practices. Core suppliers shall also conduct external verification for the module once the service is available. The following is a visual representation of the HIGG Index FEM 3.0:

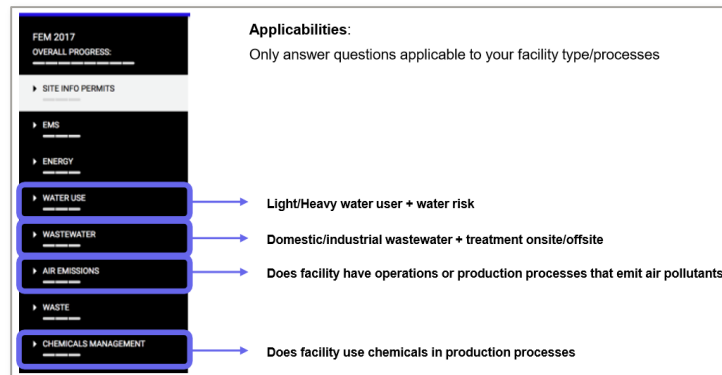


Figure 10: SAC Higg Index FEM 3.0

## 7.2 Zero Discharge of Hazardous Chemicals (“ZDHC”)

“Zero discharge” is defined as eliminating the discharges of all hazardous chemicals<sup>1</sup> from the whole lifecycle and all production procedures that are associated with the making and using of PUMA products.

PUMA recognizes the urgent need to reduce and eliminate industrial releases of all hazardous and harmful chemicals and in 2011, collaborated with a group of major apparel and footwear brands and retailers to create a shared commitment to help lead the industry towards zero discharge of hazardous chemicals by 2020. PUMA and other participants published the release of a joint roadmap towards zero discharge within the supply chain. The roadmap is highly ambitious and sets a new standard of environmental performance for the global apparel and footwear industry. It includes specific commitments and timelines for realizing this shared goal.

The roadmap toward ZDHC includes a collaboration with ZDHC-member brands, who together helped the coalition to develop [Manufacturing Restricted Substances List \(“MRSL”\)](#) for the apparel and footwear industry. This list addresses not only hazardous substances that could be present in finished products, but also those that could be used and discharged into the environment during manufacturing processes. The MRSL assists industry leaders and their supply chains in aligning their approach to the control of hazardous substances used to process textile and trim materials in the apparel and footwear industries.

In addition to creating the MRSL, the ZDHC has developed a database, called Gateway, where suppliers may upload their wastewater test results and chemical inventory lists. This information can be published as required, and reports can be generated showing the ZDHC MRSL compliance level of Suppliers. PUMA will use the ZDHC Gateway to monitor supply chain chemical management once the function of Gateway is completed.

*For more information about ZDHC, the Governance Policies and Procedures, and MRSL please refer to PUMA Sustainability's Chemicals Handbook. More information is also available at the Roadmap to Zero [website](#).*

<sup>1</sup> The hazardous chemicals refer to ZDHC MRSL-listed chemicals.

## Sec. 8 – Declarations & Commitments

### 8.1 Zero Discharge of Hazardous Chemicals (“ZDHC”)

- In keeping with our emphasis on prevention and the precautionary principle, as well as our commitment to the United Nations Sustainable Development Goals, PUMA is committed to ‘zero discharge’ by 2020.
- PUMA has adopted the ZDHC MRSL and expects all its direct and indirect suppliers to implement a conformance process accordingly.
- PUMA has used the ZDHC environmental audit protocol since 2014 to guide this work and audit select material Suppliers. In order to avoid duplication of efforts and audit fatigue, PUMA joined forces with other sporting goods brands to share our own audit reports and accept those audit reports completed by these partner brands, as well as by the Leather Working Group and Bluesign® (see Sec. 8.2.2).
- Suppliers without wet processing or other environmentally-intensive processes will instead be routinely audited by PUMA’s general compliance audit protocol.

### 8.2 Commitments to Utilize More Sustainable Materials

#### 8.2.1 BCI

*The Better Cotton Initiative (“BCI”) is a not-for-profit organization stewarding the global standards for ‘Better Cotton,’ and bringing together cotton’s complex supply chain, from the farmers to the retailers. BCI “exists to make global cotton production better for the people who produce it; better for the environment it grows in; and better for the sector’s future, by developing Better Cotton as a sustainable mainstream commodity.”*

PUMA has been a member of the BCI since January 2016. In line with PUMA’s sustainability targets, we aim to source 90% of our cotton from BCI by 2020, and increase BCI fiber volume to 50% by the same year. In the meantime, we encourage all of our Core Suppliers of fabric to become BCI members.

For further information, please visit BCI’s [website](#).

#### 8.2.2 Bluesign®

*The Bluesign® system seeks to be a “solution for sustainable textile production” by guaranteeing that a safely manufactured product has been manufactured using sustainable materials and a clean process. Bluesign® partners within the textile industry manage the natural resources used in their process soundly and responsibly to reduce water and air emissions, improve wastewater treatment and generally reduce their ecological footprint. With this integrated approach, the Bluesign® system unites all partners of the textile industry in working toward environmentally friendly, sustainable textile production worldwide.*

PUMA became a Bluesign® system partner in 2014. PUMA believes in the approach of an input-stream management system and highly encourages all Suppliers to become Bluesign® system partners.

Within our strategy to focus on more sustainable raw materials, we have set the target of increasing our use of Bluesign®- and Oeko-tex-approved polyester materials in our product range to 90% by 2020.

For further information on Bluesign®, please visit its [website](#).

#### 8.2.3 Oeko-tex

The STANDARD 100 by OEKO-TEX® is a worldwide consistent, independent testing and certification system for raw, semi-finished, and finished textile products at all processing levels, as well as accessory materials used. The OEKO-TEX® Standard 100 contributes to high and effective product safety from a consumer’s point of view.

For more information on Oeko-tex, please visit its [website](#).

#### 8.2.4 Leather Working Group

*The Leather Working Group ("LWG") was formed in April 2005 to promote sustainable and appropriate environmental stewardship practices within the leather industry. The LWG created a set of protocols to assess the compliance and environmental stewardship practices of leather manufacturers. The LWG certification for tanneries is an award of a bronze, silver, and gold rating, as well as a classification (A, B, etc.) for leather traceability. This multi-stakeholder initiative aims to develop and support a procedure for assessing the environmental compliance of potential tanneries, and to promote sustainable environmental business within the tanning industry.*

PUMA emphasized its commitment to sourcing sustainably produced leather by setting a target of sourcing 90% of its leather from LWG-certified tanneries, which the company achieved in 2015. PUMA continues to source leather almost exclusively from LWG-certified tanneries and, over time, aims to increase its proportion of leather with a traceability grading of A or B. In 2017, 15 of PUMA's leather suppliers were medal-rated members of the LWG.

For further information on the LWG, please visit its [website](#).

#### 8.2.5 FSC®

*The Forest Stewardship Council (FSC®) sets standards for responsible forest management and uses the power of the marketplace to protect forests for future generations. To ensure forests are responsibly managed, FSC® evaluates sources of wood products against 10 principles and 57 criteria. FSC® ensures that waterways and wildlife habitat and species are protected in the sourcing of certified wood, and that high-conservation value forests (as well as those containing rare or threatened ecosystems) are preserved. Industry participation in the FSC® is voluntary.*

PUMA has chosen to uphold high environmental standards by ensuring our standard shoebox is made from over 95% recycled and fully FSC®-certified material.

For further information on the FSC®, please visit its [website](#).

#### 8.2.6 Water-Based Polyurethane

*Water-based polyurethane (PU) is a new raw material for producing synthetic leather. Compared to the conventional PU, the water-based PU does not need solvent during its production process and is therefore friendlier to human health and the environment.*

PUMA has participated in projects to promote the use of water-based PU in its supply chain within the framework of ZDHC. In 2018, PUMA defined a new target for 2020 to have at least 20% of the PUMA PU product be made from water-based PU.

#### 8.2.7 Responsible Down Feathers

*The RDS ensures that independent, third party assessment of all aspects of animal rearing and handling, as well as chain of custody through the entire supply chain, will help to improve the welfare of animals and, at the same time, provide retailers and consumers alike with greater confidence in responsible sourcing.*

In 2018, PUMA set a new sustainable material target to increase the use of Responsible downs in its supply chain to be beyond 90% in 2020.

More information on the RDS may be found on its [website](#).

### 8.3 Commitments to Eliminate Non-Sustainable Materials

#### 8.3.1 Policy Against the Use of Exotic Skins, Feathers and Mulesed Wool

PUMA prohibits sourcing or processing raw materials from any endangered species recognized by the International Union for Conservation of Nature (IUCN). We also prohibit suppliers from using leathers, hides and/or skins from animals that have been treated inhumanely, whether from the wild or from farms. PUMA does not and will not use any animal fur in any of its products.

In addition, the following listed items are prohibited from being included in any PUMA products:



- Furs, hides, or skins from exotic animals (e.g. crocodiles, snakes, ostrich, or fish)
- Downs and feathers that are plucked from living birds, including geese
- Merino wool from sources that practice wool removal through mulesing, regardless of the country of origin

For further information on endangered species, please see the [User's Guide to the IUCN Red List](#) and an overview of [CITIES](#) (the Convention on International Trade in Endangered Species of Wild Fauna and Flora).

### 8.3.2 Policy on Use of Cotton from Uzbekistan and Turkmenistan

In recognition of PUMA's Human Rights Policy, PUMA bans Uzbek cotton completely and officially extends this ban to Turkmenistan. PUMA expects all suppliers to avoid sourcing cotton from these countries and comply with this cotton origin policy for all PUMA products.

### 8.3.3 Policy on the Use of Nanotechnology

Given PUMA's goal of phasing out all hazardous substances by 2020 and its commitment to the precautionary principle, we will not use any nanotechnology applications. Exceptions may exist where applications are analyzed and proved to have no potential negative impact on human health and the environment.

## Sec. 9 – Environment Management Systems (EMS)

Environmental Management Systems ("EMS") are important tools for improving environmental performance by helping organizations measure and manage their environmental activities and initiatives. In addition to PUMA's own operations,

all PUMA suppliers shall implement an Environmental Management System ("EMS") that ensures legal compliance and the implementation of an environmental program that emphasizes continuous improvement.

PUMA recommends implementing a certified EMS for **large suppliers** (e.g. the employment of more than 1,000 workers) and other suppliers that have **substantial Environmental Impact** (e.g. factories with wet processes operations.)

PUMA encourages suppliers to secure a certified EMS program, such as ISO 14001:2015, ISO 50001: 2011 and/or the EU Eco-Management and Audit Scheme EMAS to monitor compliance and implementation of environmental initiatives.

For more information on the above certified EMS programs, please visit the ISO website (for information on [ISO 50001](#) and [ISO 14001](#)), as well as the European Commission's [website](#).

## 9.1 Legal Compliance

Full legal compliance forms the basis of every EMS. In most countries, official permits are necessary as proof of compliance with legal requirements. Different production processes may require distinct types of permits (e.g. a discharge permit for dye houses, or an air emission permit for operation of a large-scale boiler or electric power generator). The scale and nature of an operation may therefore also affect which permits are required.

Typically, permits cover air emissions, effluent, and legal waste disposal, both for conventional and hazardous waste. The following permitting documents must be secured by PUMA entities and supplier factories where applicable and as required by local laws:

- Environmental Impact Assessment (EIA)
- Environment Compliance Certificate (or its exemption) as justified by the EIA

- Related permit to operate a business following clearance of complying with relevant environmental protection and pollution regulations
- Environmental permit to operate wastewater treatment facilities
- Environmental permit for sources of air emissions (e.g. boilers, power generators, dust collector, onsite incinerator, etc.)
- Environmental permit or clearance for transport and disposal of solid waste
- Environmental permit for storage, transport, and disposal of hazardous waste
- Other environmental permits required by national environmental laws

The PUMA Sustainability Team expects Suppliers to maintain and validate all required permits in accordance with relevant environmental legislation. To ensure a Factory is in compliance with the local legislation and in accordance with the PUMA Sustainability Standards, proof of written environmental permits is a requirement in the PUMA Compliance Audit, a precondition for every supplier's production authorization.

## 9.2 Plan-Do-Check-Act

The EMS shall be geared towards continuous improvement that follows the Plan-Do-Check-Act ("PDCA") concept outlined in Figure 11:

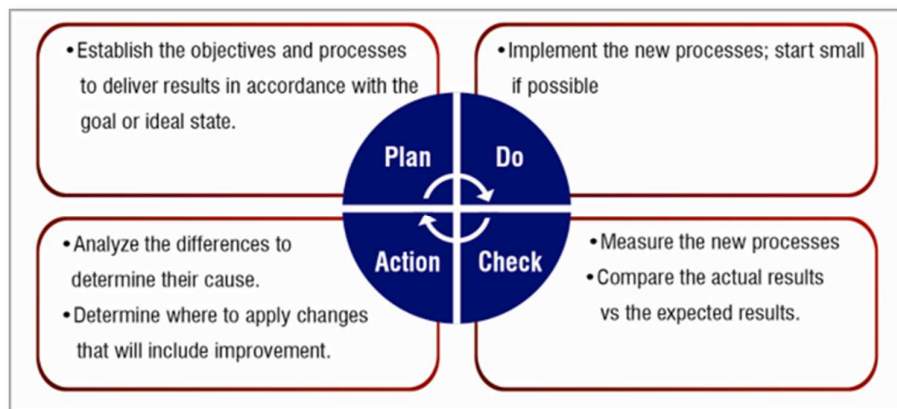


Figure 11: Plan-Do-Check-Act (adapted from ISO)

## ***Sec. 10 – Production-Related Environmental Standards***

PUMA's targets are in place to reduce our Environmental Impact and become more sustainable. This section reviews the following E-KPIs:

- Air Pollution
- CO<sub>2</sub> Emissions
- Water Use/Efficiency
- Water Pollution/Wastewater
- Waste
- More Sustainable Raw Materials

### **RESOURCE EFFICIENCY GUIDELINES**

- [Volume 1: Energy \(PDF\)](#)
- [Volume 2: Water \(PDF\)](#)
- [Volume 3: Waste \(PDF\)](#)
- [Volume 4: Resource Efficiency & Cleaner Production Management System \(PDF\)](#)

## E-TOOLKIT

[E-Toolkit in English \(ZIP Archive\)](#)

[Chinese \(ZIP Archive\)](#)

## 10.1 Air Pollution

All suppliers must adhere to the local regulations pertaining to air pollution. Depending on the type and size of a factory's operations, installation of devices that help prevent air pollution might be necessary. Typical examples of such devices include:

- Filters for exhaust systems carrying volatile organic compounds (e.g. solvents)
- Dust filters for exhaust systems from dusty areas (e.g. knitting departments; outsole grinding or buffing areas in shoe factories)
- Filters for larger burners (e.g. for steam generators or heating systems)

Regular checks on the quality of discharged air from all operations must be performed to ensure that all equipment is working properly. The records for these checks shall be kept for a minimum of two years.

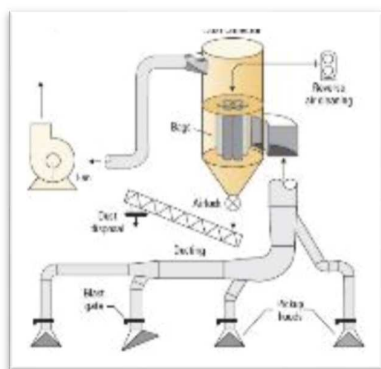


Figure 12: Dust filters for exhaust systems

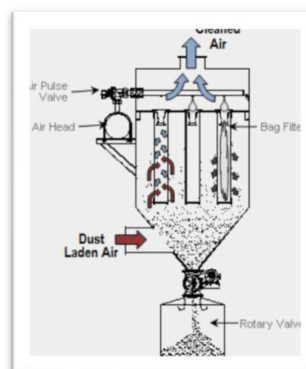


Figure 13: Filters for larger burners

### 10.1.1 Targets

As of 2017, industry best practices for air pollution are met by 90% of PUMA Core Suppliers (see PUMA's 2017 Annual Report for more information).

## 10.2 CO<sub>2</sub> Emissions

### 10.2.1 Legal Compliance

PUMA requires that all energy-related machinery operated by suppliers must be in compliance with all relevant local legislation, both in terms of the environment and health and safety (see the Health and Safety Handbook for further details). Factories must register with local environmental authorities all large boiler operations, coal burners, and other types equipment that generate emissions. In addition, factories must comply with all local environmental standards on air emissions, safe storage of fuel, and other requirements for the aforementioned types of equipment.

### 10.2.2 Targets

*As part of the Commit to Action Campaign on the Road to Paris, PUMA formally committed to developing a Science-Based Target for climate change. We also publicly committed to continue reporting on our carbon footprint and climate change program as part of our company's mainstream financial reporting, as well as to a responsible corporate engagement in climate policy.*

In line with this joint effort to limit global warming below two degrees Celsius by the end of 2020, PUMA has set a **3%** reduction in CO<sub>2</sub> emitted per piece or pair (apparel, accessories, or shoes), per year compared to our 2015 baseline.

Table 1: CO<sub>2</sub> Emission Targets vs. Baseline & Actuals, 2015-2020 (unit: Gr)

DIVISION	E-KPI		BASELINE					
			2015	2016	2017	2018	2019	2020
<b>Accessories</b>	CO <sub>2</sub> /piece	Target		388.0	376.4	365.1	354.1	388.0
		Actual	400	400	300	n/a	n/a	n/a
<b>Apparel</b>	CO <sub>2</sub> /piece	Target		388.0	376.4	365.1	354.1	388.0
		Actual	400	400	300	n/a	n/a	n/a
<b>Footwear</b>	CO <sub>2</sub> /pair	Target		1358.0	1317.3	1277.7	1239.4	1358.0
		Actual	1400	1100	1000	n/a	n/a	n/a

Figure 15 below outlines the CO<sub>2</sub> emissions associated with all three scopes of our supply chain, broken down by source.

In 2017, PUMA significantly reduced the per-item reduction of CO<sub>2</sub> emissions from the manufacturing of our goods, reducing our Scope 3 emissions by 7% relative to turnover (measured in millions of Euros per year). Scope 1 and 2 emissions were reduced by 5% relative to turnover, exceeding our target of 3% relative reduction on an annual basis (see Fig. 15).

In absolute terms, CO<sub>2</sub> emissions across all three Scopes increased by 6% (2017 had increased reporting scope, i.e. more sites covered).

**T.6 CO<sub>2</sub> EMISSIONS BREAKDOWN BY SOURCE**

CO <sub>2</sub> EMISSIONS <sup>1-6</sup> (ABSOLUTE FIGURES)	2017	2016	2015
Scope 1* - Direct CO <sub>2</sub> emissions fossil fuels [T]	7,678	6,854	7,296
Scope 2* - Indirect CO <sub>2</sub> emissions electricity & steam [T]	40,029	37,300	35,591
Scope 3* - Other indirect emissions [T]	208,525	196,896	192,305
CO <sub>2</sub> emissions from business travel transportation [T]	14,394	12,167	10,191
CO <sub>2</sub> emissions from B2B transport of goods [T]	64,076	48,484	57,085
CO <sub>2</sub> emissions from production in Tier 1 supply chain [T]	123,061	120,023	118,708
Upstream activities subtotal [T]	201,531	180,673	185,984
CO <sub>2</sub> emissions from B2C transport of goods [T]	6,994	16,223	6,321
Downstream activities subtotal [T]	6,994	16,223	6,321
<b>TOTAL SCOPE 1-3 [T]</b>	<b>256,232</b>	<b>241,049</b>	<b>235,192</b>

\* Human Resources increased reporting scope (more sites covered) in 2017

1. Figures include PUMA-owned or operated offices, warehouses and stores. Outsourced warehouses and franchised stores are excluded.  
2. Data includes extrapolations or estimations where no real data could be provided.  
3. Excludes on-site generated and consumed energy as well as energy produced on-site and sold to the grid.  
4. Includes own production sites in Argentina. All other production is outsourced to independent supplier factories.  
5. Store data is derived from exemplary stores in each country and extrapolated to cover all stores; methodological changes over the last three years influence results.  
6. PUMA uses own methodology for CO<sub>2</sub> accounting, with reference to the GHG protocol, but only reports data from business travel, transportation of goods as well as from production of Tier 1 suppliers under Scope 3 emissions.

Figure 14: CO<sub>2</sub> Emissions Breakdown by Source

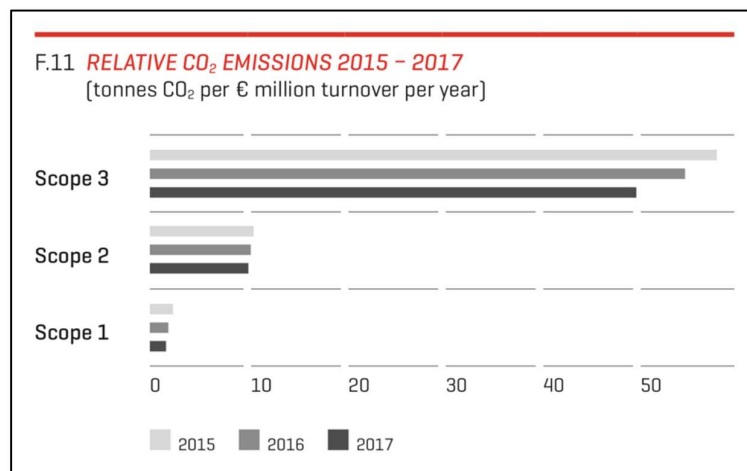


Figure 15: Relative CO<sub>2</sub> Emissions, 2015-2017

### 10.2.3 Guidelines – Carbon Footprint & Energy Efficiency

Over the last several years, global energy costs have fluctuated dramatically. During this same period, the political and social focus on the impact of CO<sub>2</sub> emissions and climate change has increased and intensified.

PUMA believes that running energy efficiency programs in every factory, as well as in larger offices, warehouses, and stores, will reduce both energy costs and CO<sub>2</sub> emissions.

A first step toward increasing energy efficiency is measuring and analyzing initial energy consumption, which allows us to identify eligible areas energy-saving measures. Taking simple measures to reduce energy usage have proven to be profitable given that investment costs are usually very low or nonexistent. Examples of such measures include:

- **switching off** machines when not in use, using servo motors in sewing machines, and
  - changing lighting sources to **energy-efficient LED lighting**.
  - Another option for reducing energy use is to optimize the heating and cooling of buildings.
- Typically, air conditioners or heating systems can be adjusted to a range that more closely fits the outside temperature, helping to reduce the **intensity** of the heating or cooling system and saving energy as a result
  - (for instance, when the outside temperature is 30 degrees Celsius, buildings may program the inside temperature to be 23 instead of 20 degrees Celsius, reducing the energy required to cool the building).
- Furthermore, **effective insulation** of buildings helps to save energy used for heating and cooling.
- **Waste heat** from the production process may be used for heating purposes of the building, as well as natural ventilation or evaporation cooling effects for energy-efficient cooling.

### 10.3 Water Use / Efficiency

The efficient use of water resources plays a critical role in the implementation of sustainable manufacturing. Despite the fact that 3% of the earth's volume of fresh water supply is technically a renewable resource, the supply of clean and fresh water is steadily decreasing as the world's population continues to rise.

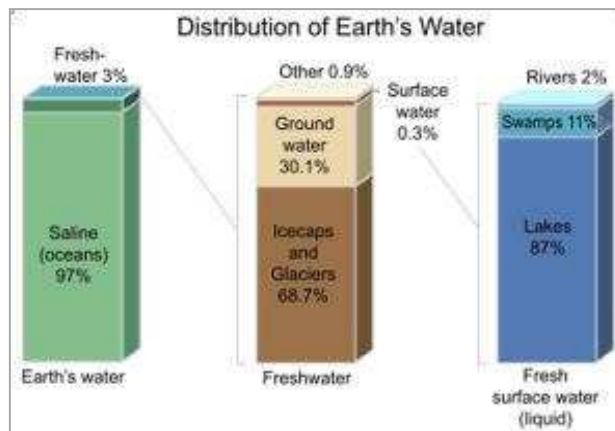


Figure 16: Distribution of the Earth's Water

**Water usage** in a typical dyeing mill can easily top **1.5 million m<sup>3</sup> per day** and cost more than **30,000 USD annually** in water and sewer fees.

#### 10.3.1 Guidelines – Water Efficiency

The following shall serve as recommendations only.

## REUSE OPTIONS

There are many opportunities to **reuse** wastewater in a textile mill. Some mills have substantially reduced operating costs by installing water reuse systems.

- Many dye-houses have successfully implemented heat exchangers in their wastewater stream.
- Others created a closed water cycle where:
  - final rinse water from **dyeing** can be used as make-up water for the dye bath, and
  - final rinses from **scouring** and **bleaching** may be used for makeup water in de-sizing.
- In addition, wastewater from many sources may be suitable for the washing process equipment and floors (after sweeping or other dry clean-up).

## SIMPLE SOLUTIONS

POTENTIAL IMPACTS	EXAMPLES OF ACTIONS
Water usage can be reduced in mills by making simple <b>housekeeping changes</b> , in addition to process modifications.  For instance, a single hose left running will waste 27.2 m <sup>3</sup> of water daily and cost more than US\$5,000 annually in increased water usage.	Attach a spring-loaded nozzle, costing less than 5 USD, to the hose.
<b>Process changes</b> can also result in substantial reductions in water and energy use.	Water flow through a rinsing process can be reduced by 50% if counter-current (also known as "two-stage") rinsing is used.

## SUGGESTED METHODS FOR WATER REDUCTION & REUSE

### EQUIPMENT

- One size does not fit all; use small-volume equipment for small production runs
- Place spring-loaded nozzles or timers on all water supplies to ensure they turn off when not in use
- Avoid filling process equipment with water from unmetered hoses; place meters on water supplies feeding process equipment

### PROCESSES

- Reuse wastewater from other processes for those that do not require high-quality water
- Use counter current or multi-stage rinsing to reduce water use

## COUNTER-CURRENT RINSING

Counter current rinsing is a process where the "dirtiest" fabric contacts the "dirtiest" water before clean water rinses the fabric as it leaves the process. Continuous rinsing processes are usually designed with counter current rinsing. Batch processes can be modified to incorporate two-stage or multi-stage rinsing, where water used for rinsing the previous bath is used to provide initial rinsing of the next batch. This water is then discharged and clean water is used to provide final rinsing. A two-stage process like this one may replace three separate rinsing cycles using clean water to achieve the same level of cleanliness with a fraction of the water required.



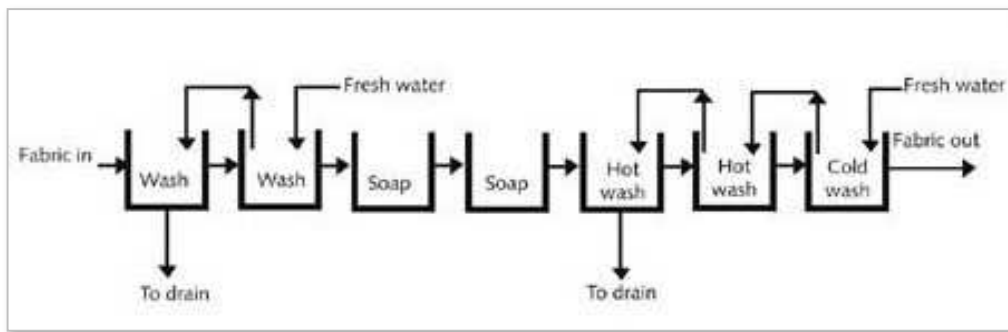


Figure 17: Example of counter current rinsing in fabric dyeing process

## 10.4 Water Pollution / Wastewater

**Wastewater** is defined as any water that has been affected by human use, whether through washing, flushing, manufacturing, or other activities. Wastewater is the largest waste stream from most textile mills' operations, including from washing, bleaching, and dyeing operations. Textile mill wastewater is often contaminated with process chemicals (e.g. dye, salt, bleach, detergent, etc.), oil and energy from hot water discharges (see the PUMA Forever Faster Sustainability Handbook – Chemical Management).

As a result, wastewater **discharge** permit limits are often difficult to meet. Permit limits may exist for the following types of wastewater discharge:

- BOD (biological oxygen demand)
- COD (chemical oxygen demand)
- Aquatic toxicity
- Metals content

For more information on wastewater discharge standards, please consult:

- The PUMA Sustainability Handbooks – Chemical Management
- The Wastewater Guidance Document of the Zero Discharge Hazardous Chemicals ("ZDHC") Initiative
- The SAVE Guidelines and online training on Water Management, which may be found [here](#).
- The e-toolkit may also be found on PUMA's website in [English](#) and [Chinese](#).

### 10.4.1 Legal Compliance

All suppliers must have the necessary permits and licenses from their local authorities to **extract** water from local supplies (whether using underground water, surface water, or other public sources), as well as to discharge wastewater into the public sewer system. Moreover,

- Before the final discharge of wastewater into the public sewer system, PUMA Suppliers or PUMA entities must comply with national environmental regulations and standards in their jurisdiction.
- Under no circumstances shall wastewater from PUMA Suppliers or PUMA entities be discharged to the environment (including natural bodies of water and groundwater) and surrounding communities without undergoing a treatment process approved by local authorities.

### 10.4.2 Targets

The Industry Good Practice for consumption and effluent treatment is met by 90% of PUMA Core Suppliers with wet-processing facilities.

We set a target of 90% compliance for MRSL and heavy metal requirements. (See Sec. 8.1 for more on ZDHC.)

### 10.4.3 Standards – Manufacturing Restricted Substances List ("MRSL")

In line with PUMA's environmental policy, PUMA has adopted the RSL and MRSL the RSL of the AFIRM Group and the MRSL of the ZDHC initiative. Both policies apply high standards to our supply chain, while taking into consideration all existing legal requirements for consumer safety and the protection of the environment.

For more information on Chemical Management, including the implementation of the AFIRM RSL and ZDHC MRSL, please refer to the PUMA Sustainability Handbook for Chemical Management.

### 10.4.4 Standards – Wastewater Testing & Disclosure

The purpose of wastewater testing is twofold, and achieves the following aims:

1. Ensures PUMA's vendors and material suppliers apply adequate wastewater treatment methods and technology to their processes, avoiding any negative Environmental Impact on the receiving body of water
2. Ensures industry-specific priority hazardous chemicals (as defined in the **ZDHC's** Manufacturing Restricted Substances List "**MRSL**") have been eliminated from PUMA's supply chain

*Beginning in 2014, PUMA requested specific **wastewater tests** from wet processing Suppliers, covering at least 80% of our material sourcing volume. In 2014, the required testing parameters focused on 11 priority **chemicals**. These included including the following:*

- Phthalates
- Flame retardants
- Azo dyes
- Organotin compounds
- Chloro-Benzenes
- Chlorinated solvents
- Chloro- Phenols
- SCCP
- APEO
- PFCs
- Heavy metals

*In 2015, PUMA added another ten (10) general wastewater parameters to its tests, including the following **substances**:*

- BOD (biological oxygen demand)
- COD (chemical oxygen demand)
- TSS
- TDS
- Phosphorus
- Sulfide
- pH
- Color
- Phenolic
- Calcium
- Magnesium hardness

Beginning in 2017, PUMA requires all wet-processing factories to upload their tests reports on the ZDHC Gateway. 96% of Core Suppliers with wet-processing facilities received the ZDHC Wastewater Guidelines in 2017, and 42 had their wastewater tested during the same year.

**All PUMA's core factories with wet processing *must* therefore perform wastewater testing according to ZDHC Wastewater Guidelines on an annual basis.**

PUMA believes in transparency and local stakeholders' right to know what is being discharged into local water bodies. Therefore, we ask our largest suppliers with wet-processing facilities to publish their test reports on an online platform run by the Chinese NGO, Institute of Public and Environmental Affairs (IPE). The list of suppliers who have uploaded reports on IPE is available on PUMA's official website. To upload or access the published test reports, please visit IPE's [website](#).

#### 10.4.5 Standards –Wastewater Treatment & Effluent Standards



Figure 18: Wastewater improperly discharged directly into natural body of water (left) vs. Wastewater properly treated before discharge (right)

In case of an onsite wastewater treatment plant, the discharge of the treated water must be controlled according to the parameters mentioned below and according to local environmental regulations and the [Wastewater Quality Guidelines of the ZDHC](#). All values listed in Appendix F are PUMA requirements.

#### 10.4.6 Soil & Groundwater Protection / Leaks & Spills Prevention & Management

Soil and groundwater can be contaminated by a variety of inputs, including wastewater, chemicals, oils, and other toxic liquid substances. It is important to avoid migration of any of these liquids into the ground (see Figure 26), or the aquatic environment. Hazardous and toxic substances that could pose a contamination threat to groundwater or the soil must be stored in a secondary containment, or a container designed to prevent hazardous liquids from leaking and polluting soil or water. Common techniques of secondary containment include the use of spill berms to contain oil-filled equipment, fuel tanks, truck washing decks, or any other sites that pose a risk of contamination. In addition, Factories must ensure that **storage areas** and containers are designed and utilized in a manner that minimizes the risk of releasing their contents to the environment.

##### **SIMPLE SOLUTIONS**

POTENTIAL IMPACTS	EXAMPLES OF ACTIONS
<b>Spills and clean-ups</b> can be a major source of water pollution. In most mills, process chemicals are stored, mixed, transported, and spilled unintentionally. Even spills that seem small or minor can have major impacts on wastewater. A spill of five pounds of salt will contaminate 10,200 m <sup>3</sup> of water, and the bursting open of a 50-pound bag of salt during handling could contaminate 1.2 million m <sup>3</sup> of water.	If a liquid product is spilled, responding with a dry clean-up (i.e. using absorbent clay and sweeping), is a better and safer solution than washing it down the floor drain.
<b>Leaks</b> may also cause water inefficiencies in mills. Heavy use of salt, acid, and caustic often results in valve and piping failure, but the same is not the case for plastic piping.	Replacing steel valves and piping with plastic is therefore a low-cost way to reduce leaks.

##### **SUGGESTED METHODS FOR PREVENTING WATER POLLUTION**

The following best practices will help ensure the safeguarding of hazardous and toxic substances:

## STORAGE

- Store dry materials, such as bags of salt or dye drums, off the floor and away from liquids by placing catch pans beneath the material
- Plug floor drains in material storage areas
- Build curbs around storage areas to keep spills in and water out
- Remove water supplies from storage areas
- Use dry clean-up methods. Provide brooms, vacuums, and absorbents
- Provide relevant work areas with handling tools, and training for operators so they can help prevent spills
- Provide operators with measuring equipment and recipes for each mixture
- Optimize chemistry (correct temperature can reduce the use of salt and dye)
- The entire storage area shall be built as a secondary containment (e.g. by using special paint to make the floor impermeable and by building surrounding bund walls)
- Storage areas shall be located away from watercourses and sensitive boundaries. In addition, they shall not be adjacent to areas of public use

- Storage areas must be protected against vandalism
- Containers must be bounded and sealed (there shall not be any storage of **open containers** in an outdoor area, even when empty, to reduce the risk of contaminating rainwater) Storage areas must be clearly marked and containers shall be clearly labelled
- Factories are urged to not exceed the maximum storage capacity of their storage areas

## EQUIPMENT

- Containers must be regularly inspected.
- In cases where secondary containment installations are not possible, protection trays may be used for all containers. One size does not fit all; use small-volume equipment for small production runs
- Select (plastic) valve and piping material to minimize corrosion and leaks
- Avoid filling process equipment with water from unmetered hoses; place meters on water supplies feeding process equipment

## PROCESSES

- Test incoming water supply for minerals or chemicals that negatively affect the process

It is the producer's obligation to have **emergency plans** ready for hazardous and toxic substances, particularly in the event of accidents or cases of damaged or leaking containers.

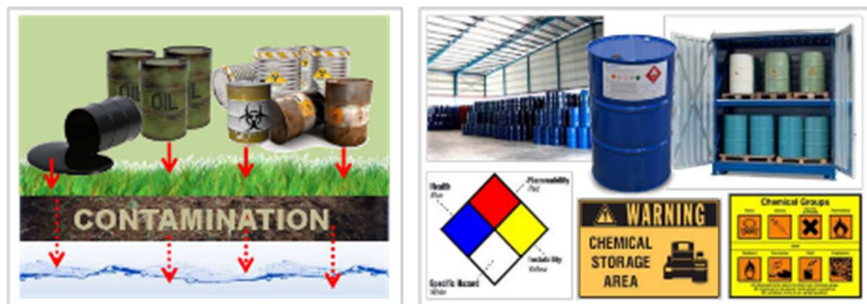


Figure 19: Migration of toxic substances into the groundwater, prevention through secondary containment

## SPECIAL NOTE ON OIL CONTAMINATION

At many factories and plants, minor oil spills and oil leaks are among the most prevalent and least noticed of contamination events. These oil spills usually originate from the use of lubricants, fuel oil, and other commonly found oils. The effects of these spills can be serious: oil contains hazardous and toxic chemicals that can contaminate the soil and groundwater where drinking water might be extracted, posing a direct risk to human health. In water run-off, like in case of rain, spilled oils can be carried into public drainage systems, often ending up in rivers, seas, or other surface water systems.

Oil does not dissolve in water and can form a very thin film on the water surface, polluting a vast area of surface water even with a small amount.

The oil film covering the surface of the water can prevent important biochemical processes, such as photosynthesis, and therefore can pose a significant danger to the aquatic ecosystem.

Factories shall contain all oil spills and leakage when such contamination events occur to reduce their Environmental Impact. Even when it may go to a wastewater treatment facility, oil is both difficult to remove from the water and can affect the physical-chemical process of wastewater treatment.

All Factories must ensure that:

- Its **employees** are aware of the risks of improper handling of oil, oil spills and leakages
- All containers, of any size, have **secondary containment equipment** at all times

Even though oil may be considered “dirty” or contaminated, many technologies are available to reprocess the oil and allow it to be reused, either as low-grade lubricant or fuel increasing the dirty oil’s utility.

## 10.5 Waste

Most manufacturing processes result in the generation of byproducts. These waste products pose a threat to ecosystems and communities if they are not treated and disposed of in a safe, responsible manner that addresses their potential threat in the short- and long-term.

The increasing volume of waste produced during many processes associated with manufacturing, combined with the lack of regulations for the treatment and/or disposal of the waste in many developing countries, poses a significant risk to the future, both for the environment and the communities that rely on it.

### 10.5.1 Legal Compliance

All waste disposal and recycling efforts must meet local legal requirements. This requirement applies to the use of officially authorized waste and recycling contractors in addition to a factory’s own internal processes. Specific standards apply for wastes classified as hazardous waste.

Under no circumstances shall waste from PUMA suppliers or PUMA entities end up in illegal landfills, dumped into rivers, or burned illegally on factory premises or elsewhere.

### 10.5.2 Guidelines – Solid (Non-Hazardous) Waste

For many phases associated with the production process, some generation of waste cannot be avoided, however

the reduction of waste shall be considered a priority for all manufacturing steps. PUMA requires that all parties involved in producing its products take all measures possible to optimize environmental outcomes of the production process.

The following waste hierarchy provides an overview of options for treating and disposing of waste, in order of most desirable to least.

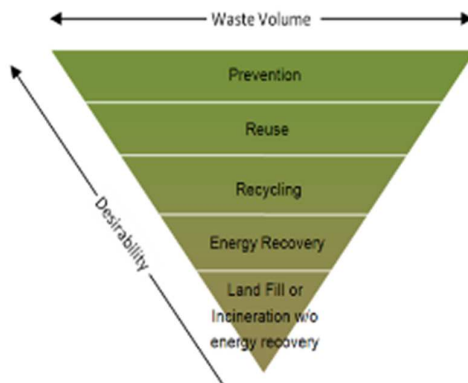


Figure 20: Waste Hierarchy

1. **Prevention:** improve manufacturing methods and influence consumers to demand greener products and less packaging, reducing the overall amount of waste requiring treatment and disposal.
2. **Reuse:** any operation by which products or components are saved after initial use and used again for the same purpose for which they were conceived.
3. **Recycling:** any recovery operation to reprocess waste materials into products, materials or substances that can be used in their original context, or for other purposes. Reuse includes the reprocessing of organic material, but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations.
4. **Energy Recovery:** converts the energy from non-recyclable or reusable waste materials into useable heat, electricity, or fuel through a variety of processes, including combustion, gasification, pyrolysis, anaerobic digestion, and landfill gas ("LFG") recovery.
5. **Landfill or Incineration without Energy Recovery:** the least desirable method of waste treatment and shall be utilized only if none of the above possibilities are feasible. Whenever landfilling or incinerating waste materials, all relevant laws and regulations of applicable countries must be followed. PUMA requires that the disposal route of waste be comprehensively documented by official waste contracts or invoices.

### 10.5.3 Hazardous Waste

*Hazardous waste is defined as a type of solid waste that cannot be disposed of by common means given its substantial, or potential, threat to public health and/or the environment. Hazardous waste can be found in gas, liquid or solid form. The United States Environmental Protection Agency ("EPA") defines hazardous wastes as materials that are known or tested to be toxic, corrosive, flammable, or reactive.*

Characteristics of various types of hazardous waste are defined below:

- **TOXIC:** Containing a concentration of certain substances that exceeds regulatory thresholds and/or are expected to cause injury or illness to human health or harm to the environment
- **CORROSIVE:** Acid waste (with a pH less than or equal to 2) or bases (with a pH greater than or equal to 12.5) that are capable of corroding metal containers such as storage tanks, drums and barrels (e.g. battery acid)
- **FLAMMABLE:** Flammable or ignitable waste can cause fire under certain conditions, spontaneously combust, or have a flash point less than 60°C (e.g. waste oil and used solvents)
- **REACTIVE:** Materials that are unstable under normal conditions and can cause explosions, toxic fumes, gases, or vapor when heated, compressed, or mixed with water (e.g. lithium-sulphur batteries and explosives)



Figure 21: Labels from the globally harmonized system of classification

#### 10.5.4 Hazardous Waste Standards

PUMA **requires** all Factories to comply with all relevant local and international laws related to storage, handling, transport, and final disposal of hazardous waste. These may include:

- Registering the type and quantity of hazardous wastes generated from their operations
- Having trained personnel on-staff to handle the treatment and disposal of hazardous waste
- Having a legitimate and duly authorized hazardous waste transporter
- Having a legally authorized hazardous waste disposal and treatment facility

*See next page.*



## APPENDIX

### A. The PUMA Code of Conduct

PUMA SE, PUMA WAY 1, D-91074 Herzogenaurach

FOREVER FASTER PUMA 

# CODE OF CONDUCT

**PUMA respects Human Rights. This respect defines our engagement with the societies in which we operate, and with our partners throughout our supply chain. PUMA respects the environment. We are determined to manage, reduce and report on the impact on the environment of both our organization and our supply chain.**

**These two commitments are expressed publicly and transparently in the PUMA Code of Conduct. All our Employees, Vendors and their Subcontractors are required to comply in full with this Code of Conduct. Where differences or conflicts arise, the highest standard shall apply.**

#### **EMPLOYMENT RELATIONSHIP**

Vendors and their subcontractors shall adopt and adhere to rules and conditions of employment that respect workers, and, at a minimum, safeguard their rights under national and international labor and social security laws and regulations.

#### **NO CHILD LABOR**

Vendors and their subcontractors may not employ anyone below 15 years of age, or the local legal minimum age, or the age for completing compulsory education, whichever of the three is higher.

#### **SAFE WORKING ENVIRONMENT**

Vendors and their subcontractors must provide a safe and hygienic working environment for all employees. Vendors and their subcontractors must take all possible precautions to prevent accidents at the workplace, and should actively promote good occupational health and safety practices.

#### **FREEDOM OF ASSOCIATION & COLLECTIVE BARGAINING**

Vendors and their subcontractors must guarantee the right of their employees to join unions, or other work or industry related associations, and to bargain collectively. These rights must be given without fear of harassment, interference or retaliation.

#### **NO DISCRIMINATION**

Vendors and their subcontractors do not discriminate against any of their employees. Employees are treated with respect and equality regardless of religion, age, gender, pregnancy, marital status, disability, nationality, race, ethnic origin, political views or sexual orientation.

#### **ETHICAL BUSINESS PRACTICES**

PUMA SE will not tolerate corruption neither in the supply chain nor in its own operations.

#### **DIGNITY AND RESPECT**

Harassment, corporal punishment and physical, sexual, psychological or verbal abuse is not tolerated in the PUMA supply chain. Vendors and their subcontractors cannot use any form of forced labor including prison labor, indentured labor or bonded labor.

#### **FAIR COMPENSATION**

Every worker has a right to compensation for a regular work week that is sufficient to meet the worker's basic needs and provide some discretionary income. Employers shall pay at least the minimum wage or the appropriate prevailing wage, whichever is higher, comply with all legal requirements on wages, and provide any other benefits required by law or contract. Where compensation does not meet workers' basic needs and provide some discretionary income, each employer shall work with their relevant stakeholders to take appropriate actions that seek to progressively reach a level of compensation that does.

#### **NO EXCESSIVE WORKING HOURS**

Vendors and their subcontractors employees must not be obliged to work in excess of the regular workweek and maximum overtime allowed by local labor law. A regular workweek shall not exceed 48 hours and one day off shall be guaranteed for every seven-day period. Other than in exceptional circumstances, the sum of regular and overtime hours in a week shall not exceed 60 hours. Overtime shall be voluntary and compensated at a premium rate and not be requested on a regular basis.

#### **RESPECT THE ENVIRONMENT**

Vendors and their subcontractors must respect local environmental protection legislation or international industry standards, whichever is higher. All Vendors and their subcontractors must measure and progressively reduce their impact on the environment.

REGION	TELEPHONE	LANGUAGES
Southeast Asia	+84 989385612 +628 11 227 2143	
South Asia	+880 1708469256	
East Asia	+86 13622884924	
Americas	+503 77871132	
Europe, Middle East & Africa	+49 15114743876 +90 532 483 6685	

Vendors and their subcontractors accept that their business practices are subject to scrutiny. All subcontractors must be authorized by PUMA and it is the responsibility of the vendor to ensure that this Code of Conduct is respected at their subcontractors.

PUMA SE reserves the right to cease trading with any company which is found to violate this Code of Conduct.

Please direct all enquires, complaints and suggestions regarding this code and its implementation to [sustain@puma.com](mailto:sustain@puma.com) or contact your local PUMA Sustainability Team.

V. 06. 2016

## B. Contacts

If you have any questions or need additional information, please contact us. Below are main PUMA contacts by relevant areas:

Waste Water Testing and Guidance, IPE Platform, Environmental Audits	Mr. Andrew Li Mr. Vincent Chen	<a href="mailto:andrew.li@puma.com">andrew.li@puma.com</a> <a href="mailto:vincent.chen@puma.com">vincent.chen@puma.com</a>
PUMA RSL Database, Restricted Substances List, AFIRM, RSL Remediation Procedure	Mr. Edelberto Anit Ms. Yvonne Y	<a href="mailto:edelberto.anit@puma.com">edelberto.anit@puma.com</a> <a href="mailto:yvonne.y@puma.com">yvonne.y@puma.com</a>
ZDHC, MRSL	Mr. Stefan Seidel Mr. Vincent Chen	<a href="mailto:stefan.seidel@puma.com">stefan.seidel@puma.com</a> <a href="mailto:vincent.chen@puma.com">vincent.chen@puma.com</a>
bluesign® System Partnership	Mr. Stefan Seidel Mr. Vincent Chen	<a href="mailto:stefan.seidel@puma.com">stefan.seidel@puma.com</a> <a href="mailto:vincent.chen@puma.com">vincent.chen@puma.com</a>
Better Cotton Initiative	Mr. Vincent Chen Ms. Karol Trejo	<a href="mailto:vincent.chen@puma.com">vincent.chen@puma.com</a> <a href="mailto:karol.trejo@puma.com">karol.trejo@puma.com</a>
Enablon, Higg Index, sustainability project	Mr. Vincent Chen Mr. Stefan Seidel	<a href="mailto:vincent.chen@puma.com">vincent.chen@puma.com</a> <a href="mailto:stefan.seidel@puma.com">stefan.seidel@puma.com</a>

In case of any other questions regarding this manual, please contact the PUMA Corporate Sustainability Team at:

[sustainability@puma.com](mailto:sustainability@puma.com)

or:

Mr. Stefan D. Seidel  
Head of Corporate Sustainability  
PUMA SE  
[Stefan.seidel@puma.com](mailto:Stefan.seidel@puma.com)  
Tel: +49 9132 81 0  
PUMA-WAY 91074, Herzogenaurach, Germany

## C. UN Global Compact Principles

### **THE TEN PRINCIPLES**

The UN Global Compact's ten principles in the areas of human rights, labor, the environment and anti-corruption enjoy universal consensus and are derived from:

- [The Universal Declaration of Human Rights](#)
- [The International Labor Organization's Declaration on Fundamental Principles and Rights at Work](#)
- [The Rio Declaration on Environment and Development](#)
- [The United Nations Convention Against Corruption](#)

The UN Global Compact asks companies to embrace, support and enact, within their sphere of influence, a set of core values in the areas of human rights, labor standards, the environment and anti-corruption:

### **HUMAN RIGHTS**

- [Principle 1](#): Businesses should support and respect the protection of internationally proclaimed human rights; and
- [Principle 2](#): make sure that they are not complicit in human rights abuses.

### **LABOR**

- [Principle 3](#): Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
- [Principle 4](#): the elimination of all forms of forced and compulsory labor;
- [Principle 5](#): the effective abolition of child labor; and
- [Principle 6](#): the elimination of discrimination in respect of employment and occupation.


### **ENVIRONMENT**

- [Principle 7](#): Businesses should support a precautionary approach to environmental challenges;
- [Principle 8](#): undertake initiatives to promote greater environmental responsibility; and
- [Principle 9](#): encourage the development and diffusion of environmentally friendly technologies.


### **ANTI-CORRUPTION**

- [Principle 10](#): Businesses should work against corruption in all its forms, including extortion and bribery.

## D. Sustainability Charter for Offices, Stores, and Warehouses



Fair  
Honest  
Positive  
Creative

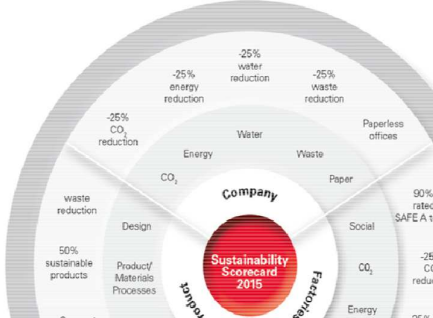


### Sustainability Charter for PUMA Warehouse

In PUMA, we are committed to reducing our environmental impact and we have clear goals to achieve this. In this warehouse \_\_\_\_\_ we...

		Check	Working on it			Check	Working on it
<b>CO<sub>2</sub></b>				<b>Water</b>			
... Promote environmentally friendly means of transportation for employees		<input type="checkbox"/>	<input type="checkbox"/>	... Monitor and analyze consumption quarterly		<input type="checkbox"/>	<input type="checkbox"/>
... Switch to a more environmentally friendly car /truck fleet		<input type="checkbox"/>	<input type="checkbox"/>	... Install water saving devices on basin faucets/taps		<input type="checkbox"/>	<input type="checkbox"/>
... Use more fuel/energy efficient forklifts		<input type="checkbox"/>	<input type="checkbox"/>	... Install water-efficient toilets		<input type="checkbox"/>	<input type="checkbox"/>
... Promote local/organic food at the canteen		<input type="checkbox"/>	<input type="checkbox"/>	... Recover rainwater where feasible		<input type="checkbox"/>	<input type="checkbox"/>
... Support the "Meat Free Monday" Campaign		<input type="checkbox"/>	<input type="checkbox"/>	... Use environmentally friendly cleaning products		<input type="checkbox"/>	<input type="checkbox"/>
... Promote conference calls or video conferences instead of business trips where feasible		<input type="checkbox"/>	<input type="checkbox"/>	... Water green areas wisely		<input type="checkbox"/>	<input type="checkbox"/>
<b>Energy</b>				<b>Waste</b>			
... Monitor and analyze consumption quarterly		<input type="checkbox"/>	<input type="checkbox"/>	... Recycle ink cartridges		<input type="checkbox"/>	<input type="checkbox"/>
... Use efficient lighting in warehouses		<input type="checkbox"/>	<input type="checkbox"/>	... Sort and recycle waste wherever possible		<input type="checkbox"/>	<input type="checkbox"/>
... Install a main switch to turn off all electronic devices		<input type="checkbox"/>	<input type="checkbox"/>	... Reuse and recycle envelopes and packaging		<input type="checkbox"/>	<input type="checkbox"/>
... Install motion sensors for lights		<input type="checkbox"/>	<input type="checkbox"/>	... Safely dispose all fluorescent bulbs/batteries		<input type="checkbox"/>	<input type="checkbox"/>
... Use cooling and heating wisely		<input type="checkbox"/>	<input type="checkbox"/>	... Remove disposable tableware from the canteen		<input type="checkbox"/>	<input type="checkbox"/>
... Promote use of renewable energies		<input type="checkbox"/>	<input type="checkbox"/>	<b>Paper</b>			
... Install appliances with a good energy rating		<input type="checkbox"/>	<input type="checkbox"/>	... Promote a paperless warehouse policy		<input type="checkbox"/>	<input type="checkbox"/>
... Undertake regular maintenance to ensure all devices are working correctly and efficiently		<input type="checkbox"/>	<input type="checkbox"/>	... Use sustainable or recycled paper/cardboard		<input type="checkbox"/>	<input type="checkbox"/>
... Activate energy-efficient mode in all computers, printers and copiers		<input type="checkbox"/>	<input type="checkbox"/>	... Re-usage of cardboard boxes		<input type="checkbox"/>	<input type="checkbox"/>
... <b>Raise sustainability awareness amongst staff</b>		<input type="checkbox"/>	<input type="checkbox"/>				

Please contact [sustain@puma.com](mailto:sustain@puma.com) if you have any ideas on how to make our warehouses more sustainable!



## E. Useful Links and References

1. PUMA Sustainability Reports: <http://about.puma.com/en/sustainability/reports/puma-s-sustainability-reports>
2. Global Reporting Initiative: <https://www.globalreporting.org/>
3. BVT Guidance (German Environmental Agency): <http://www.bvt.umweltbundesamt.de/>
4. Greenpeace Detox (ZDHC): <http://www.greenpeace.org/international/en/campaigns/toxics/water/detox/>
5. UN Global Compact: <http://www.unglobalcompact.org/>
6. UNEP Carbon Neutral Network: <http://www.unep.org/>
7. Sustainable Apparel Coalition: <http://www.apparelcoalition.org/>
8. Bluesign: <http://www.bluesign.com/>
9. Leather Working Group: <http://www.leatherworkinggroup.com/>
10. Textile Exchange: <http://textileexchange.org/>
11. Environmental Protection Encouragement Agency (Cradle to Cradle): <http://epea-hamburg.org/index.php>
12. Global Organic Textile Standard GOTS: <http://www.global-standard.org/>
13. Organic Exchange: <http://www.ecocert.com/en>
14. Recycled Polyester Certified by Global Recycle Standard GRS: <http://textileexchange.org/content/global-recycle-standard>
15. Cotton Made in Africa: <http://www.cotton-made-in-africa.com/en/>
16. Blue Sign Certificated Fabrics: <http://www.bluesign.com>
17. Leather Working Group Certified Leather: <http://www.leatherworkinggroup.com/>
18. FSC Certified Paper and Cardboard: <https://ic.fsc.org/en>
19. All Cradle2Cradle certificated Materials: <http://www.c2ccertified.org/>
20. Fair Trade-Certified Cotton or Sports Balls: <http://www.fairtrade.net/>

## F. ZDHC Guidelines – Conventional Parameters

Table 1: Conventional parameters showing foundational, progressive, and aspirational limits; and the standard test methods for measurement.  It is expected that suppliers will use the standard methods that best apply to their region. When reporting data, state the standard test methods used to obtain the data.	Sum parameters + metals (mg/L unless otherwise noted)	Limits		
		Foundational	Progressive	Aspirational
Temperature [°C] *		Δ15 / max. 35	Δ10 or 30	Δ5 or 25
TSS		50	15	5
COD		150	80	40
Total-N		20	10	5
pH		6-9		
Colour [m <sup>2</sup> ] (436nm; 525; 620nm)		7; 5; 3	5; 3; 2	2; 1; 1
BOD <sub>5</sub>		30	15	5
Ammonium-N		10	1	0.5
Total-P		3	0.5	0.1
AOX		5	1	0.1
Oil and Grease		10	2	0.5
Phenol		0.5	0.01	0.001
Coliform [bacteria/100 ml]		400	100	25
Persistent Foam		Not visible		
Anions				
Cyanide		0.2	0.1	0.05
Sulfide		0.5	0.05	0.01
Sulfite		2	0.5	0.2
Metals				
Antimony***		0.1	0.05	0.01
Chromium, total		0.2	0.1	0.05
Cobalt		0.05	0.02	0.01
Copper		1	0.5	0.25
Nickel		0.2	0.1	0.05
Silver		0.1	0.05	0.005
Zinc		5.0	1.0	0.5
Arsenic		0.05	0.01	0.005
Cadmium		0.1	0.05	0.01
Chromium (VI)		0.05	0.005	0.001
Lead		0.1	0.05	0.01
Mercury		0.01	0.005	0.001

## G. Industry Good Practice Examples

The following case studies illustrate ways in which PUMA or our Suppliers have incorporated these **best practices** into their production processes to streamline resource consumption, save energy, and reduce costs.

### CO<sub>2</sub> Emissions

#### **PUMA PLAZA—HERZOGENAURACH, GERMANY**

PUMA Plaza, in Herzogenaurach, Germany serves as PUMA's headquarters and is a useful example of the successful implementation of many of these principles.

- Concrete core temperature control is used to efficiently heat and cool the buildings, helping to reduce the emissions due to temperature control.
- Three photovoltaic power systems generate around 152,000 kWh of electricity per year, saving approximately 75 metric tons of CO<sub>2</sub> per year and generating considerable financial income from selling the generated power to the public grid.
- In addition, all electricity purchased from the public grid runs under a renewable energy tariff, making the whole office carbon neutral in terms of electricity consumption.
- Its sensors, installed throughout the building, automatically turn off lights if employees are not at their desks or in stairways, saving electricity that would otherwise be continuously consumed.
- Heating required during the winter season is generated using combined heat and power plants from the local energy service provider, and where some landfill gas is used as fuel.



Figure 22: Solar Panels at PUMA Headquarters in Herzogenaurach, Germany

#### **PHOTOVOLTAIC POWER GENERATION SYSTEM AT KEY (FUJIAN) MICROFIBER HUA CHANG IN FUJIAN, CHINA**

As trends in China continue to move toward exploring opportunities to enhance energy security through renewable options, Key (Fujian) Microfiber Hua Chang aims to expand its Photovoltaic Power Generation System.

Table 2: Photovoltaic Power Generation System Installation\*

INVESTMENT	ENVIRONMENTAL BENEFITS (ANNUAL)	ECONOMIC BENEFITS (ANNUAL)	PAYBACK PERIOD (YEARS)
1,540,180 USD	1,250,000 kWh 1,713.8 metric tons CO <sub>2</sub> emission	236,803 USD	6.5





Figure 23: Photovoltaic Power Generation System at Key (Fujian) Microfiber Hua Chang

### REPLACE THE FIREWOOD WITH A RICE HUSK BOILER AT SHENZHOU CAMBODIA, CAMBODIA

Despite technological advances in energy use across many markets, not all have evolved at the same pace. In Cambodia, wood is often still used as an energy source for the garment industry. This has placed increased pressure on Cambodian forest resources due to rising demand and unregulated harvesting of wood for fuel.

In 2014, Shenzhou Cambodia was the first factory in the garment industry to replace its firewood-burning boiler with a 2 tonnes-per-hour ("TPH") rice husk-based boiler with an expected lifespan of eight (8) years. Shenzhou Cambodia signed a five-year contract to purchase the steam at 30 USD/ton, and the boiler cost was borne by the service provider.

Table 3: Change Firewood To Rice Husk Boiler

INVESTMENT	ENVIRONMENTAL BENEFITS (ANNUAL)	ECONOMIC BENEFITS (ANNUAL)	PAYBACK PERIOD (YEARS)
<b>260,000 USD</b> Building construction <b>10K USD</b> Boiler cost born by supplier <b>160K USD</b>	<b>766 metric tons CO<sub>2</sub> emission*</b>	<b>31,000 USD</b> Additional <b>310K pieces</b> ironed	<b>3</b>

\*According to IFC, CO<sub>2</sub> emission in Cambodia is as of 112 kg/m<sup>3</sup>.



Before - Steam Generator using firewood



After - Biomass Operation

Figure 24: Changing Boiler Fuel from Firewood to Rice Husk



Figure 25: Ceramic Multi-Tubes Precipitator (black color cylinder) to Filter Air Emissions (retain rice husk ash particles from releasing into atmosphere through chimney)

## Water Use/Efficiency

### WATER RECYCLING, NINGBO SHENZHOU, CHINA

Ningbo Shenzhou is one of PUMA's key vertically organized apparel partners in China. Since 2005, Shenzhou Ningbo has continuously invested in water recycling, in order to help address limited water resources in China. Since 2011, these efforts have allowed Ningbo Shenzhou's to,

The recycled water originates from the fabric washing process and is treated in the recycling plant. The recycled water is then placed back into the process to provide,

recycle **15,000**  
metric tons of water  
every day.

**25-30%** of  
water consumption  
used for fabric  
washing.



Figure 26: Water recycling in Shenzhou Ningbo

### WATER RECYCLING, DONGGUAN TAI HING ZIPPER, CHINA

In 2014, average monthly water consumption at Tai Hing was 3,324.75 m<sup>3</sup>. Up to that point, the factory's dyeing water recycling system was not well maintained, resulting in a much lower amount of qualified recycling water than expected.

The factory responded by replacing its **suction pump** and rearranging its **pipeline system**.

The reconstruction of an **improved water recycling system**, along with other water **use reduction** methods, has led to a monthly average use of 2,583.33 m<sup>3</sup> in 2016,

representing a  
decrease of  
**22.3%**

compared to usage during the same  
period the year prior.



Figure 27: Dyeing water recycling system in Tai Hing, China

#### RAINWATER HARVESTING IN SQUARE FASHION, BANGLADESH

Our key partner in Bangladesh set up a collection system for rainwater by building two ponds, with a total holding capacity of 8,389m<sup>3</sup> of water. The ponds comprise a total area of 100,000 square feet on-site of the factory complex. As a result, Square Fashion has been able to

increase the amount of rainwater it utilizes each year, starting in 2012. Table 4 illustrates the harvested water as a percentage of boiler consumption in 2015, 2016 and 2017:

Table 4: Harvested Water as a Percentage of Boiler Consumption

2015	2016	2017
<b>14%</b> (14,520 m <sup>3</sup> )	<b>2%</b> (2,301 m <sup>3</sup> )	<b>14%</b> (17,979 m <sup>3</sup> )



Figure 28: Water collection ponds in Square Fashion

#### Water Pollution/Wastewater

Applying Industry Good Practices toward our use of water resources will reduce the need for costly investments in water treatment and delivery systems. Industry Good Practices include appropriate monitoring management, efficiency improvements, accurate measurements, and constant savings, which shall be implemented at all levels of the supply chain.

#### Waste

### REPLACING POLYBAGS WITH REUSED FABRIC BAGS, SHENZHOU, CAMBODIA

The reuse of fabric bags can stem the use of plastic bags and the significant volumes of waste, and associated environmental problems, that can result from them. Aware of the potential to reduce their waste, Shenzhou Cambodia has taken the fabric bags from its cutting, sewing and printing processes and using them for multi-purpose storage.

Table 5: Shenzhou Cambodia polybag replacement with reused fabric bags initiative

INVESTMENT	ENVIRONMENTAL BENEFITS (ANNUAL)	ECONOMIC BENEFITS (ANNUAL)	PAYBACK PERIOD
2,400 USD	1.2 metric tons of plastic waste	3,000 USD	10 months



Figure 29: Reused fabric bags from the cutting, sewing, and printing processes

### TAKE-BACK POLICY AND DOWNSCALE RECYCLING IN BEAUTIFUL SPRING, TAKEO, CAMBODIA

In the past, many empty drums in different sizes were disposed of as hazardous waste, a practice which was costly. In response, a new take-back policy has emerged, where factory management collaborate with local suppliers to develop initiatives to improve take-back and recycling options. In Takeo, Cambodia, PUMA's supplier, Beautiful Spring, has embarked on an initiative to turn non-hazardous drums (that would otherwise be disposed of as hazardous waste) into useful waste collection bins or other tools. This policy has incorporated take-back policies, downscale recycling, reuse of paper and a rewards program.

Table 6: Take-back policy, downscale recycling, reused paper and reward program

INVESTMENT	ENVIRONMENTAL BENEFITS (ANNUAL)	ECONOMIC BENEFITS (ANNUAL)	PAYBACK PERIOD
No significant investment	55 metric tons in waste disposal avoided	3,902 USD	Instant



Figure 30: Paper reused



Figure 31: Downscale recycling



## H. Glossary of Terms

**Anti-Bribery and Corruption Risk Assessment** – A process undertaken by Factories to measure and address risk factors that increase the chances of bribery or corruption in any dealings related to the production of PUMA products. This can include establishing policies, measuring the risk of current circumstances, and implementing corrective actions in cases where issues are illuminated.

**Brand Collaboration** – A collaboration between PUMA and another brand on the execution of an audit. In the case there is a brand collaboration, PUMA will accept the other brand's audit report and convert it to PUMA's audit reporting system, and vice versa.

**Core Suppliers** – Partners to PUMA who are selected on a regular, periodic basis through the PUMA Vendor Rating System. Core Suppliers comprise approximately 20% of PUMA's Suppliers and produce approximately 80% of PUMA's products.

**Credible Evidence** - e.g. presentation of Compliance Audit report by other brands, externally verified completion of corrective action plan, or similar.

**Deactivation** – The decision by PUMA to remove a Factory from its system, either because the Factory is no longer running the order from PUMA, or because the Factory is not authorized to produce for PUMA after a failed audit grade.

**Declaration of Principles** – The declaration letter signed by a Factory demonstrating its commitment to follow PUMA's Code of Conduct (CoC).

**Desktop Verification** – A verification of audit findings based on corrective action uploaded to FFC by a Factory after the completion of an audit. The verification is remotely conducted or no physical visit conducted.

**Due Diligence** – The investigation of a business or person prior to signing a contract, or an act with a certain standard of care. This investigation can be a legal obligation, but the term will more commonly apply to voluntary investigations.

**Employer** – Equivalent and interchangeable with "Supplier", "Factory", "Factory Management", and "Vendor"; and shall mean any Factory in Tiers 1-3.

**Environmental Impact** – A change in the makeup, functioning, or appearance of the environment due to the effect of certain activities. Examples include reduced crop yields, changes in water availability and increases in extreme weather due to greenhouse gas emissions.

**External Monitor** – A third party auditing firm accredited by PUMA (once it completes training and evaluation) to conduct audits in a Factory according to PUMA's Code of Conduct.

**Factory** – (See "Employer")

**Factory Designation** – The status of a Factory in the FFC reporting platform. The final designation will be a year-end grading.

**Factory Management** – (See "Employer")

**Fair Factory Clearinghouse (FFC)** – An audit reporting platform used by PUMA to upload the audit report in the Factory. The platform also allows parties other than PUMA to access the audit report. The Factory is provided with access to FFC to upload their Corrective Action Plans. Sourcing is provided with access to FFC to check on the status of a Factory report.

**Interim Rating** – A temporary audit rating provided after an audit and before a Factory uploads its Corrective Action Plan.

**Joint Venture** – A joint commercial enterprise within PUMA's supply chain where all parties retain their distinct identities.

**Licensee** – A company, not related to PUMA in a structural way with one of its business, that manages production orders for PUMA in a specific country. e.g. United Legwear, Dobotex, etc.

**LOA** – Letter of Authorization. A letter issued by PUMA to a Factory as a confirmation that a Factory is authorized to manufacture a PUMA product.

**Lower Tier** – Lower Tier consists of Tier 2 and Tier 3.

**Pay for Play** – A PUMA policy that requires Factories to pay in case their audit grade is B- or lower (see Pay for Play guidelines for more details).

**PUMA Vendor Rating System** – A supplier decision matrix to evaluate potential Core Suppliers. The system rates all Suppliers against strategic and operational parameters including the commitment of Vendor management to a PUMA partnership as evidenced by various investments and improvements.

**Re-audit Timeline** – A timeline for re-audit determined by the audit grade and/or year-end grade. The timeline is one (1) year for a Factory with an A, B+, or B-rating, and 4 months for a Factory with a C rating.

**Red Flag Incidence** – Workers or 3rd party complaints related to a Zero Tolerance or Critical Issue; workers' complaints that remained unsolved after 3 months; or a media incident that remains unresolved.

**Risk Framework** – A framework to determine risk in a country based on several factors, such as audit grade, political situation, and the interval of minimum wage changes.

**Restricted Substances List (RSL)** – A list of substances subject to a usage ban.

**RSL Tests** – The test to determine that a Factory does not use restricted-substance chemicals in any PUMA product.

**Secondary Containment** – The containment of hazardous liquids in order to prevent the contamination of soil and water. Common techniques of secondary containment include the use of spill berms to contain oil-filled equipment, fuel tanks, truck washing decks, or any other places or items that may could leak hazardous liquids and contaminate the nearby environment.

**Self-Assessment** – A part in the FFC platform containing a series of questions regarding general information about the Factory that Factories must complete prior to the PUMA audit.

**Subcontractor** – A separate company contracted by a Factory for work or that has a business relationship with a Factory.

**Subsidiary** – A branch of PUMA located in a country tasked with managing PUMA production order in that country. Examples include PUMA Japan, PUMA Korea, etc.

**Supplier** – (See “Employer”)

**Supplier Audit Feedback Form** – A form that must be voluntarily submitted by a Factory to the Assistant of PUMA Sustainability after a PUMA audit has been completed.

**Tier 1** – All processes related to finished product assembly such as Cutting Sewing, Pressing, Washing & Finishing, Packing etc. as long as those processes are carried out by a finished goods supplier.

**Tier 2** – All process related to material or component production such as Weaving, Knitting, Fabric dyeing/Printing, Chemical/Mechanical finishing, Tanning, Midsole, Outsole, Shoebox, Labels, Zippers, etc., Also subcontracted and outsourced processes by the Tier 1 factory. However not factories who produce finished goods (as those are classified as Tier 1)

**Tier 3** – All process related to raw material production such as ginning, rubber production, production of plastic pellets, input chemistry, etc.,

**Tier 4** – All processes of raw material extraction such as Growing and Harvesting of plants, Raising and Slaughtering of animals and extraction and processing of oils, minerals and chemicals.

**Vendor** – (See “Employer”)

**Vendor Compliance Programs** – Internal policies and control mechanisms that identify any potential noncompliance at an early stage and work toward remediation wherever required.

**Year-End Grading** – A grade related to Factory performance in one year. The year-end grade is given after PUMA considers the latest audit rating, any Red Flag Incidences, and workers’ complaints.



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