Challenge 4

Challenge of Minimizing and Optimizing Water Usage
TOYOTA’s Water Environment Policy

Striving to consider the importance of water sustainability, Toyota will aim for realizing prosperous societies that will share a sound water environment to the future.

Thoroughly reduce water usage
Minimize the impact on regional water resources by minimizing water withdrawal and utilizing rainwater at each plant.

Clean thoroughly and return
Have a net positive impact on the environment by returning clean water in the local water environment.

Become ‘No.1 regional plant’ leading to the prosperity of entire societies

Using local water resources carefully and becoming ‘No. 1 regional plant’
Outline of 2030 Milestone

Minimizing impact on water environment

- Implement measures, on a priority basis, in the regions where the impact on its water environment is considered to be large

  **Water quantity**

  Completed measures at the four Challenge-focused plants in North America, Asia and Southern Africa

  **Water quality**

  Completed impact assessments and measures at all of the 22 plants where used water is discharged directly to river in North America, Asia and Europe

Maximizing communications

- Disclose information appropriately and communicate actively with local communities and suppliers

Aiming for realizing minimization of impact on water environment through approaches that match local water situation
Appropriate information disclosure

Continuous investigation of local situation from a medium- to long-term perspective

Thorough implementation of measures

Impact assessment based on communications with local communities and suppliers

Application to other bases

Through continuous improvement of measures

Technological development + Thorough improvement

Selection of Challenge-focused plants

Promoting the actions for the challenge continuously with taking potential impact from a medium- to long-term perspective into consideration
Thoroughly reduce water usage

Utilizing water efficiently

Recycling waste water

Utilizing rainwater

Clean thoroughly and return

Reducing use of environmentally hazardous substances

Thoroughly purifying wastewater

Constantly checking water quality

Preventing discharge from the plants

Promoting technological development and actions thoroughly under these 2 initiatives
Toyota's Water Use

Water usage ratio by process in automobile manufacturing

- Paint: 63%
- Others: 22%
- Resin: 5%
- Welding: 8%
- Assembly: 1%
- Press: 1%

※ Takaoka Plant

Trend in water withdrawal of TMC

Water withdrawal (gigaliter)

- 2001: 25
- 2005: 20
- 2010: 15
- 2015: 10

Continuous reduction

Reducing water withdrawal by promoting reduction in painting process which require high water usage
<Case (1)> Water Saving Technologies in Painting Process

Developing production technologies which enable efficient water usage
The membrane is clogged with impurities.

Membrane clogging is prevented by optimizing the treatment conditions and dispersing impurities.

* Membrane: Reverse osmosis membrane to pass water but block ions and impurities such as salt

Preventing degradation in efficiency due to clogged membrane
<Case (3)> Efficient Use of Rainwater

Collection according to rainwater quality

Water quality: Clean

- (1) Natural rainwater
- (2) Collected water

Only rainwater above 2mm high from the level at the beginning of each rainfall

Level equivalent to industrial water

Separation of natural water using Karakuri

Karakuri, a special mechanism

Efficiently utilizing clean rainwater
<Achievement> Reduction Water Withdrawal in TMMF (in France)

<table>
<thead>
<tr>
<th>Before</th>
<th>Efficient water usage</th>
<th>Recycling of wastewater</th>
<th>Utilization of rainwater</th>
<th>After the improvements</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>20%</td>
<td>20% (15-30%)</td>
<td>50% (30-70%)</td>
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</tbody>
</table>

Waste water in painting used in preliminary washing

Waste water treatment plant

Rainwater reservoir

Reducing industrial water withdrawal by 90%
Minimizing Impact on Water Environment

Withdrawal
Using rainwater effectively

Use
Reducing amount of water used with using it cleanly

Recycle
Recycling waste water in plants

Discharge
Steadily controlling wastewater to be kept clean

Maximizing water circulation in plants but minimizing the impact on the local water environment