

GPSC

Water Efficiency Management Programs 2025



Content: GPSC Water Efficiency Management Programs 2025

No.	Content	Page
1.	Introduction	3-4
2.	Water use assessment to identify opportunities for water efficiency improvements	5-10
3.	Actions to reduce water consumption	11
4.	Actions to improve wastewater quality	12
5.	Establishment of targets to reduce water use	13
6.	Application of water recycling	14-15
7.	Awareness training provided to employees on water efficiency management programs	16



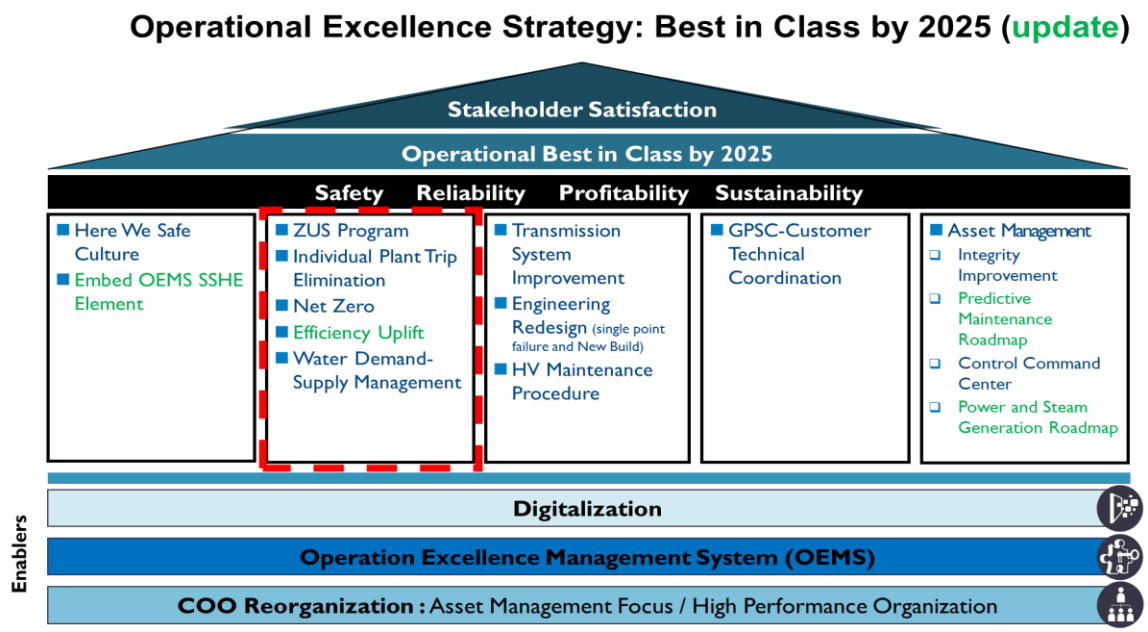
Introduction

Water is essential to develop and maintain successful and healthy economies and for human health and well-being. through the GPSC Water Efficiency Management Program, various processes for water management are conducted, including identification of opportunities to continually improve water efficiency performance, water use review, water use indicators measurement and monitor, and reduction or reuse of water in operations, etc.

In addition, GPSC provides training on the Water Efficiency Management Program to all employee and engagement with external stakeholder to raise awareness on water as the essential for all activities and life.



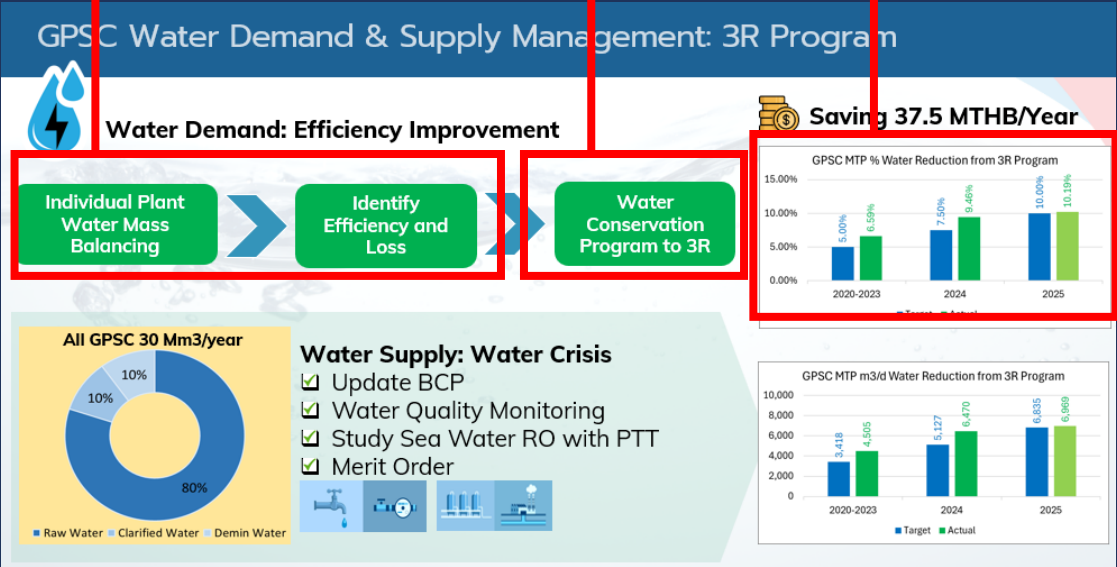
Introduction



Water use assessment to identify opportunities for water efficiency improvements

Actions to reduce water consumption, Application of water recycling

Establishment of targets to reduce water use



In order to ensure the constructive water management, GPSC has established governance structure and system from the top executives to operation level as well as well defined water strategy, target, and action plan which not only covers the use of water in all activities but also expands to the opportunities of water business to secure company resilience in the future term as well as appoints the functional team lead to responsible in the task and defines the reporting line to follow up each progression in timely basis.

With focusing on water efficiency improvement, the processes including plant water mess balancing, efficiency and loss identification, and water conservation program to 3Rs (reduce, reuse, recycle) are implemented to maximize the water efficiency.

Water use assessment to identify opportunities for water efficiency improvements

GPSC systematically monitors the use of water inside the organization. It is a process to identify activities and functions which have significant use of water and impact on water quality. The activities and functions will be considered as potential for water efficiency improvement.

INPUT	ACTIVITY	WASTEWATER GENERATED	ASSESSMENT APPROACH
Water from outside suppliers	• Cooling process • Steam production process • Mineral water production system • Condensate water quality improvement unit	• Sea water through a "Once through cooling system" • Wastewater from production processes	• Seawater temperature checking in the cooling system prior to releasing this back into the sea. The GPSC group has installed a seawater temperature measurement device, which will work continuously to constantly display this value in the control room of the power plant. An aquatic breeding project in collaboration with fishery groups and local scholars was also conducted. • Water quality check on a monthly basis in accordance with the measures listed in the EIA and EHIA reports.
Water from natural sources, such as sea water			
Tap water	Office services	• Graywater and blackwater	• Preparation of a record regarding the water use and wastewater treatment, by first party on a monthly basis.

Water use assessment to identify opportunities for water efficiency improvements

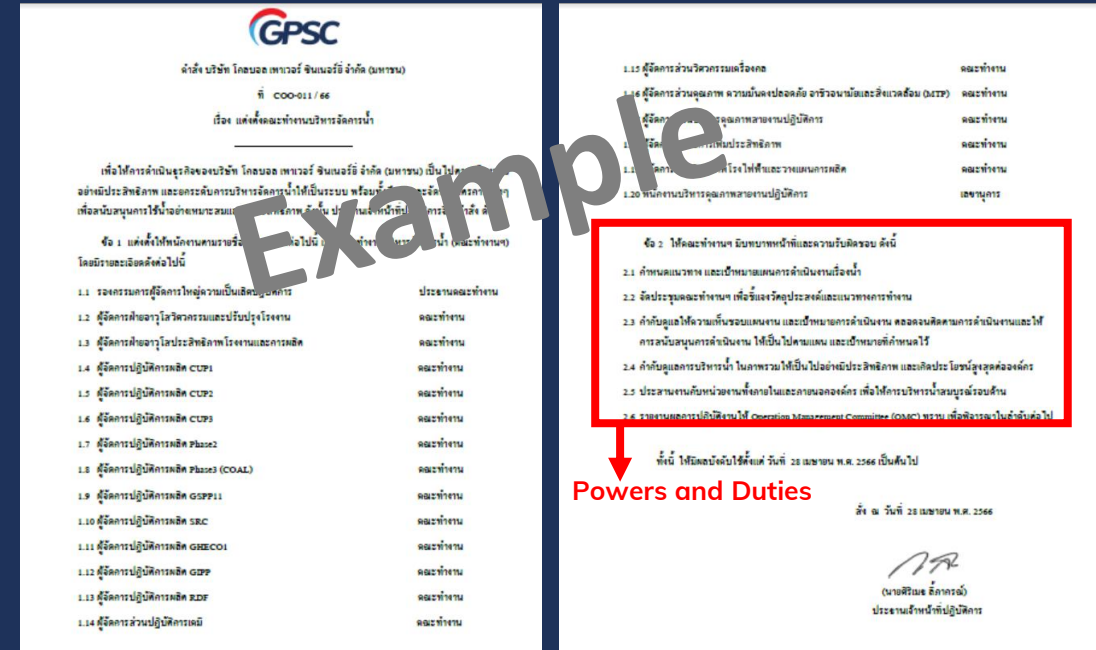
Water Management within GPSC

GPSC conducts systematic water-use assessments across its operational sites under its ISO 14001-certified EMS to identify opportunities for improving water efficiency. These assessments have led to 3Rs initiatives such as condensate reuse, boiler wastewater recovery, and cooling water recycling.

Key water efficiency initiatives include the cooling return line installation at CUP2, with an estimated annual service water saving of 157,680 m³, and the WTP6 Water Recycle Optimization project at GEN Phase 2, which recycled and reused 161,546 m³ of backwash and flushing water during FY2025.

To ensure effective implementation and governance, GPSC has established the **Water Management Working Team**, responsible for setting targets, approving action plans, monitoring progress, and coordinating with internal and external stakeholders. Additionally, GPSC participates in PTT Group's strategic water planning, including the development of the **Self-Rely / Water Secure Portion indicator**, which promotes long-term water efficiency and reduced dependency on public water sources.

Appointment of the GPSC's Water Management Working Team



1. Setup the guidelines and goals for the action plan on water management
2. Govern/ approve plans and target as well as following up on operations and providing support to operations. according to the action plan and target set
3. Coordinate with relevant parties both inside and outside the company in order to complete all dimension of water management

Water use assessment to identify opportunities for water efficiency improvements

Example of water use assessment by plants

Example of water efficiency monitoring report
(water consumption per MWh production)

Water use assessment to identify opportunities for water efficiency improvements by plant

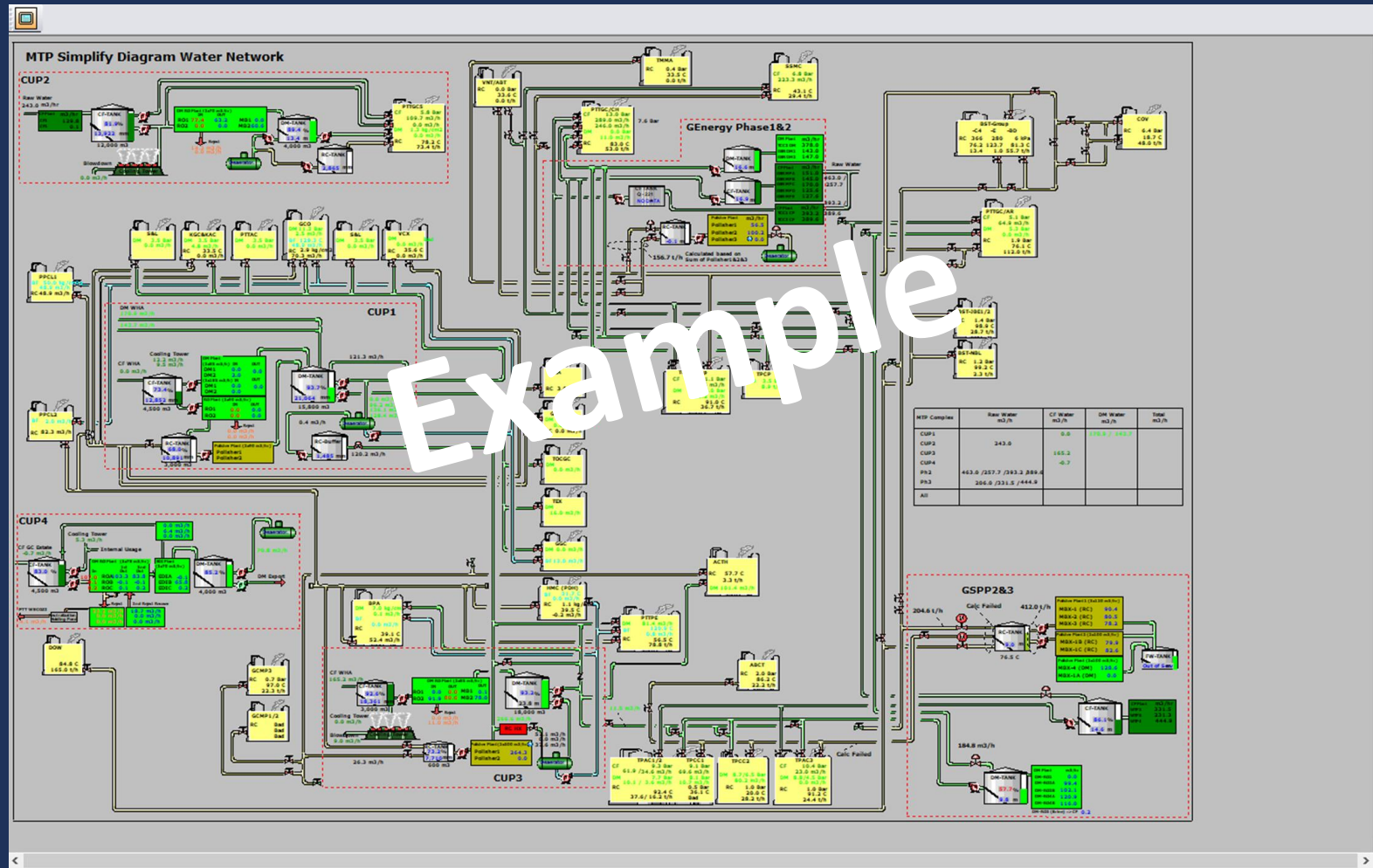
Example of water efficiency report
(water consumption per MWh production)

GPSC Water Summary			Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24
Power Plant Water Index																	
CUP134 Water Consumption	m3		215,933	245,024	209,833	289,595	207,402	202,927	128,668	146,573	196,800	202,814	123,802	184,318	197,229	228,675	228,227
CUP134 Production	MWheq		237,975	232,099	249,679	253,185	240,461	231,604	267,344	266,488	279,571	294,646	285,271	271,119	240,520	241,639	260,106
CUP134 Water Index	m3/MWheq		0.9074	1.0557	0.8404	1.1438	0.8625	0.8762	0.4813	0.5500	0.7039	0.6883	0.4340	0.6798	0.8200	0.9463	0.8774
CUP2 Water Consumption	m3		126,582	107,964	107,711	106,031	101,473	113,679	110,945	110,646	102,499	103,007	101,749	91,551	99,533	107,173	117,302
CUP2 Production	MWheq		82,375	77,211	80,012	73,274	61,558	74,640	75,582	78,666	76,995	77,418	80,276	74,668	81,151	78,487	80,117
CUP2 Water Index	m3/MWheq		1.5367	1.3983	1.3462	1.4470	1.6484	1.5230	1.4679	1.4065	1.3312	1.3305	1.2675	1.2261	1.2265	1.3655	1.4641
Ph2 Water Consumption	m3		74,759	52,256	61,397	55,913	105,806	109,676	84,850	97,300	78,942	58,321	128,020	121,538	157,587	225,694	227,835
Ph2 Production	MWheq		184,315	142,259	168,195	162,669	150,355	149,189	170,308	168,000	179,470	183,918	186,535	178,760	175,895	159,533	184,055
Ph2 Water Index	m3/MWheq		0.4056	0.3673	0.3650	0.3437	0.7037	0.7351	0.4982	0.5190	0.4390	0.3171	0.6863	0.6799	0.8959	1.4147	1.2379
Ph3 Water Consumption	m3		333,488	318,323	324,348	222,739	227,274	257,199	233,500	230,900	255,570	254,480	184,466	247,468	252,115	241,493	208,879
Ph3 Production	MWheq		592,933	597,363	577,627	638,959	589,935	626,369	600,000	593,370	562,439	562,439	542,601	533,475	547,476	457,800	505,463
Ph3 Water Index	m3/MWheq		0.5624	0.5329	0.5615	0.3486	0.3853	0.4070	0.3859	0.4070	0.4169	0.4169	0.3400	0.4639	0.4605	0.5275	0.4132
GPSP11 Water Consumption	m3		137,574	152,910	187,819	155,979	110,478	165,470	165,470	172,533	147,352	172,654	171,372	182,465	190,997	184,899	
GPSP11 Production	MWheq		110,797	103,167	132,798	110,478	122,833	127,000	127,000	137,252	141,968	140,512	139,229	141,166	135,120	131,895	
GPSP11 Water Index	m3/MWheq		1.2410	1.4822	1.4135	1.1519	0.9055	1.2935	1.2935	1.2511	1.2571	1.0379	1.2287	1.2309	1.2926	1.4135	1.4019
GHECO1 Water Consumption	m3		4,800	3,645	12,703	7,121	48,105	279	55,200	55,137	50,806	52,435	53,587	52,424	54,341	37,442	57,696
GHECO1 Production	MWheq		0	0	0	0	360,000	492,526	478,780	489,429	7,569	0	0	416,014	485,043	477,286	310,675
GHECO1 Water Index	m3/MWheq		N/A	N/A	N/A	N/A	0.1351	0.1122	0.1153	0.1127	6.7128	N/A	N/A	0.1260	0.1120	0.0784	0.1857
GIPI Water Consumption	m3		34,811	30,566	2,750	10,729	49,388	85,582	51,306	37,397	101,913	15,819	16,873	2,425	2,136	16,598	4,830
GIPI Production	MWheq		29,222	53,348	3,134	38,104	79,460	37,995	30,522	96,151	11,054	16,696	0	1,317	8,830	16	
GIPI Water Index	m3/MWheq		1.1913	1.4401	1.3638	3.4235	1.2961	1.0770	1.3503	1.2253	1.0599	1.4310	1.0106	N/A	1.6220	1.8797	307.6433
SRC Water Consumption	m3		12,427	20,572	13,899	17,411	8,970	83,555	217,918	305,654	132,396	1,310	1,200	1,867	-372	10,164	35,265
SRC Production	MWheq		0	0	0	0	0	45,133	147,775	218,445	74,168	0	0	0	0	0	19,363
SRC Water Index	m3/MWheq		N/A	N/A	N/A	N/A	N/A	1.8513	1.4747	1.3992	1.7851	N/A	N/A	N/A	N/A	N/A	1.8212
RDF Water Consumption	m3		5,258	30,268	12,713	35,409	32,427	22,656	21,163	11,274	22,785	21,802	21,802	19,042	17,276	33,153	35,173
RDF Production	MWheq		169	4,260	4,710	5,010	2,143	4,961	3,573	3,908	1,708	4,454	4,398	3,306	2,590	5,509	5,766
RDF Water Index	m3/MWheq		31.0977	7.1055	2.6991	7.0671	7.1590	6.5361	6.3409	5.4157	6.6018	5.1155	4.9574	5.7605	6.6696	6.0176	6.0997
Glow Energy Solar Farm Water Consumption	m3		75	62	75	109	247	159	174	164	95	8	7	17	26	24	15
Glow Energy Solar Farm Production	MWheq		155	182	203	191	202	210	222	159	167	139	178	141	163	190	198
Glow Energy Solar Farm Water Index	m3/MWheq		0.4832	0.3407	0.3703	0.5719	1.2206	0.7569	0.7835	1.0338	0.5698	0.0575	0.0392	0.1206	0.1597	0.1264	0.0758
Total Water Consumption	m3		940,422	931,260	990,503	909,108	895,897	1,078,366	1,047,893	1,160,674	1,105,560	815,537	782,351	872,963	945,034	1,058,236	1,064,934
Total Production	MWheq		1,237,940	1,177,765	1,266,572	1,621,796	1,572,434	1,846,926	1,920,315	2,000,749	1,402,546	1,276,037	1,256,467	1,616,712	1,675,321	1,564,395	1,497,654
Total Water Index	m3/MWheq		0.7597	0.7907	0.7820	0.5606	0.5698	0.5839	0.5457	0.5801	0.7883	0.6391	0.6227	0.5400	0.5641	0.6765	0.7111



Water use assessment to identify opportunities for water efficiency improvements

Example of water use assessment by plants



Water use assessment to identify opportunities for water efficiency improvements

Water Management outside GPSC



Example of GPSC's Representation in PTT Group Water Management Task Force

In addition to site-level water assessments, GPSC also contributes to PTT Group's **strategic water risk management** through the development of the **Self-Rely / Water Secure Portion** indicator in 2025. This metric evaluates the proportion of water sources that are under direct control of the Group, including:

- **Desalinated water from seawater**
- **Water from 3Rs initiatives** (Reduce, Reuse, Recycle)
- **Backup surface water reserves**
- **Groundwater sources**

This indicator is applied in both **normal operations and crisis scenarios**, helping GPSC and PTT Group enhance long-term water security and reduce reliance on public water supply.

ความร่วมมือเตรียมการจัดทะเบียนองค์กรผู้ใช้น้ำของ กลุ่ม ปตท. ในวาระปี 2568-2570

 คุณเพชรศักดิ์ มงคลธรรมรัตน์ ประธานเจ้าหน้าที่ปฏิบัติการ กลุ่มธุรกิจปิโตรเลียมขั้นต้น	 คุณศิริเมธ สืบการณ ประธานเจ้าหน้าที่ปฏิบัติการ กลุ่มธุรกิจปิโตรเลียมขั้นกลาง	 คุณสรวิชัย เลิศศิริกร ผู้จัดการทั่วไป กลุ่มธุรกิจปิโตรเลียมขั้นกลาง	 คุณเอกศักดิ์ ทองรุ่ง รองกรรมการผู้จัดการใหญ่ ปฏิบัติการ	 คุณณัฏฐ์ บรรณศิริเรือง รองกรรมการผู้จัดการใหญ่ ด้านการตลาด
Existing	1		1	
New Register	13	12	1	8

GPSC also demonstrates its commitment to responsible water governance by **registering as a certified water user organization** under Thailand's **Water Resources Act B.E. 2561 (2018)**. Through this participation, GPSC contributes to **basin-level water planning** and is eligible to engage in key activities such as: Reviewing water allocation priorities, Participating in drought and flood risk planning, Contributing to basin-level master plans, Recommending cross-basin water transfer decisions to the National Water Resources Committee

This role complements GPSC's internal assessments and further strengthens its position as a responsible industrial water user in Thailand's evolving water resource management framework.

Example of GPSC participates in the PTT Group's registered water user organization under the national basin-level governance framework for the 2025–2036 cycle.

Water use assessment to identify opportunities for water efficiency improvements

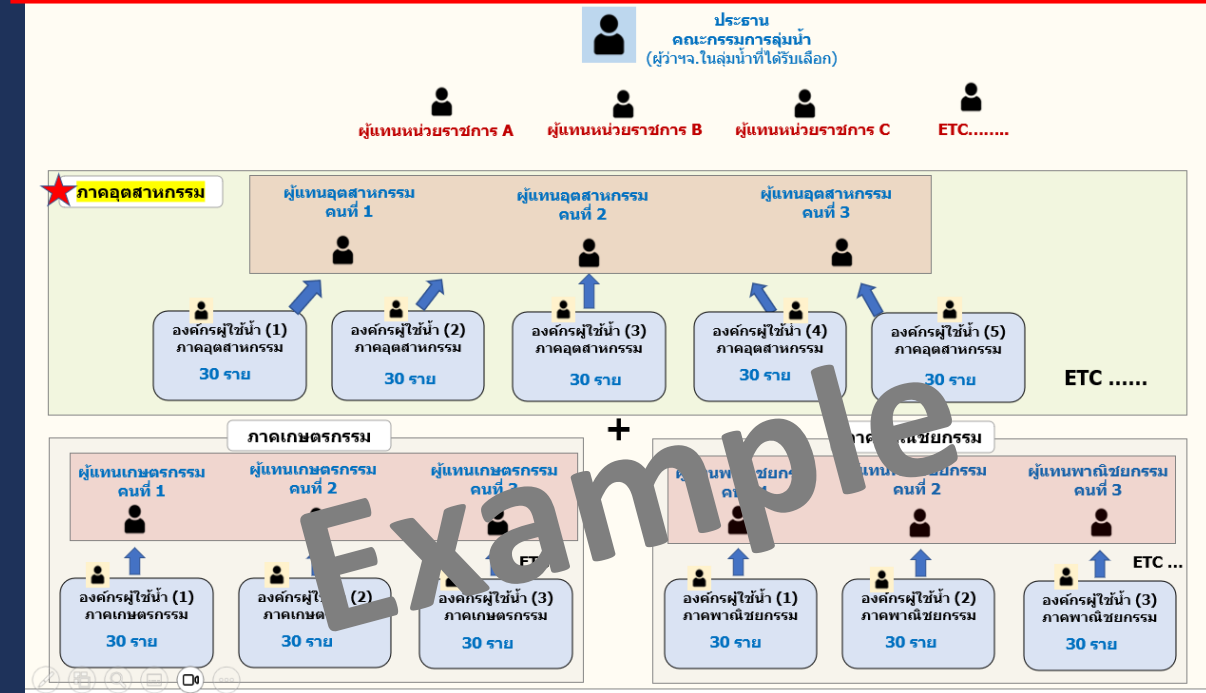
Water Management outside GPSC

GPSC manages external water by actively participating in the PTT Group Water Management Task Force, which holds meetings on water situations from the survey and analysis of the water situation model, and consequently formulates a water management plan, guidelines for monitoring water management targets, risk reduction, and assessment of impacts of water use in all operating areas. We finally communicate with responsible business units for efficient implementation of plans. The PTT Group Water Management Task Force also participates in the Water Management Working Group of the Eastern Region of Rayong. The working group, made up of governmental agencies and representatives of the private sector, monitors, assesses, analyzes the water situation and maps out measures to promptly reduce risks and impacts.

GPSC also leverages the Aqueduct Water Risk Atlas of the World Resources Institute (WRI) to identify water stress areas and determine the guidelines for the management of water sources outside all operating areas.

The River Basin Committee Structure under the Industrial Sector Group

โครงสร้างคณะกรรมการลุ่มน้ำ: จัดตั้งองค์กรผู้ใช้น้ำเพื่อเลือกผู้แทนอุตสาหกรรมในคณะกรรมการลุ่มน้ำ



Example of GPSC's Representation in Water management Outside GPSC

Actions to reduce water consumption

Following the water use assessment to pinpoint areas for reduction, GPSC prioritizes water management approaches across the operations and offices. This approach includes all measures focused on reducing the amount of water required for business activities and operations regarding equipment, systems or processes at facility/site level to those concerning employees/staff in office functions.

The water management performance of all operations and offices is closely monitored to ensure ongoing effectiveness. The below table shows water management approaches in operations and office services.

INPUT	ACTIVITY	WASTEWATER GENERATED	MANAGEMENT APPROACH
Water from outside suppliers	- Cooling process - Steam production process - Mineral water production system - Condensate water quality improvement unit	- Sea water through a "Once through cooling system" - Wastewater from production processes	- Regular inspection of the seawater pumping point to ensure the seawater pumping equipment and the aquaculture net to be in good working order. - Reuse the effluent from the sludge dewatering system directly. - Reuse wastewater (RO Reject) in the industrial water production system. - Water from the coal yard and other wastewater are treated and collected in the pond before being recycled to spray onto coal piles to remove coal dust.
Water from natural sources, such as sea water			
Tap water	Office services	Graywater and blackwater	3Rs (Reduce, Reuse, Recycle) - Monitor and fix leaks - Encouraging and training for water-conscious behavior

Actions to improve wastewater quality

GPSC emphasizes wastewater quality before discharging into water basis to comply with relevant regulations and avoid conflict with stakeholders. There are various measures implemented at facility level to improve the quality of wastewater/discharge water at the source (e.g., process improvements) and to monitor effluent (periodic sampling).

The wastewater quality of all operations and offices is closely monitored. The below table shows water management approaches in operations and office services.

INPUT	ACTIVITY	WASTEWATER GENERATED	MANAGEMENT APPROACH
Water from outside suppliers	• Cooling process • Steam production process • Mineral water production system • Condensate water quality improvement unit	• Sea water through a "Once through cooling system" • Wastewater from production processes	• Install a device to measure the temperature and residual chlorine of sea water after cooling to be careful not to exceed the standard of wastewater from the production process. • Treat to achieve standard values and pass the criteria to then release back into natural water sources.
Water from natural sources, such as sea waste			
Tap water	Office services	• Graywater and blackwater	• Install grease traps • Promote employee awareness • Monitor and maintain the wastewater treatment system

Establishment of targets to reduce water use

GPSC establishes quantitative and time-bound water reduction targets across its operational sites. For FY2025, the aggregated water reduction target across applicable operational sites was 7,799 m³/day. Site-specific targets are established based on water-use assessments and operational improvement opportunities, with performance monitored monthly by the Water Management Working Team.

Reduce Water use target by plant

Example of quantified target by plant to reduce water use per production

GPSC Water Index (m ³ /MWh Net)										
Plant	2022 Full Year	2023 Full Year	2024 Full Year	2025 Full Year Target L1	Actual Q1	Actual Q2	Actual Q3	Actual Q4	KPI(2024 Full Year Target L1 (+5% of L3))	Full Year Target L5 (-5% of L3)
CUP134	0.927	0.712	0.746	0.75	0.670	0.835	0.5	0.775	0.75	0.75
CUP2	1.485	1.577	1.386	1.48	1.568	1.5	1.481	1.446	1.409	1.409
Glow MTP Ph2	1.009	0.496	0.708	0.73	0.480	0.5	0.725	0.719	0.701	0.701
Glow MTP Ph3	0.527	0.500	0.415	0.48	0.615	0.5	0.493	0.481	0.469	0.457
Glow SPP11	1.577	1.501	1.237	1.23	1.475	1.5	1.494	1.438	1.402	1.366
GHECO1	0.094	0.156	0.134	0.13	0.13	0.131	0.131	0.128	0.125	0.122
Glow IPP	1.277	1.286	1.214	1.21	1.2	1.322	1.290	1.259	1.227	1.196
SRC	1.076	1.001	1.535	1.53	1.5	1.264	1.234	1.204	1.174	1.144
RDF	8.571	7.947	6.075	6.07	6.188	7.907	7.719	7.531	7.343	7.154
Glow Energy Solar Farm	0.337	0.432	0.484	0.48	0.268	0.439	0.428	0.418	0.407	0.397
Total	0.744	0.748	0.617	0.70	0.727	0.738	0.720	0.703	0.685	0.668

Note:
1) Excluded Sea Water Consumption
2) Excluded Water Export to Industrial Customers
3) CUP1 CF import meter read error, so applied 30% addition for correction factor. [Fixed as of Jun 2024]
4) Excluded Water Consumption during EGAT dispatched reserve shutdown for IPP Business.
5) 2025 Target is averaged 2022-2024.

Coverage of Water Reduction Targets

Water reduction targets are established across GPSC's major operational sites, collectively covering the majority of operational sites. Targets are tailored to site-specific water-use profiles and reduction opportunities.

Example: MTP Area Target 5% water saving from normal daily water consumption

Example of water use assessment by plants

GPSC Group Water 3R Program																	
			Normal Daily Water Consumption for MTP Area			m ³ /d											
			Total Target			5.00% Water Saving of Normal Daily Water Consumption for MTP Area		m ³ /d									
						10.00% Water Saving of Normal Daily Water Consumption for MTP Area		m ³ /d									
								68,354									
								3,418									
								6,835									
2. Set quantifiable targets																	
3. Monitor monthly progress																	
1. Identify high-potential sites																	
Item No.	ID	Area	Plant	Project	Eng. Unit	Project Stage	Remark	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Water Saving per Day	Water Saving per Month	Water Saving per Year
				Total Actual		Day	L1-L5	31	29	31	30	31	30	31			
				Total Actual				592,124	559,764	600,085	583,614	627,995	685,545	682,940	7,965	238,944	2,883,297
				Total Actual				296,062	275,882	300,042	291,807	313,998	342,772	341,470	7,420	222,613	2,685,702
1	WR-CU1-24-01	MTP	CUP1	Reduce steam denox 10% by increase ammonia injection instead (Based on 2" 4-8 m ³ /h)	m ³	L5									189	5,681	69,120
2	WR-CU1-24-02	MTP	CUP1	Reduce continuous blow down 90% by increase chemical feed instead (Based on 2" 6-12 m ³ /h)	m ³	L5										5,113	62,208
3	WR-CU1-24-03	MTP	CUP1	Reduce cooling blow down 50% by increase chemical feed instead (Based on 2.12 m ³ /h)	m ³	L5										753	9,158
4	WR-CU1-24-04	MTP	CUP1	Recycle sampling TOC to cooling basin	m ³	L5											2,213
5	WR-CU1-24-05	MTP	CUP1	On RO-After Mix Bed for reducing TOC<300ppb for AVT by reusing RO-water reject 100% assume 2" 2'-rain-60m ³ /h	m ³	L5	Start as of Jul 24								1,420	42,608	518,400
6	WR-CU2-24-06	MTP	CUP2	Routing Blowdown to Water Spray Blowdown Tank	m ³	L5	Project Phase 1 and Phase 2	14,400	14,880	14,400	14,880	14,880	14,400	14,880	463	13,894	166,730
7	WR-CU2-24-07	MTP	CUP2	FESQ Improved Demin Water throughput of Mixed Bed	m ³	L5		639	658	660	413	715	509	654	19	564	6,771
8	WR-CU2-24-08	MTP	CUP2	Recovery Cleaning Water from Sludge Disposal by Improvement Filter Press System	m ³	L5		20	42	19	35	29	30	22	1	28	337
9	WR-CU2-24-09	MTP	CUP2		m ³	L5						4,821	4,666	4,821	159	4,769	57,232
10	WR-CU2-24-10	MTP	CUP2		m ³	L5	Synergy project just reduce to 7 m ³ /h, so no information from 7 to 6								96	2,880	35,040
11	WR-CU2-24-11	MTP	CUP2	Reduce 24HRSG Continuous Blowdown from 2 t/h to 1 t/h	m ³	L5									48	1,440	17,520
12	WR-CU2-24-12	MTP	CUP2	Reduce AB21 Continuous Blowdown from 1 t/h to 0.5 t/h	m ³	L5									12	360	4,380
13	WR-CU2-24-13	MTP	CUP2	New Brine-RO, Water saving 10 m ³ /hr	m ³	L4	Usage water from Holding pond 20 m ³ /hr, supply to new Brine-RO project and get to RO permeate 10								240	7,200	87,600
14	WR-CU3-24-14	MTP	CUP3	Increase STG31 Cooling Flow with Saving Water 15,073 m ³ /h when run low load	m ³	L5						6,971	6,882	6,971	268	8,062	105,632
15	WR-CU3-24-15	MTP	CUP3	Increase cycle MIXED POLISHER	m ³	L5									8	247	2,961
16	WR-CU3-24-16	MTP	CUP3	UP3 Saving kilowatt of Cooling tower unit (STG-31)	m ³	L5									60	1,799	21,583
17	WR-CU4-24-17	MTP	CUP4	Saving Service Water during Test Running Fire Water Pump	m ³	L5		1,796	1,796	2,245	1,796	1,796	2,245	1,796	65	1,942	23,306
18	WR-CU4-24-18	MTP	CUP4	Just Angle of Cooling Fan	m ³	L5		79	74	79	77	79	66	79	19	559	6,706
19	WR-CU4-24-19	MTP	CUP4	Re Retention Water for Watering Plants	m ³	L5		360	360	360	180	360	390	390	13	378	4,537
20	WR-CU4-24-20	MTP	CUP4	Reduce Blowdown Water of HRSG and Save CF Quenching	m ³	L5		8,620	8,988	8,620	8,310	8,620	7,448	8,620	274	8,217	98,605

In setting its water efficiency targets, GPSC follows a structured process:

1. **Identify high-potential sites** where operational characteristics indicate significant opportunities for water reduction.
2. **Set quantifiable targets** for each selected site, aligned with industry benchmarks and GPSC's long-term water strategy.
3. **Monitor monthly progress** through a digital dashboard and site-level performance reports, with oversight by the Water Management Working Team. This process ensures that water reduction efforts are data-driven, prioritized, and continually improved over time.

Application of water recycling

Water Recycling Initiative: Cooling Return Line Installation for Main Steam Blowdown Tank

Project Name: Install Line Cooling Return for Water Spray – Main Blowdown Tank (Efficiency Uplift)

Location: Central Utility Plant 2 (CUP2), GPSC



Objective:

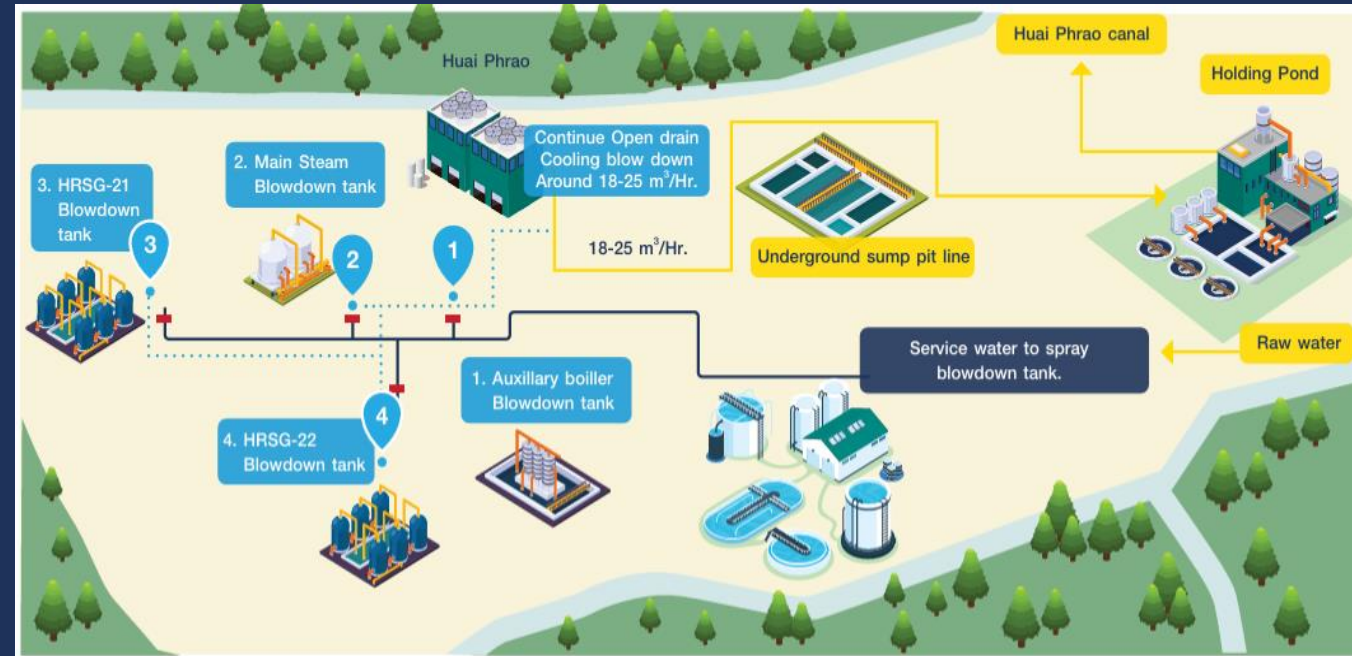
To reduce the use of service water by redirecting **cooling water return** to lower the temperature of the **main steam blowdown tank** prior to discharge into the underground sump pit. This initiative enhances **water efficiency**, **reduces freshwater dependency**, and supports GPSC's water crisis mitigation program.



Action Taken:

A new pipeline was installed to **tie in cooling water return** in place of service water for temperature control at the blowdown tank. The system was applied across three areas:

- Main blowdown: 5 m³/h saving
- AB21 blowdown: 3 m³/h saving
- HRSG blowdown: 10 m³/h saving



Example of Cooling Water Return System and Blowdown Tank Configuration at CUP2

Project Highlights (CUP2) :

- **Water Saved:** 18 m³/hour → 157,680 m³/year
- **Electricity Saved:** 0.589 kW → THB 22,659/year
- **Total Cost Savings:** THB 3.48 million/year
- **CO₂ Reduction:** 1,017 kg/year
- **Investment Cost:** THB 1.3 million
- **Payback Period:** 0.4 years

Application of water recycling

Water Recycling Initiative: WTP6 Water Recycle Optimization

Project Name: GEN Phase 2 – WTP6 Water Recycle Optimization

Location: Glow Energy Phase 2 – Water Treatment Plant (WTP6), GPSC



Objective:

To reduce raw water consumption and wastewater discharge by recovering backwash and flushing water generated from WTP6 and reusing it as part of the feed water supply for the TCC1 and TCC2 clarified water systems. The initiative improves water recycling efficiency and reduces dependency on external raw water sources.



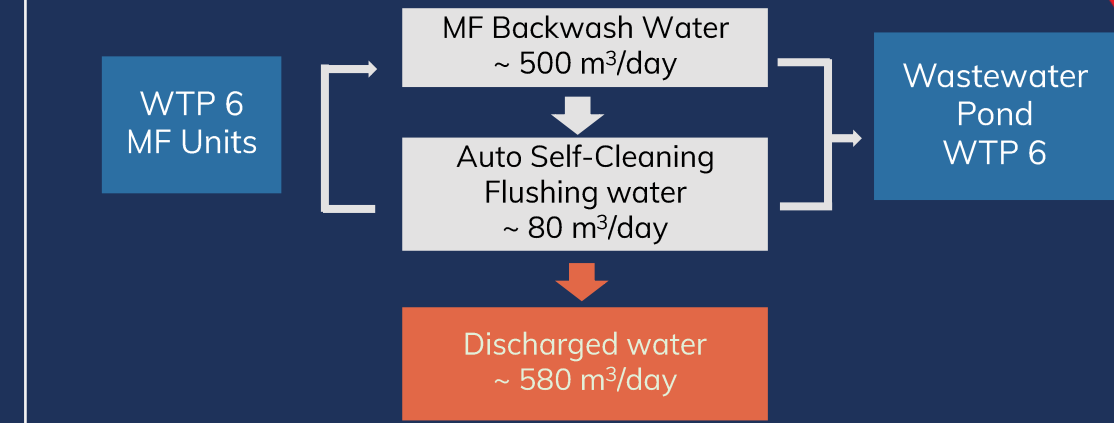
Action Taken:

GPSC modified the WTP6 piping system to redirect Microfiltration (MF) backwash and auto self-cleaning flushing water to the existing Q602 recycle pond instead of the wastewater pond. The recovered water is subsequently pumped and mixed with raw water at the inlet of the TCC1/TCC2 clarified water treatment system for reuse in plant operations.

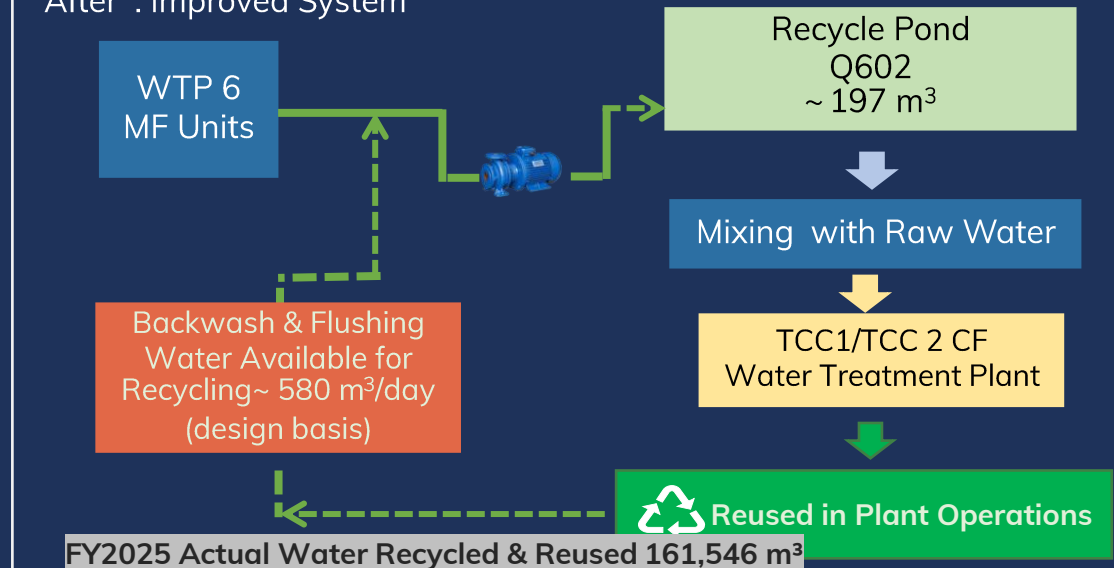
The modification included a new 8-inch recycled water pipeline of approximately 35 meters and a tie-in connection between the WTP6 MF backwash system and the existing recycle water system.

Water Flow Before & After Improvement

BEFORE : Original System



After : Improved System



Awareness training provided to employees on water efficiency management programs

In 2025, GPSC promoted employee awareness on water efficiency through both online and on-site knowledge-sharing events.

In May, GPSC joined the “One on One Online Sharing: Strengthen Water Efficiency,” where GC experts provided technical knowledge on increasing cooling water cycles and reducing blowdown through advanced water chemistry controls.



Additionally, in September, GPSC employees participated in the “**CoP #1/2567: Cooling Tower Optimization and Recent Technology**” held on-site at NPC S&E in Rayong. The event featured industry experts and cooling tower solution providers who shared best practices and recent innovations in optimizing cooling tower performance, reducing energy use, and minimizing water loss.

These programs strengthen employees' practical capability to identify water-efficiency opportunities, reduce water losses and consumption, and implement water-saving solutions in daily operations, in alignment with GPSC's water efficiency strategy.

THANK YOU

