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Updates on Water Environment Governance in Industrial Wastewater Management

Viet Nam

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1.1 Regulatory framework for wastewater management

GOAL

- **Discharge sources into surface water environment must be managed in accordance with the purpose of use and the carrying capacity of the surface water environment. Apply the principles of integrated river basin management.** *(Law on Environmental Protection 2020)*
- **Prevent and control actively negative impacts causing environmental pollution, degradation, and emergencies.** *(National Environmental Protection Strategy 2030, 2050)*

Industrial wastewater measures

- Develop, implement Surface Water Quality Control Plans for rivers and lakes, especially basins of Nhue - Day rivers, Cau River, Ma River, Vu Gia - Thu Bon rivers, and Dong Nai River.
- Classify manufacturing facilities by level of risk of environmental pollution; focus on strictly controlling facilities with high risks of environmental pollution and/or high volume discharge. Implement the roadmap for application of best available techniques (BAT)
- Promote wastewater treatment from agricultural activities and craft villages. Implement decentralized wastewater treatment models in areas where collection conditions are not available. Implement wastewater treatment to meet standards in all industrial parks, clusters, industrial facilities, and hospitals.
- Increase penalties and add enforcement measures for administrative violations.

Domestic wastewater measures

- Enhance domestic wastewater collection and treatment system combining with renovation and restoration of lakes, canals in major urban areas. Implement municipal wastewater treatment plans and restore seriously polluted rivers, canals.
- Setting guidance on technologies and techniques for in situ wastewater treatment.

National Government

Local Government

Industries *(Compliance)*

National Government
Local Government
Individual/household

National Government

- Vision;
- Law, strategy, regulations;
- Technical standards;
- Develop and adopt IWRM plans, SWQC plans of interprovincial river basins.
- Approve EIA, Environmental permits (as stipulated)

Sharing Responsibility
*** Enhance Decentralization and Delegation**

Local Government

- Develop Provincial plans (environmental, wastewater discharge zonning...);
- Imlement IWRM plans, SWQC plans;
- Local technical standards
- EIA,Environmental permits approvals (as stipulated).
- Invest, operate, manage municipal wastewater treatment plans.
- Monitoring, observing wastewater treatment.

* Restructuring of ministerial and administrative units
* Implementation of the 2-level local government model

1.2 Basic regulations on industrial wastewater management

Subject to regulation	
Types of industries	☒ All industries ☐ Selected industries
Applicable effluent volume	- Environmental permit, Environmental registration, exemption of E. permit/registration. - Wastewater monitoring.
How are the standard values set?	☐ Uniform ☐ Depend on sectors ☒ Other (specify: Uniform + additional standards to selected industries)
Possibilities of setting more stringent standards	☒ Yes ☐ No
Transition periods, provisional standards, or other (to give industries time to adapt to emission standards)	☒ Transition period ☐ Provisional standards ☐ Other
Relevant laws to regulate effluent qualities from industries	• Law on Environmental Protection 2020 • Decree 08/2022/ND-CP and Decree 05/2025/ND-CP (amending Decree 08) • QCVN 40:2025/BTNMT (New)

Monitoring and inspection	
Monitoring method	☒ Self (automated) ☐ Gov. or 3rd party
Monitoring parameter(s)	Comply with the provisions of the Decree 05/2025/ND and Environmental Permit.
Frequency	Automatic, continuous and/or periodic monitoring
Inspecting agency	Government Inspectorate or Provincial Inspectorates (New)
Inspection	GI/PIs may conduct inspections of industries in the form of planned inspection (according to the promulgated general inspection plan) or ad-hoc inspection.
Reporting obligation	Annually/biannual depends on business type
Reporting to (whom)	MAE and DAE
Number of regulated facilities	Database is under construction
How to identify the facility number	Investigation, permitting…

Environmental Permit

- ≧ 20 m3/day of Domestic Wastewater
- ≧ 10 m3/day of Livestock, Slaughterhouse Wastewater
- Industrial wastewater generated from sectors in the list of production, business, and service sectors at risk of causing environmental pollution (Appendix II, Decree 05/2025/ND-CP).

Environmental Registration

- From 5 m3/day to <20 m3/day of Domestic Wastewater
- From 5 m3/day to <10 m3/day of industrial wastewater
- < 5 m3/day of wastewater without treatment in situ wastewater works and equipment/ stipulated by local government.
- Industrial wastewater generated from sectors in the Appendix II and collected to centralized wastewater treatment plant.

Exemption of Permit or Registration

< 5 m3/day of wastewater treated in situ wastewater works and equipment/ stipulated by local government.

Wastewater volume & Wastewater Monitoring Requirement	
- Industries in the Appendix II: Average volume: 200m^3/day-500m^3/day; Large volume: ≧500 m^3/day. - Industries outside of the Appendix II: Average volume: 500m^3/day- 1.000m^3/day; Large volume: ≧1.000 m^3/day.	**Automatic and continuous monitoring:** +) 200m^3/day for industrial wastewater of sectors in the Appendix II. +) 500m^3/day for industrial wastewater of sectors outside of the Appendix II.

Appendix II

LIST OF TYPES OF PRODUCTION, BUSINESS AND SERVICES WITH RISK OF CAUSING ENVIRONMENTAL POLLUTION

TT	Types of production, business and services that pose a risk of environmental pollution	Capacity		
		Big	Medium	Small
(1)	(2)	(3)	(4)	(5)
I	**Level I**			
1	Enrichment, processing of toxic minerals, metal minerals; mineral processing using toxic chemicals; [1]	From 200,000 tons of ore as input material/year or more	Under 200,000 tons of ore as input material/year	Are not
	Glass production (except for the type that only uses gas and DO oil as fuel and does not have a silicon refining stage) [2]	From 200,000 tons of products/year or more	From 5,000 to under 200,000 tons of products/year	Under 5,000 tons of products/year
2	Metal production (except for one or more of the following operations: rolling; drawing; casting from raw materials) [3]	From 300,000 tons of products/year or more	Under 300,000 tons of products/year	Are not
3	Production of paper and paper products (with pulp production or using recycled materials) [4]	From 50,000 tons of products/year or more	From 5,000 to under 50,000 tons of products/year	Under 5,000 tons of products/year
4	Manufacture of basic inorganic chemicals (except industrial gases) [5], chemical fertilizers (except with only one or more stages: grinding; mixing; pelleting; decanting; packaging) [6], plant protection chemicals (except with only one or more stages: mixing; decanting; packaging) [7]	From 5,000 tons of products/year or more	From 1,000 to under 5,000 tons of products/year	Under 1,000 tons of products/year
5	Fabric, yarn, textile production (with one of the following stages: dyeing; washing;	From 50,000,000 m2 / year or from 10,000 tons of products/year	From 5,000,000 to less than 50,000,000 m2 / year or from	Under 5,000,000 m2 / year or under 1,000 tons
6	Leather production (with tanning) [9]; tanning	From 10,000 tons of products/year or more	From 1,000 to under 10,000 tons of products/year	Under 1,000 tons of products/year
7	Crude oil and natural gas exploitation [10]	All	Are not	Are not
	Refining, petrochemical [11]	From 1,000,000 tons of products/year or more	Under 1,000,000 tons of products/year	Are not
8	Coal-fired thermal power [12]	From 600 MW and above	Under 600 MW	Are not
	Coke production [13]	From 100,000 tons of products/year or more	Under 100,000 tons of products/year	Are not
	Coal gas production [14]	From 50,000 m3 of gas/hour or more	Under 50,000 m3 gas /hour	Are not
II	**Level II**			
9	Recycling and treatment services for domestic solid waste and common industrial solid waste [15]	From 500 tons/day or more	Under 500 tons/day	Are not
	Recycling and hazardous waste treatment services [16]; dismantling of used ships [17]; import of scrap from foreign countries as raw materials for production [18]			
10	Production of products with metal plating process; plating with metal surface cleaning process using chemicals, except for the case specified in serial number 17 of this column [19]			
11	Battery production [20]			

[1] Code B according to Vietnam's economic sector; toxic minerals according to the law on minerals; toxic chemicals according to the law on chemicals.

[2] Code 231 according to Vietnam's economic sector.

[3] Code 24 according to Vietnam's economic sector.

[4] Code 17 according to Vietnam's economic sector.

[5] Codes: 20112, 20113, 20119 according to Vietnam's economic sectors (except for organic chemical production).

[6] Code 2012 according to Vietnam's economic sectors (except for organic fertilizer production).

[7] Code 2021 according to Vietnam's economic sub-sectors (except for production of biological pesticides according to regulations on plant protection and quarantine).

1.3 Effluent quality standard parameters (Uniform)

1) QCVN 25:2009/BTNMT - National technical regulation on wastewater of the solid waste landfill;

2) QCVN 28:2010/BTNMT - National technical regulation on health care wastewater;

3) QCVN 29:2010/BTNMT - National technical regulation on the effluent of petroleum terminal and stations;

4) QCVN 40:2011/BTNMT - National technical regulation on industrial wastewater;

5) QCVN 01-MT:2015/BTNMT - National technical regulation on the effluent of natural rubber processing industry;

6) QCVN 11-MT:2015/BTNMT - National technical regulation on the effluent of aquatic products processing industry;

7) QCVN 12-MT:2015/BTNMT - National technical regulation on the effluent of pulp and paper mills;

8) QCVN 13-MT:2015/BTNMT - National technical regulation on the effluent of textile industry;

9) QCVN 60-MT:2015/BTNMT - National technical regulation on the effluent of bioethanol processing;

10) QCVN 63:2017/BTNMT - National technical regulation on effluent discharged from the cassava starch processing factories;

11) QCVN 52:2017/BTNMT - National technical regulation on wastewater of steel industry.

QCVN 40:2025/BTNMT

National Technical Regulation on Industrial Effluent

Come into force: 01st, September 2025

❖ **Transitional clauses**

Operated facilities or investment project which has been approved EIA report/issued Environmental permit before September 01, 2025 may continue to apply the national technical regulation on effluent corresponding to the type of production, business or service and regulations of the local government (including the local technical regulation on effluent) until December 31, 2031.

❖ **Roadmap for application**

1. From September 01, 2025 , investment projects (including new investment projects, projects on investment in scale expansion and capacity increase which submit applications for appraisal of EIA report) must apply QCVN 40:2025/BTNMT.

2. As of January 01, 2032, operating facilities (transitional provision) shall comply with the requirements specified under QCVN 40:2025/BTNMT.

Available at: https://congbao.chinhphu.vn/tai-ve-van-ban-so-06-2025-tt-btnmt-44497-55552?format=pdf

❖ Application Roadmap and New Requirements of effluent quality standard

01st September 2025 (come into force)

From 01/9/2025 to 31/12/2031

From 01/01/2032

ISSUE NEW STANDARDS

- Industrial wastewater standard:
  QCVN 40:2025/BTNMT
- Livestock wastewater standard:
  QCVN 62:2025/BTNMT
- Domestic wastewater standard:
  QCVN 14:2025/BTNMT

TRANSITIONAL PHASE

- Facilities operating before 01/09/2025 can continue to apply the old standards.
- Allowed to comply with local regulations on wastewater.
- Encourage facilities to switch to the new standards early
- If there is a change in the function of the receiving water source, follow the roadmap prescribed by the competent state agency.

MANDATORY IMPLEMENTATION

- All transitional facilities must comply with the new standards.
- All old standards will be completely invalid and no longer applicable.

NEW POINTS

- **Application scope: wider** (including concentrated manufacturing, business and service areas, industrial clusters).
- **Discharge zoning: more detailed** for the wastewater receiving areas (A,B,C instead of A&B).
- **Parameter limits: tighter**, adding some new parameters; expanding control of toxic pollutants (AOX, dioxin/furan,...)
- Requires **tighter environmental monitoring** (including automatic continuous monitoring)…

QCVN 40:2025/BTNMT- National Technical Regulation on Industrial Effluent

Table 1. Permissible limit values of COD (or TOC), BOD, TSS

No.	Pollution parameter	Unit	Discharge flow (F, m3/day)					
			F ≤ 2 000			F > 2 000		
			A	B	C	A	B	C
1	BOD5 (20°C)	mg/L	≤ 40	≤ 60	≤ 80	≤ 30	≤ 50	≤ 60
2	COD	mg/L	≤ 65	≤ 90	≤ 130	≤ 60	≤ 70	≤ 90
	or TOC	mg/L	≤ 35	≤ 50	≤ 75	≤ 25	≤ 40	≤ 50
3	TSS	mg/L	≤ 40	≤ 80	≤ 120	≤ 30	≤ 60	≤ 80

- *Column A* specifies permissible limit values of pollution parameters in effluent when discharged into water receiving bodies having the function of supplying water for domestic purposes or for the purpose of managing and improving water quality to satisfy the requirements of Level A in Table 2 and Table 3 QCVN 08:2023/BTNMT - National technical regulation on surface water quality or regulations of provincial People's Committees.
- *Column B* specifies permissible limit values of pollution parameters in effluent when discharged into water receiving bodies with the aim of managing and improving water quality to satisfy the requirements of Level B in Table 2 and Table 3 QCVN 08:2023/BTNMT - National technical regulation on surface water quality or regulations of provincial People's Committees.
- *Column C* specifies permissible limit values of pollution parameters in the effluent when discharged into water receiving bodies not falling into the cases specified above.

Available at: https://congbao.chinhphu.vn/tai-ve-van-ban-so-06-2025-tt-btnmt-44497-55552?format=pdf

Table 2. Permissible limit values of pollution parameters specific to type of production, business or service

No.	Pollution parameter	Unit	A	B	C
1	pH	-	6 - 9	6 - 9	6 - 9
2	Temperature	°C	≤ 40	≤ 40	≤ 40
3	Total Nitrogen (T-N)	mg/L	≤ 20	≤ 40	≤ 60
4	Total Phosphorus (T-P)	mg/L			
4.1	Receiving bodies being lakes, ponds, lagoons (collectively called as "lakes")		≤ 2,0	≤ 2,5	≤ 3,0
4.2	Receiving bodies being rivers, streams, creeks, canals, ditches (collectively called as "rivers"), seawater areas: applicable to investment projects and establishments belonging to the type of aquaculture, aquatic product processing, cassava starch processing and natural rubber latex processing		≤ 8,0	≤ 14	≤ 18
4.3	Receiving bodies being rivers, seawater areas: applicable to investment projects and establishments other than those specified in 4.2 of this Table		≤ 4,0	≤ 6,0	≤ 10
5	Total Coliforms	MPN or CFU/100 mL	≤ 3 000	≤ 5 000	≤ 5 000
6	Color	Pt/Co	≤ 50	≤ 100	≤ 150
7	Arsenic (As)	mg/L	≤ 0,05	≤ 0,25	≤ 0,25
8	Mercury (Hg)	mg/L	≤ 0,001	≤ 0,005	≤ 0,005
9	Lead (Pb)	mg/L	≤ 0,1	≤ 0,5	≤ 0,5
10	Cadmium (Cd)	mg/L	≤ 0,02	≤ 0,1	≤ 0,1
11	Chromium VI (Cr^{6+})	mg/L	≤ 0,1	≤ 0,5	≤ 0,5
59	Styrene ($C_6H_5CH=CH_2$)	mg/L	<0,02	<0,2	<0,2
60	Bis (2-ethylhexyl) adipate ($(CH_2CH_2CO_2C_8H_{17})_2$)	mg/L	< 0,2	< 2,0	< 2,0
61	Sulfite (expressed as SO_3^{2-})	mg/L	<5,0	< 10	< 15

How the effluent standards are set…

❑ Technical requirements

Pollution parameter	Unit	F ≤ 2 000			F > 2 000		
		A	B	C	A	B	C
BOD5 (20°C)	mg/L	≤ 40	≤ 60	≤ 80	≤ 30	≤ 50	≤ 60
COD	mg/L	≤ 65	≤ 90	≤ 130	≤ 60	≤ 70	≤ 90
or TOC	mg/L	≤ 35	≤ 50	≤ 75	≤ 25	≤ 40	≤ 50
TSS	mg/L	≤ 40	≤ 80	≤ 120	≤ 30	≤ 60	≤ 80

Effluent discharge flow (m3/day)

Use purposes of receiving watersource

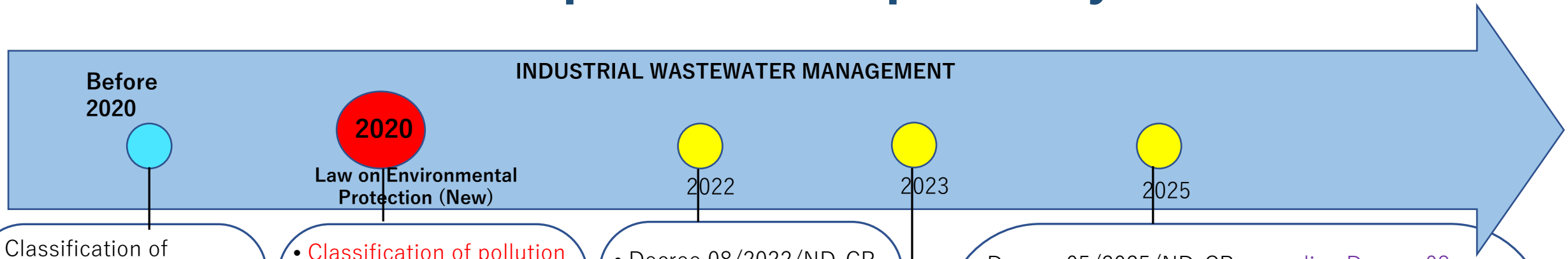
Inter-provincial river basin planning; Provincial planning ⟺ **Surface Water Quality Control Plan of River/River basin**

❑ Managerial requirements

Pollution parameters and permissible limit values of pollution parameters in industrial effluent of investment projects and establishments discharging effluent must be **indicated in the Decision on approval for result of EIA report appraisal, Environmental Permit**, including:

- pH, Total Coliforms and pollution parameters are specified in Table 1
- Pollution parameters specific to each type of production, business or service *(Characteristic and potential pollution parameters of industrial sector in Appendix II of the Regulation).*
- Chloroform, Chlorine in case any investment project or establishment discharging industrial effluent uses Chlorine or Chlorine-based disinfectants.
- One or more pollution parameters specified in Table 2.
- New characteristic pollution parameters not specified in Table 1 and Table 2 of this Regulation in case any investment project or establishment has technology or equipment which generates new characteristic pollution parameters.

1.4 Measures taken to improve the compliance by industries



- Classification of pollution risk: List of industrial types that pose a risk of environmental pollution (2019).
- Effluent Standards: General standard (QCVN 40:2011/BTNMT) and Sectorial effluent standards (11).
- Wastewater monitoring: Mainly periodic monitoring (Automatic continuous monitoring: 2019).
- Wastewater discharge permit (Law on Water Resources).
- …

- Classification of pollution risk (sectorial types, effluent volume).
- Wastewater monitoring: Automatic continuous + Periodic monitoring.
- Surface Water Quality Control Plans (Assessing carrying capacity, zoning and quotas for wastewater discharge; roadmap for reducing wastewater discharge into the surface water…)
- Environmental permit.
- Best Available Techniques (BAT)
- More strict requirements on industrial wastewater treatment.

- Decree 08/2022/ND-CP guiding implementation of Law on Environmental Protection;
- Decree 45/2022/ND-CP on Penalties for administrative environmental protection offences;
- Circular 02/2022/TT-BTNMT detailing a number of articles of LEP.

- Law on Water Resources (New)
- New Ambient water quality standard (QCVN 08:2023/BTNMT)
- Technical guidance on SWQCP

- Decree 05/2025/ND-CP amending Decree 08.
- Decree 163/2025/ND-CP on decentralization and delegation of authority in the field of agriculture and rural development.
- Circular 07/2022/TT-BTNMT amending Circular 02.
- New industrial quality standards (QCVN 40:2025/ BTNMT).
- Changes in competent state management agencies (MONRE -> MAE, DONRE-> DAE, 63 provinces -> 34 provinces, 2-level local management)
- New inspectorates and inspection regulations.
- (Draft) Circular guiding on assessment of the carrying capacity of river, lake.
- (Draft) Surface water quality control plans of river basins.
- (Draft) Decree amending the Decree 45 (increasing penalties, adding violations, remedial and enforcement measures)

1.5 Compliance: Incentives and Penalties

Incentive	
Appeals to the public, such as awards and ranking	”Green Enterprise”, “Green Book” – local/provincial level
Financial incentive	Green credit, green bonds for investment projects in the green taxonomy.
Institutional incentives such as preferential approval	N/A
Others	Roadmap for BAT application.

Penalty	
Imprisonment	1) From 02 - 03 years or fine; 2) From 03 - 05 years or fine; 3) From 05 - 07 years or fine; (depending on effluent volume and number of times exceeding the threshold of hazardous pollutant parameters)
Fine	Maximum fine: • 01 billion VND (for individuals) • 02 billion VND (for organizations)
Other	• Operation suspension; • Suspension of environmental permit; • Mandatory application of remedial measures against environmental pollution…

1.6 Current status of industrial wastewater management in Vietnam

By the end of 2024, Vietnam has **447** established industrial parks, of which 304 industrial parks have come into operation; the occupancy rate is about 55.6%.

- **286/304 industrial parks** have come into operation with centralized wastewater treatment facilities meeting environmental standards (**94.1%**); **100%** of which have installed automatic, continuous wastewater monitoring systems and transmitted data to the DAE and MAE.
- **228/724 industrial clusters** have wastewater treatment systems in operation (**31.5%).**

Big problem: - Craft village clusters, especially recycling craft villages, still causes water pollution because most production facilities operate on a household scale, use outdated production technology, mostly not collected and treated wastewater.

- Domestic wastewater: The rate of domestic wastewater collected and treated is **very low:18%**. Currently having **83** centralized municipal wastewater treatment plants with a total designed capacity of **2.1 mil. m3/day**.

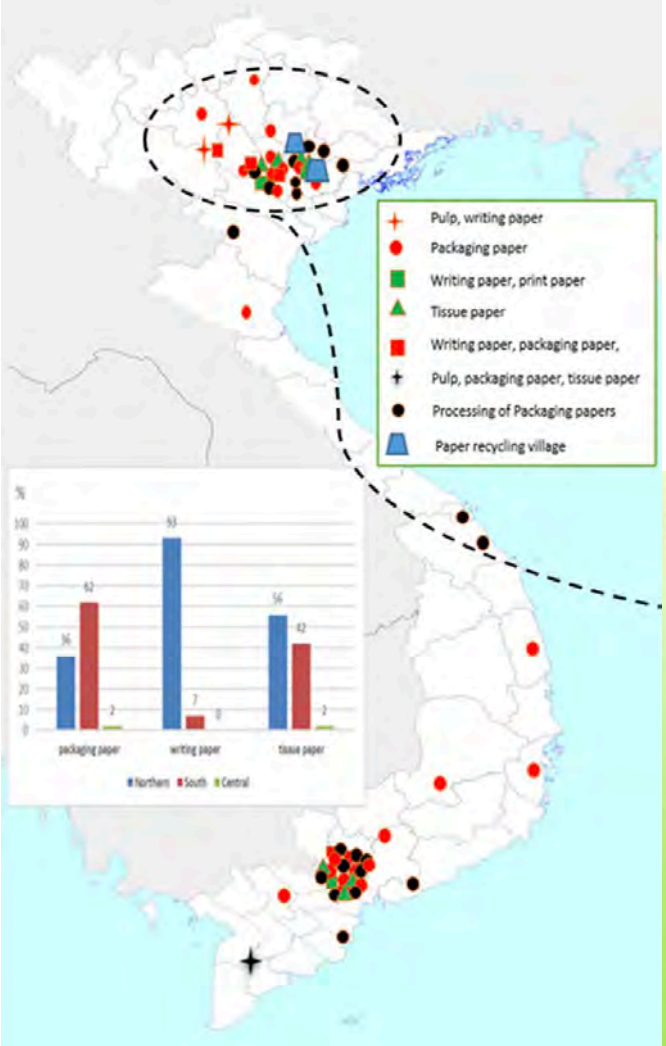
	Year								
	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Number and proportion of industrial parks with wastewater treatment systems meeting QCVN	216/283 (76,3%)	228/283 (80,1%)	221/251 (88,1%)	250/280 (89,3%)	255/285 (89,5%)	264/291 (90,7%)	266/293 (90,8%)	272/297 (91,6%)	286/304 (94,1%)
Number and proportion of industrial clusters with wastewater treatment systems meeting QCVN	52/584 (8,9%)	56/584 (9,6%)	109/689 (15,8%)	115/698 (16,5%)	120/698 (17,2%)	162/735 (22%)	179/734 (24,4%)	214/706 (30,3%)	228/724 (31,5%)
Proportion of craft villages with wastewater treatment systems that meet environmental requirements	-	-	-	-	16,1%	-	-	16,1%	16,6%

Key solutions in the coming time...

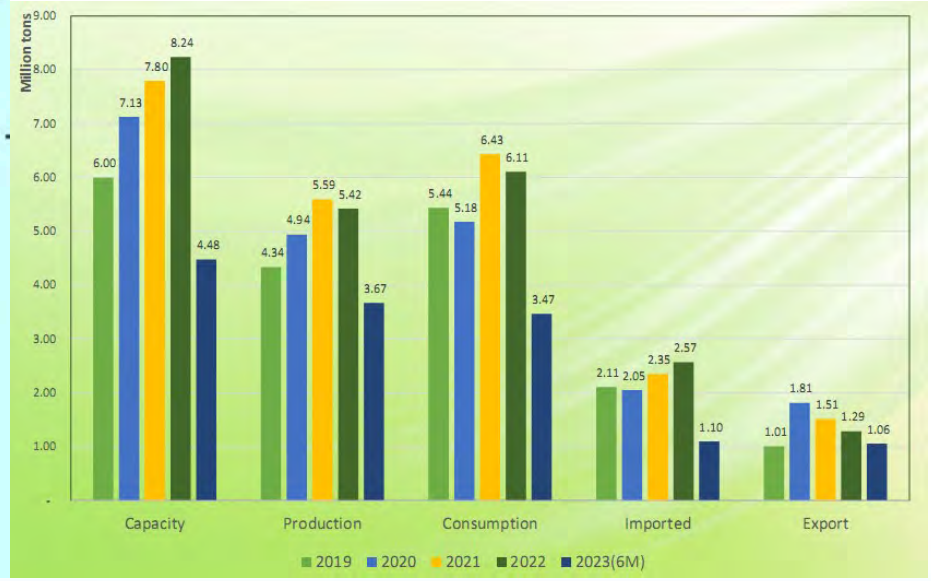
- **Controlling proactively large sources of waste and facilities with high risk of causing environmental pollution; prevent negative impacts on the environment.**
- **Focusing on strict environmental control of industrial parks, industrial clusters, and craft villages.**
- **Strengthening the construction of centralized database systems in localities to synchronize and exploit data to serve environmental pollution control work.**
- **Developing and implementing plans to respond to environmental incidents at all levels and at facilities at risk of environmental incidents; focus on organizing training and drills to respond to environmental incidents.**
- **Strengthen measures to prevent illegal import of waste in the form of scrap, import of old, outdated technologies that consume a lot of raw materials, materials, energy, and cause environmental pollution.**
- **Improving coordination between ministries and localities; the proactiveness and positivity of localities in implementing measures to control water pollution in accordance with local characteristics; promoting the promulgation of local technical regulations.**
- **Completing the assessment of the carrying capacity of surface water environment and developing Surface Water Quality Control Plans for inter-provincial river basins, focusing on: Cau, Nhue - Day, Vu Gia - Thu Bon, Dong Nai.**

2 Case study: Pulp and paper industry

Pulp and paper industry in Vietnam



- **Significant industrial sector, contributing about 1.5% of Vietnam's GDP.**
- **Having more than 500 manufacturing enterprises, of which: more than 20 enterprises with large capacity (65%), more than 480 enterprises with small and medium capacity (35%). There are some paper recycling craft villages.**
- **The total production capacity of the industry in 2022 will reach about 8.2 million tons, actual output is 5.7 million tons, consumption is 6.8 million tons, import is 1.8 million tons, export is 0.8 million tons.**



having big environmental impacts

- **High water demand and chemicals. High volume of effluent** (80m^3-500m^3/tone of product)
- **High pollutant loads** (SS, BOD, COD, color, sulfide,…) and **potential hazardous pollutants** (AOX, Dioxin, Chloroform…)
- Many pulp and paper facilities use **old technologies**, **no wastewater treatment** or **unsynchronized wastewater treatment system (**especially in the craft villages)
- **Causing serious water pollution** (especially in the craft villages)

2.2 Regulations applied to the pulp and paper industry

- **Classification into Level I of the Appendix II (**Types of production, business and services that pose a risk of environmental pollution)
-> Stricter requirements on EIA, environmental permit, wastewater treatment and wastewater quality monitoring…

- **Effluent Standard:** QCVN 40:2011/BTNMT and QCVN 12-MT:2015/BTNMT (before 01/9/2025) => New standard: QCVN 40:2025/BTNMT

No	Types of production, business and services that pose a risk of environmental pollution	Capacity		
		Big	Medium	Small
I	Level I			
3	Production of paper and paper products (with pulp production or using recycled materials) [4]	From 50,000 tons of products/year or more	From 5,000 to under 50,000 tons of products/year	Under 5,000 tons of products/year

No	Parameters		Unit	Giá trị C			
				A	B_1 Paper facility	B_2 Pulp mill	B_3 Pulp and paper facility
1	Temperature		° C	40	40	40	40
2	pH		-	6 - 9	5,5 - 9	5,5 - 9	5,5 - 9
3	BOD_5 (20⁰C)		mg/l	30	50	100	100
4	COD	New facility	mg/l	75	150	300	200
		Operating facility	mg/l	100	200	300	250
5	TSS		mg/l	50	100	100	100
6	Color (pH = 7)	New facility	Pt-Co	50	150	250	200
		Operating facility	Pt-Co	75	150	300	250
7	AOX		mg/l	7,5	15	15	15
8	Dioxin (Applied from 01/01/2018)		pgTEQ /l	15	30	30	30

QCVN 12-MT:2015/BTNMT

Table 1. Permissible limit values of COD (or TOC), BOD, TSS

No.	Pollution parameter	Unit	Discharge flow (F, m3/day)					
			F ≤ 2 000			F > 2 000		
			A	B	C	A	B	C
1	BOD5 (20⁰C)	mg/L	≤ 40	≤ 60	≤ 80	≤ 30	≤ 50	≤ 60
2	COD	mg/L	≤ 65	≤ 90	≤ 130	≤ 60	≤ 70	≤ 90
	or TOC	mg/L	≤ 35	≤ 50	≤ 75	≤ 25	≤ 40	≤ 50
3	TSS	mg/L	≤ 40	≤ 80	≤ 120	≤ 30	≤ 60	≤ 80
Notes: Organizations and individuals may choose to apply TOC or COD.								

Table 2. Permissible limit values of pollution parameters specific to type of production, business or service

No.	Pollution parameter	Unit	A	B	C
1	pH	-	6 - 9	6 - 9	6 - 9
2	Temperature	oC	≤ 40	≤ 40	≤ 40
3	Total Nitrogen (T-N)	mg/L	≤ 20	≤ 40	≤ 60
4	Total Phosphorus (T-P)	mg/L			
4.1	Receiving bodies being lakes, ponds, lagoons (collectively called as “lakes”)		≤ 2,0	≤ 2,5	≤ 3,0
4.2	Receiving bodies being rivers, streams, creeks, canals, ditches (collectively called as “rivers”), seawater areas: applicable to investment projects and establishments belonging to the type of aquaculture…		≤ 8,0	≤ 14	≤ 18
4.3	Receiving bodies being rivers, seawater areas: applicable to investment projects and establishments other than those specified in 4.2 of this Table		≤ 4,0	≤ 6,0	≤ 10
6	Color	Pt/Co	≤ 50	≤ 100	≤ 150
28	Sulfide (S2-)	mg/L	≤ 0,2	≤ 0,5	≤ 1,0
31	Chlorine residual	mg/L	≤ 1,0	≤ 2,0	≤ 2,0
35	Dioxin/Furan	pgTEQ/L	≤ 10	≤ 10	≤ 10
36	Absorbable organic halogens (AOX)	mg/L	≤ 7,5	≤ 15	≤ 15

QCVN 40:2025/BTNMT

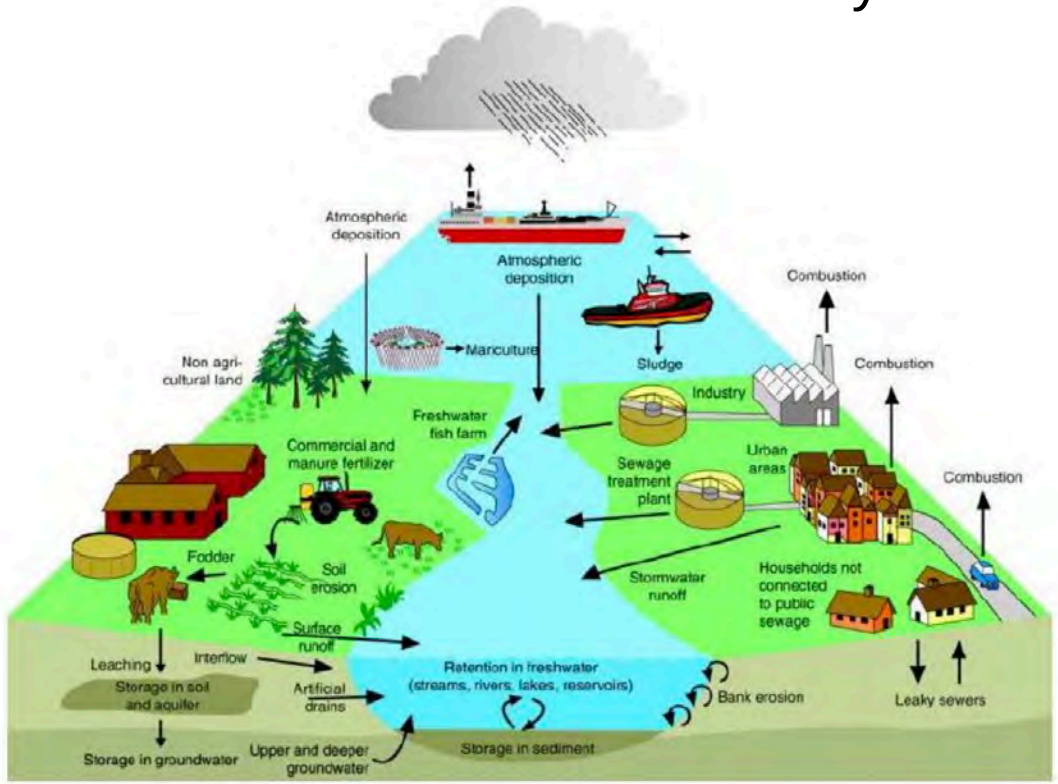
2.3 Sector's effort to comply requirements

To meet effluent standards and environmental requirements…

- **Applying appropriate technologies to treat effluent, improving wastewater treatment system.**
- **Installing automatic continuous wastewater quality monitoring equipment/stations and connecting the data to the Department of Agriculture and Environment.**
- **Applying Circular Economy models, BAT guideline for the pulp and paper industry** (The Draft of Technical guidelines on BAT for the pulp and paper industry is being developed)
- **Relocating scattered polluting facilities into industrial clusters in the craft village** (Ex. Bac Ninh province to relocate polluting paper mills by 2029 https://vietnamnews.vn/society/1662478/bac-ninh-to-relocate-polluting-paper-mills-by-2029.html)
- **Suspending the facilities causing serious environmental pollution.**

IN PROGRESS

- Approve the Surface Water Quality Control Plans for river basin
- Complete database system
- Implement Total Pollution Load Control System



Thank you for your attention!