



FiinGroup[®]
ENLIGHTEN THE MARKET

Sector Preview | Vietnam Wastewater

Exploring Long-Term Opportunities

For Publication | Date of Issue: 06 May 2024

A Series of Publication by

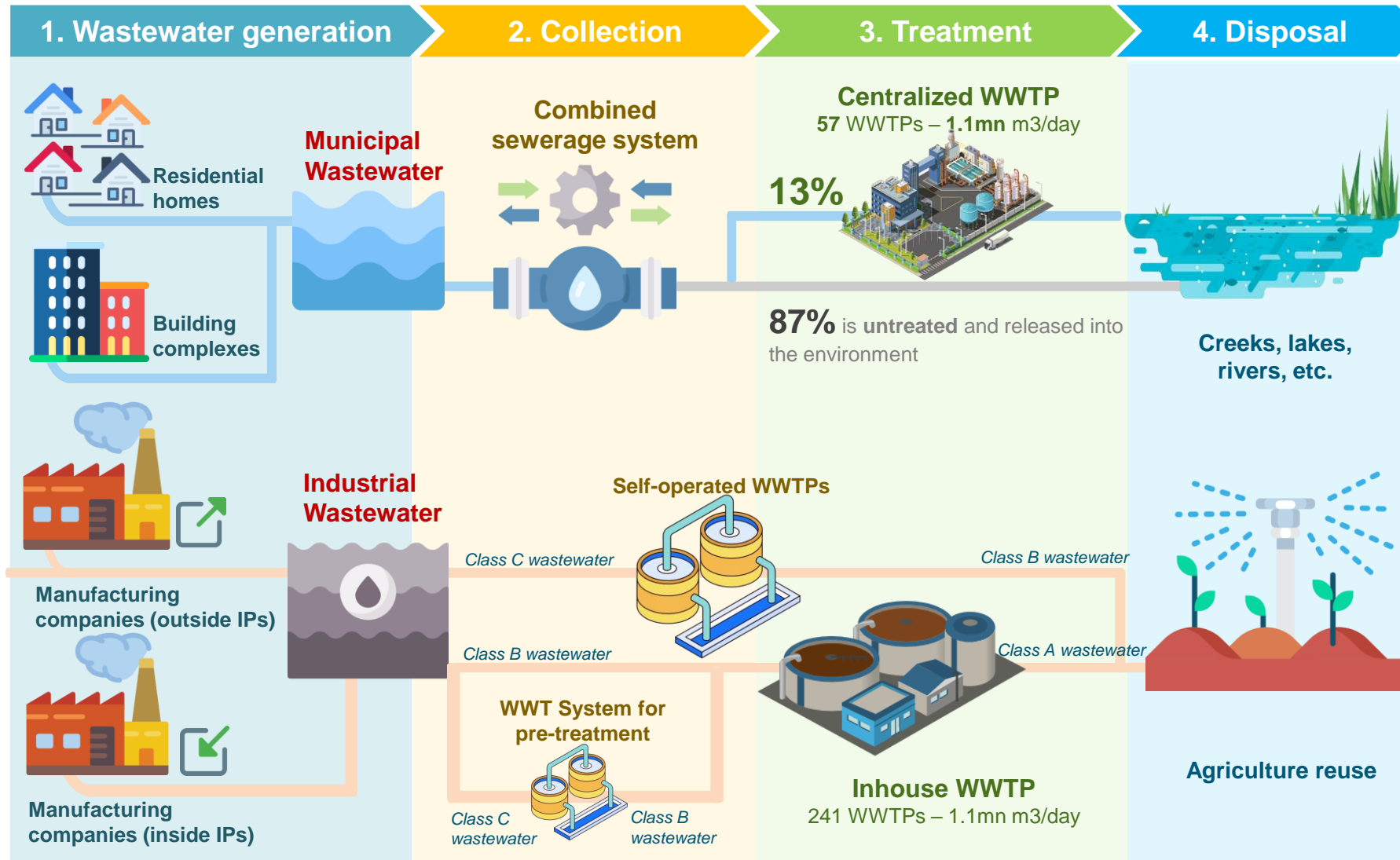
Market Research and Consulting Division, FiinGroup



87% of Municipal wastewater in Vietnam is untreated

and released into the environment such as creeks, lakes, rivers, etc.

Figure 1: Value Chain of Wastewater Treatment in Vietnam



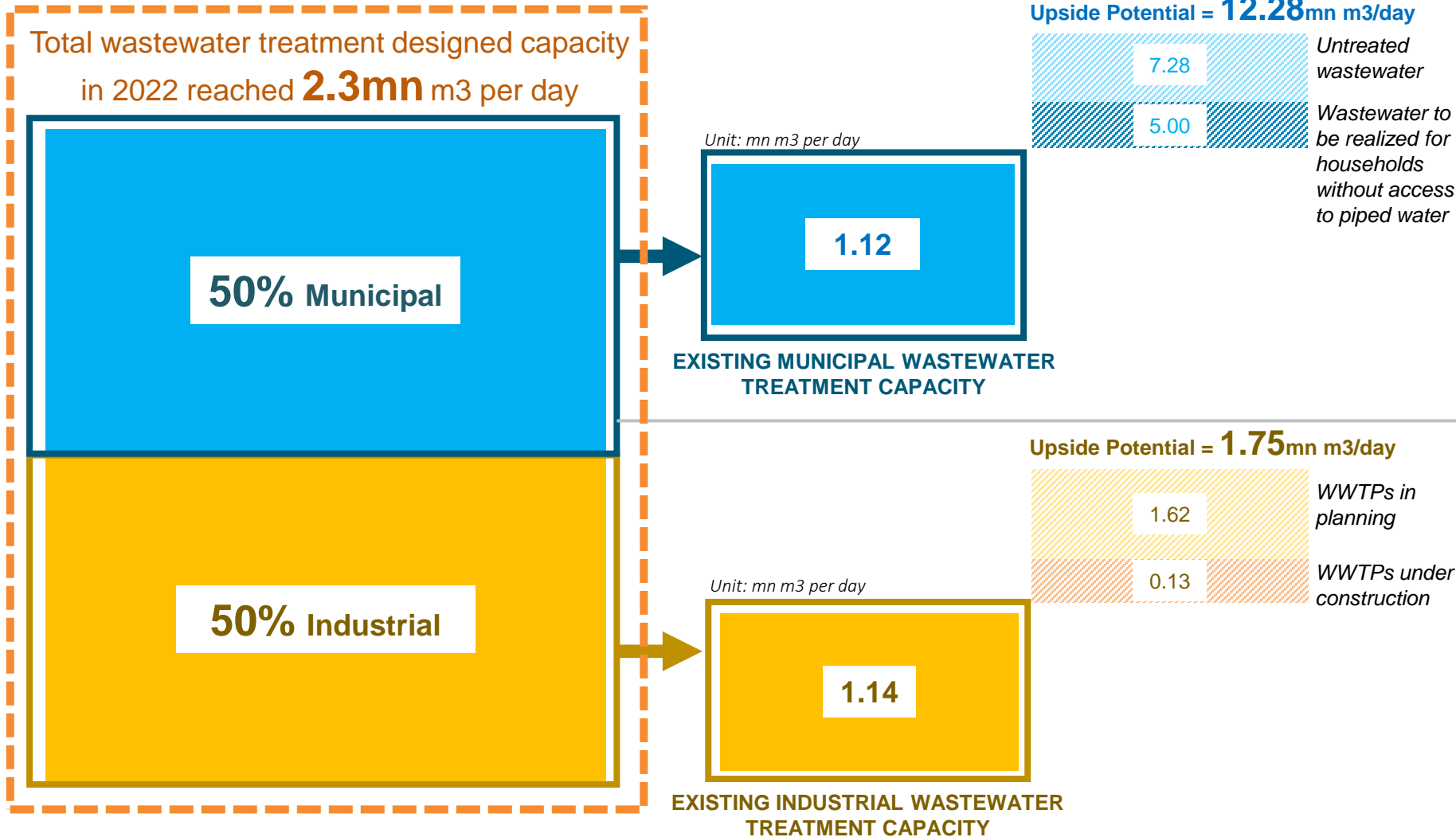
The majority of industrial wastewater undergoes treatment, yet 87% of municipal solid waste (MSW) remains untreated

- **Municipal wastewater** is mostly dumped into the environment. Only about 13% of the collected drainage and sewerage are treated by centralized wastewater treatment plants.
- **Industrial wastewater:** Most IPs in Vietnam have their in-house centralized wastewater treatment plant. Enterprises within an industrial park are required to emit their wastewater to a collection point, and from there to the centralized wastewater treatment system of the industrial park.

The wastewater treatment sector expects a robust uptrend to meet its upside

The total designed capacity reached 2.3mn m3/day while the upside potential is approximately six times higher

Figure 2: Wastewater Treatment Designed Capacity in Vietnam



➤ Major drivers include

- Low penetration rate
- Rapid development of industrial parks in Vietnam
- Rapid urbanization: With an expected national urbanization rate of 45% in 2025 and 50% in 2030, the solid waste volume is anticipated to enjoy strong growth in the coming period.

Source: FiinGroup



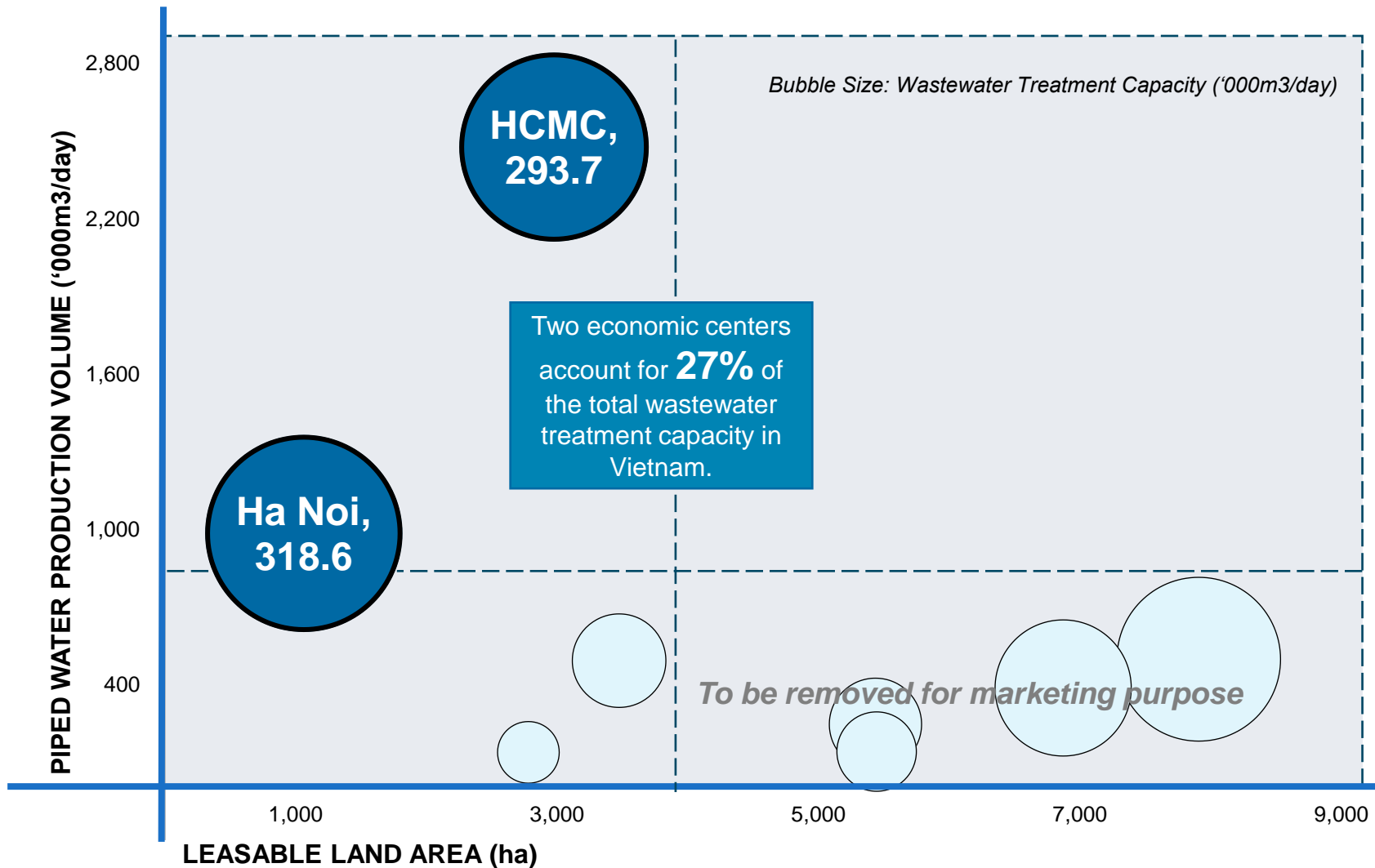
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Hanoi & HCMC dominate wastewater treatment market

as 40% of piped water is generated in the 2 provinces

Figure 3: Breakdown of Wastewater Treatment Capacity in Vietnam by Provinces, 2022



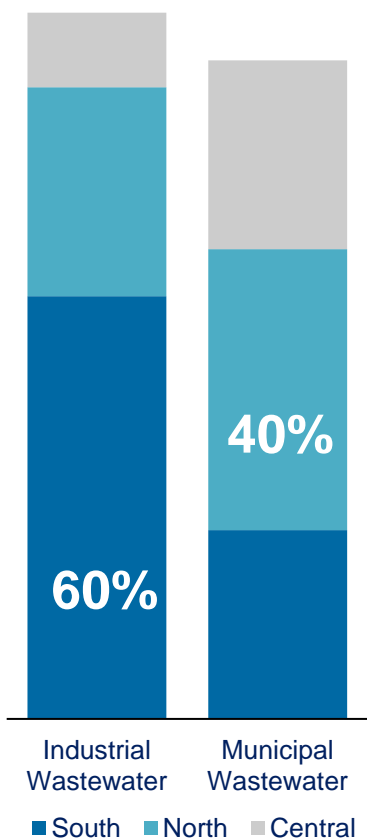
- **WWTPs concentrated** in provinces with prominent **industrial and economic zones** such as Hanoi, Binh Duong, Dong Nai, and HCMC.
- Given the rapid urbanization generating high waste volume, three major cities, namely **Da Nang, Hanoi, and HCMC**, are planning to **expand their wastewater treatment capacity by 2, 4, and 12 times**, respectively by 2030.

Source: FiinGroup's analysis

Amidst abundant opportunities, there are several challenges

for private investors to enter the wastewater treatment market in Vietnam

Figure 4: Breakdown of Wastewater Treatment Capacity in Vietnam by Regions, 2022



Source: FiinGroup

✓ KEY DRIVERS	✗ KEY CHALLENGES
<div style="background-color: #4CAF50; color: white; padding: 5px; border-radius: 5px; display: flex; align-items: center;"> INDUSTRIALIZATION & URBANIZATION </div> <ul style="list-style-type: none"> ❑ Urbanization: fast-paced urbanization contributes to higher waste generation in Vietnam, especially in metropolitan areas with an expected national urbanization rate of 45% in 2025 and 50% in 2030. ❑ Industrialization: According to the action plan Resolution No 23/NQ/TW, by 2030, the industrial sector will make up over 40% of GDP, in which manufacturing and processing industries will account for 30% and the manufacturing industry alone account for 20%. <div style="background-color: #4CAF50; color: white; padding: 5px; border-radius: 5px; display: flex; align-items: center;"> ZERO-WASTE COMMITMENT </div> <p>At the COP27, the Government announced the commitment to achieve the target of reaching Net-zero Emissions by 2050.</p> <ul style="list-style-type: none"> ❑ The total national GHG emission reduced by 43.5% by 2030. ❑ Methane emissions reduced by 30% levels by 2030, and by 40% levels by 2050. 	<div style="background-color: #FF9800; color: white; padding: 5px; border-radius: 5px; display: flex; align-items: center;"> DATED INFRASTRUCTURE </div> <ul style="list-style-type: none"> ❑ The urbanization rate of Vietnam has recently outpaced the development of wastewater treatment infrastructure. As a result, while the treatment capacity of centralized WWTPs is at decent levels, the actual treatment rate is hindered by weak collection networks. <div style="background-color: #FF9800; color: white; padding: 5px; border-radius: 5px; display: flex; align-items: center;"> LOW WASTEWATER TARIFF </div> <ul style="list-style-type: none"> ❑ Wastewater tariff and environment protection fee are mutually exclusive; those who pay one are exempted from paying the other. In particular, the treatment prices are still low and managed by the local/provincial authorities. <div style="background-color: #FF9800; color: white; padding: 5px; border-radius: 5px; display: flex; align-items: center;"> WEAK COST RECOVERY </div> <ul style="list-style-type: none"> ❑ The construction of centralized WWTPs is often financed by the government and partially backed by loans from international donors. ❑ The revenue from wastewater tariffs (or the environment protection fee in some cases) does not cover the operating expenses of centralized WWTPs. As a result, government subsidies have become vital in the operations of such facilities, which can cause uncertainties in service levels.

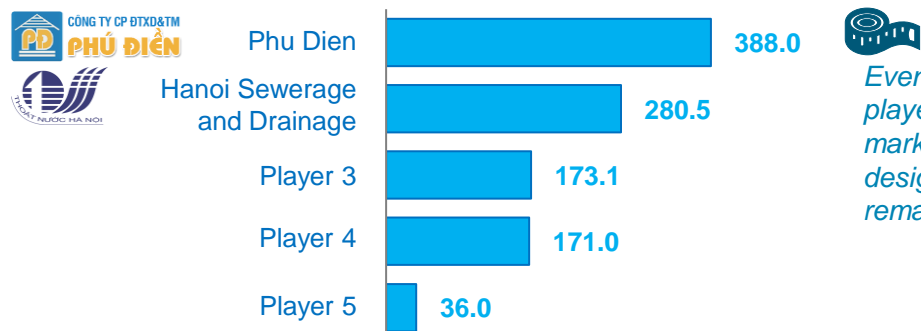
Limited capacity of existing WTP unveils long-term opportunity for new investors

to seize the market potential in long-term

Municipal Wastewater Segment

Centralized WWTPs

Top 5 leading developers/operators by treatment capacity ('000 m3/day)



Even among major players in the market, their designed capacity remains limited

Urban WWTPs

Urban WWTPs are typically developed by real estate developers and operated by the urban area's management board

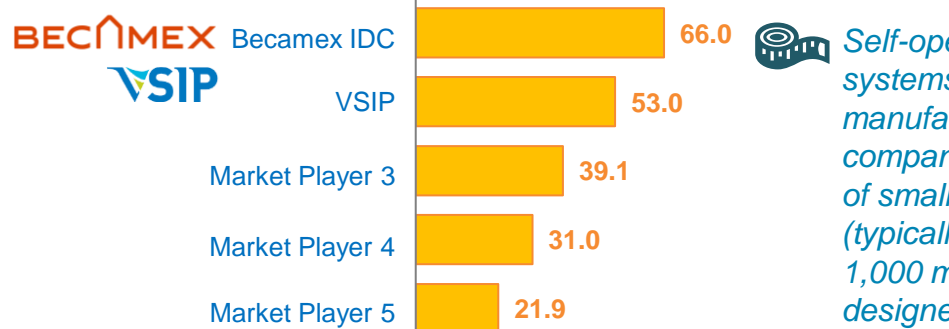
Current situation

- The majority of centralized wastewater treatment plants (WWTPs) were funded through public investment projects, utilizing ODA funds or state budgets, and were subsequently managed by SOEs.
- The number of foreign-owned companies penetrating the wastewater sector remains limited due to (i) complicated administrative procedures (ii) low tariffs/fees and (iii) insufficient local connections.

Industrial Wastewater Segment

Centralized WWTPs

Top 5 leading developers/operators by treatment capacity ('000 m3/day)



Self-operated WWT systems by manufacturing companies are often of small scale (typically less than 1,000 m3/day in designed capacity)

Self-operated

Self-operated WWT systems are typically operated by wastewater dischargers (i.e. manufacturing companies)

Prospect:

- Current constraints on public funds for wastewater treatment create opportunities for the private sector to capitalize on the market potential in the long term

Source: FiiGroup

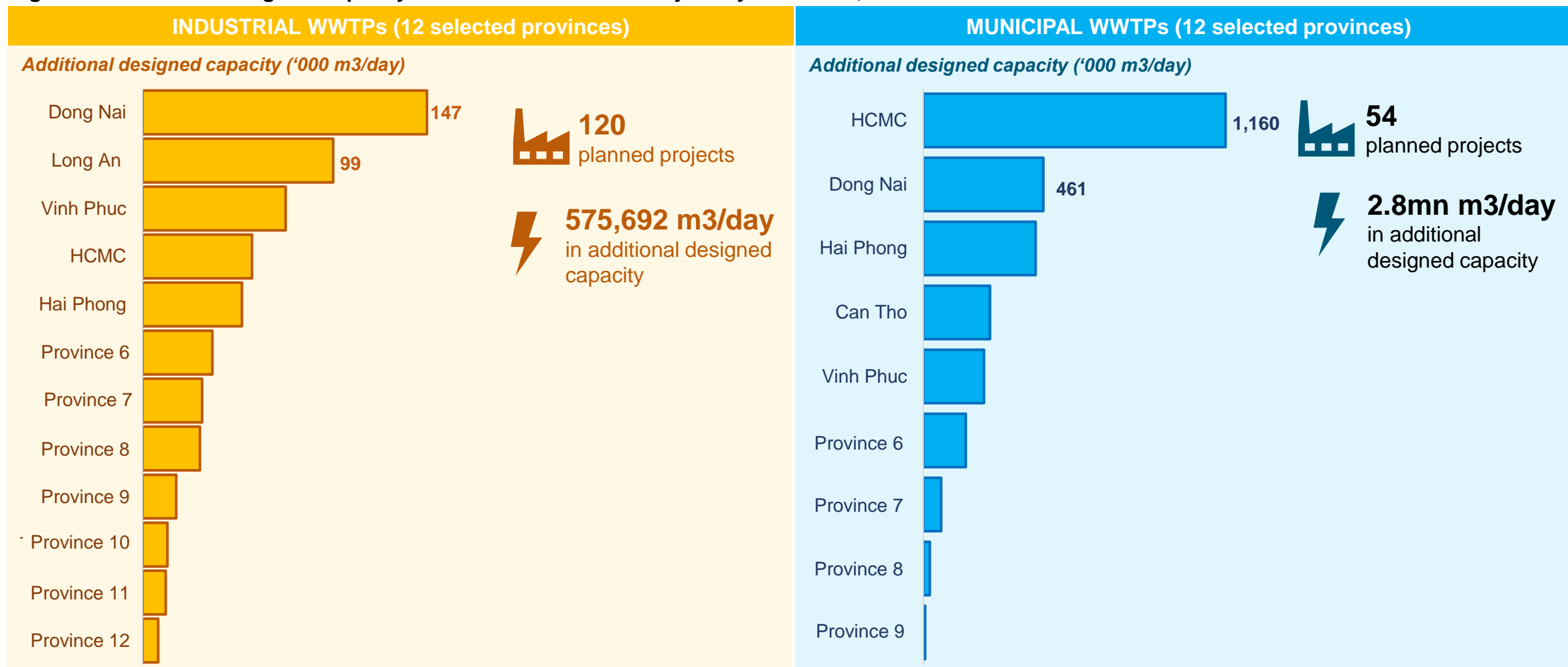


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Potential investors may explore opportunities both in industrial & municipal projects in urban and industrial provinces

Figure 5: Additional Designed Capacity of WWTPs in Selected Major City/Provinces, 2022



Source: FiinGroup



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How can we assist potential investors in unlocking the potential of the Vietnam wastewater market?



Integrated provider of financial data, industry research and credit rating services



Investor Services/ *How can we assist potential investors in unlocking the potential of the Vietnamese market?*

We support our clients to penetrate or expand their business in Vietnam, looking for investment targets or trusted trading partners via comprehensive and in-depth expertise

1 Industry Report

On-the-shelf industry reports providing clients with comprehensive information and in-depth analysis about market size, historical and forecasted growth, market share, market segmentation, competitive landscape, regulatory and policy framework, key growth drivers and key development trends, key player in-depth analysis to help assess the market's attractiveness and growth potentials.

2 Customized Market Research

Customized market study upon specific requirements by clients in addition to value-added services including investment target sourcing, company visits, and/or business matching.

3 Commercial Due Diligence

In-depth analysis of target company's market environment, competitive landscaping, its business attractiveness, and market positioning in M&A transaction. Thorough assessments of business risks and their impacts on the target's assumptions and business plans

4 Market Entry Advisory

Support of investors and/or entrepreneurs to explore investment or trading opportunities and develop optimal market entry strategies (i.e. M&A, Joint Venture, Minority Equity Investments, Foreign Direct Investments, Trading or any other partnership structure with local partners) with actionable recommendations for all stages in their business journey in Vietnam.

5 Merger Filing Support

Comprehensive merger filing support services to clients throughout a merger process, focusing on economic concentration and anti-competitive effect assessment.

Main Clients:

- Foreign and local corporate clients
- Institutional investors
- Financial Institutions

Usage:

- Market potential assessment
- Business intelligence review
- Investment target screening
- Trade connection/Business Matching



Leading Korean firm in the environmental sector

Client's request

- Assessment of the current situation, and competitive dynamics and identify potential business opportunities

Name of service

- Customized Market Research & Target Screening

FiinGroup's deliverables

- ✓ In-depth assessment of wastewater sector (both municipal and industrial segments) incl. value chain, market size & segmentation, key development trends and regulatory review
- ✓ Case study of private investment in the sector
- ✓ Identification of potential investment opportunities (i.e. greenfield development, M&A, EPC, O&M, etc.)
- ✓ FiinGroup's recommendations for market entry strategy



SAMSUNG ENGINEERING

Client's request

- Understanding the current situation of the water supply industry to identify potential targets for business expansion

Name of service

- Customized Market Research

FiinGroup's deliverables

- ✓ Market research on the water supply sector in Vietnam including background and overview of water business in Vietnam, supply and demand of water supply market, financial performance of companies in the sector, main regulatory issues, and policy development
- ✓ Common practices for EPC contractor selection and project development
- ✓ Investment target screening: identification of potential collaborations (in terms of investment & EPC/O&M) for Samsung Engineering
- ✓ FiinGroup's recommendation on optimal market entry strategy

Result

- ✓ In June 2022, Samsung Engineering successfully acquired 24% stakes in DNP Holding and developed strategic partnership with DNP Water. Please refer to this [Link](#) for more details

A leading PET bottle recycler

Client's request

- Assessment of the feasibility of collecting feedstock (post-consumer PET bottles) in the project areas as well as PET flake/ recycled PET resins from major end-use sectors including plastic packaging and fiber manufacturing.

Name of service

- Commercial Due Diligence

FiinGroup's deliverables

- ✓ In-depth analysis of the PET Bottle and Plastic Recycling Market in Vietnam
- ✓ In-depth Analysis of PET Bottle Feedstocks in the Project Area and Assessment of PET Flake, r-PET Pellets, and r-PET Bottle Demand in Vietnam
- ✓ The Assessment of the Target Company's Business Plan
- ✓ FiinGroup's recommendations to address the issues in the negotiation of financing needs, deal structuring as well as a financing agreement

Result

- ✓ In April 2023, our Client successfully reached the financial close with two developing financial institutions for the project investment.

Service Offerings & Sector Coverage



Service Offerings

- Industry Report
- Customized Market Research
- Commercial Due Diligence
- Market Entry Advisory
- Merger Filing Services

A selection of sectors we cover:

Financial Services

- Banking
- Consumer Finance
- Payment Services
- Leasing
- Insurance

Food & Beverages

- Food Processing
- Food Services
- Beverage

Utilities

- Water Supply
- Energy

Consumer Retail

- ICT Retail
- Fashion Retail
- Convenience Store
- Health & Beauty Store

Construction & Construction Materials

- Cement
- Additives and Concrete
- Admixtures
- Steel & Other Metals
- Construction

Healthcare

- Hospital and Clinics
- Medical Equipment
- Pharmaceuticals

Industrial Goods

- Containers & Packaging
- Flexible Packaging

Logistics

- Warehouse (incl. cold chain logistics)
- Port Operation

Information & Communication Technology

Automobiles & Auto Parts

Client Portfolio

Japanese



Korean



Domestic



International





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Contact us

Hai Khieu

Director, Head of Market Research & Consulting

T: +84 (024) 3562 6962

E: hai.khieu@FiinGroup.vn

Anh Nguyen

Manager, Market Research & Consulting

T: +84 (024) 3562 6962

E: anh.phuong@FiinGroup.vn

Linh Le, FRM

Business Development Manager, Market Research & Consulting

T: +84 (024) 3562 6962 (ext.: 105)

E: linh.ledieu@FiinGroup.vn

Head Office

Level 10, Peakview Tower, 36 Hoang Cau Street, O Cho Dua Ward,
Dong Da District, Hanoi, Vietnam

T: +84 (024) 3562 6962

E: info@FiinGroup.vn

W: <https://FiinGroup.vn>

W: <https://fiinresearch.vn>

Ho Chi Minh City Branch

Level 16, Bitexco Financial Tower, 2 Hai Trieu Street, Ben Nghe
Ward, District 1, Ho Chi Minh City, Vietnam

T: +84 (028) 3933 3586/ 85

E: info@FiinGroup.vn

