



# **Opportunities and Challenges for Japanese Companies in the Indian Water and Wastewater Sector**

[www.eawater.com](http://www.eawater.com)

# KNOWLEDGE & MARKETING

Solutions for the Water Industry

EverythingAboutWater...

Destination INNOVATION



**EVERYTHING ABOUT  
WATER**



## About us

- ◆ India's Largest knowledge & marketing solutions provider in the water sector
- ◆ Started in the year 2000 by a group of water professionals
- ◆ Objective of raising awareness & knowledge level on water & wastewater management
- ◆ Help promote water-related products & services
- ◆ Unique, one-of-its-kind model in the water sector

- EA Waterは、2000年に設立されたインド水業界最大手のソリューションプロバイダです
- 水関連製品・サービスの促進等を通して上下水・廃水管理における各種情報提供と知識レベルの向上に寄与することを目指しています



# Committed to Innovation

- 💧 Knowledge leader in the sector
- 💧 Storehouse of information
- 💧 Bellwether in recognising the emerging trends
- 💧 Integrated marketing platform for all communication
- 💧 Gateway for the international technology providers aiming at Indian industry
- 💧 Aid to strategy and policy-making for government and industry bodies
- 💧 Provider of tools for knowledge upgradation & market growth

- EA Waterはインド水業界のリーダーとして、国外企業のインド市場への参入や、企業戦略・政策決定の支援、水関連技術・知識の提供などを通じて、インドでの技術革新に貢献していきます



# Water Situation in India

- India has a population of 1027 million as per 2001 Census.
- National Water Policy looks at decentralized water management and public-private partnership
- 227 million of these stay in 498 Class I cities with a population of more than 1 lac (22% of the total population)
- The total water supply to these cities is 44,769 MLD
- The highest water supply to Class I cities is in Maharashtra (12483 MLD), Uttar Pradesh (4383 MLD) and Delhi (4346 MLD)
- The average per capita water supply in the Class I cities is 179 lpcd. This ranges from 80 lpcd in 42 cities in Tamil Nadu to 540 lpcd in case of Chandigarh

- 2001年時点で人口10億人を超えているインドでは、このうち2億人がClass I と呼ばれる人口10万人以上の都市(インド全土で498都市)に住んでいます
- これらの都市の水供給量は、44,769MLD(百万m<sup>3</sup>/日)、平均179lpcd(一人一日当たりリットル)です



# Water Situation in India

- Estimated sewage generation from all cities and towns is 29129 MLD
- India has 269 sewage treatment plants, out of which 231 plants are operational totalling a total capacity of 6190 MLD. The 38 plants under planning or construction add another 1743 MLD capacity
- Urban population coverage by individual connection is only 64% in India
- Daily duration of water supply in India is between 1 to 6 hours
- Over 50% of the total water supply is Non-Revenue Water
- Ground water quality problems of fluoride, iron, nitrates, arsenic and high salinity

- すべての都市や町から出る下水の量は、29,129 MLD（百万m<sup>3</sup>／日）で、269の下水処理施設で処理されています。
- 飲料水は、1～6時間の間で供給されますが、50%以上が政府により無料で提供されています
- また、地下水に含まれるフッ化物、硝酸塩、ヒ素、高塩分等の処理問題を抱えています



# Status of Water Supply in India

		Population	Total Water Supply (in MLD)	Per Capita Water Supply (in lpcd)
<b>Class I cities</b>	<b>498 in number</b>	<b>227 million</b>	<b>44,769</b>	<b>196</b>
<b>Class II cities</b>	<b>410 in number</b>	<b>30 million</b>	<b>3,325</b>	<b>121</b>
<b>TOTAL</b>	<b>908 in number</b>	<b>257 million</b>	<b>48,094</b>	<b>187</b>



# Capacity Gap in Sewage Treatment

City Category	Number of cities	Sewage Generation (MLD)	Installed STP capacity (MLD)	Capacity gap in cities having STPs	Sewage generation with cities having no STPs	Total capacity gap (MLD)
Cities with population > 10 lacs	39	17,554	8,040 (in 29 cities)	6,135	3,379	9,514
Cities with 5 to 10 lacs population	32	4,987	1,082 (in 13 cities)	1,293	2,612	3,905
Cities with less than 5 lacs population	822	15,327	2,151 (in 95 cities)	1,177	11,999	13,176
<b>TOTAL</b>	<b>893</b>	<b>37,868</b>	<b>11,273</b> (in 137 cities)	<b>8,605</b>	<b>17,990</b>	<b>26,595</b>





# Water Sector Project Funding

- Jawaharlal Nehru National Urban Renewal Mission (JNNURM) looks at 65 cities which have a population of more than 1 million or state capital or having historic and tourist importance. Launched in 2005, water supply accounts for 37% of the cost of projects **sanctioned** and 40% of the funds **released** under the JNNURM scheme
- Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT) looks at all cities and towns other than 65 identified ones.
- JICA, World Bank and Asian Development Bank are the multilateral agencies funding some of these water supply projects

- Jawaharlal Nehru National Urban Renewal Mission (JNNURM)は、人口100万人以上または州都、歴史・観光上重要性のある65都市をターゲットとし、2005年から支援を続けています。中小規模の都市に対しては、都市インフラ開発スキーム(UIDSSMT)が支援しています
- これらのPJTにはJICA、世界銀行、アジア開発銀行が援助することもあります



# Project Funding for Water Supply Projects

	No. of Projects Sanctioned	Cost of sanctioned projects (in USD million)	Funds released (in USD million)
JNNURM	143	3,807	783
UIDSSMT	344	1,330	282
<b>TOTAL</b>	<b>487</b>	<b>5,137</b>	<b>1,065</b>



# Industrial Wastewater Treatment

- Industrial sector makes up about 20% of India's GDP and Indian industry is growing at a rate of over 8 % p.a.
- Industrial water use in India is about 40 billion cubic metres (bcm) which is nearly 6% of the total freshwater abstraction. Annual wastewater discharge from industry is 30.7 bcm
- Water demand for industrial and energy usage is projected to increase to 191 bcm by the year 2025.
- Central Pollution Control Board estimates the total wastewater discharge from industrial sources to be 83,048 MLD
- With increasing industrial growth, the demand for water and water treatment would grow. Despite more water-efficient manufacturing processes, the market would grow.
- Pollution control board norms for all manufacturing industries are planned to become more rigorous and enforcement would become stricter, due to higher public scrutiny

- インドの工業用水使用量は、400億立方メートル(BCM)で、インドの淡水の約6%です
- 産業廃水は年間30.7 BCMで、2025年までに191 BCMに増加すると予測されています
- 産業廃水による公害を防ぐための基準を厳しくする計画が進められています



# Industrial Wastewater Treatment

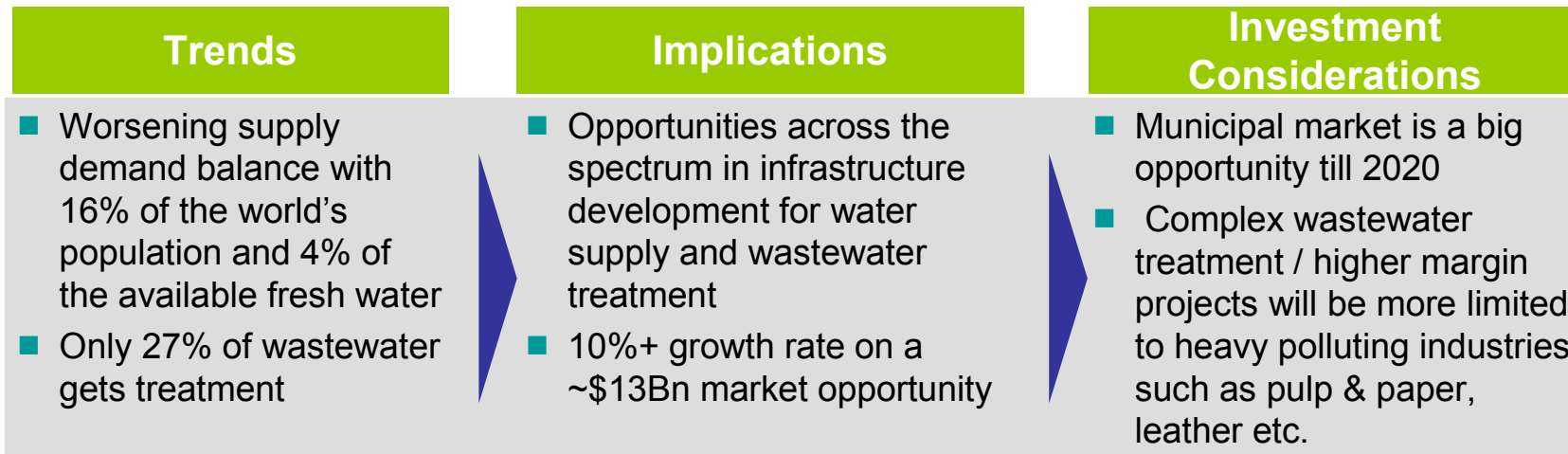
- Wastewater Recycling concept growing in sectors like refineries, steel plants, mining and textile
- Major polluting industries are distilleries, paper, textiles, leather tanneries and chemical industries
- Major zero-discharge industries include Chennai Petroleum, Rashtriya Chemicals & Fertilizers, Arvind Mills (textile, Arvind Mills (paints))
- Common Effluent Treatment Plants have been built for clusters of small industries
- Public-private partnership projects for recycling sewage and selling to industrial clusters have been coming up in different locations

- 精油、製鉄、鋁業、繊維といった業界では、廃水再利用のコンセプトが浸透しつつあります
- 汚染を引き起こしている主な業界は、蒸留業、繊維、皮なめし、化学等です。
- PPP(官民連携パートナーシップ)では、下水を再利用し、特定産業へ販売するようなプロジェクトが各方面で実施されています



# Key India Trend – Huge Water Deficiencies

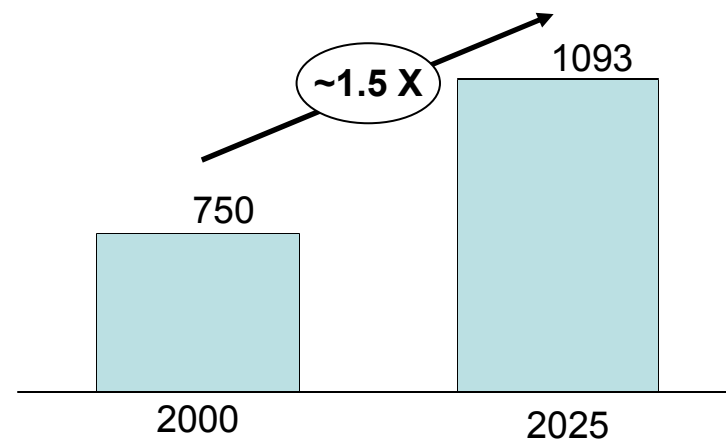
- Clean water supply and treatment represents a meaningful opportunity in the Indian water market
- インド水市場において、浄水の処理や供給は大変重要な意義があります



**Proportion of Treated Water**

Particulars	Class I cities	Class II towns	Total
Population (mm)	187	38	225
Water Supply (MLD)	29782	3035	32187
Water Supply (LPCD)	160	81	146
Wastewater Generated (MLD)	23826	2428	26054
Wastewater Generated (LPCD)	127	65	116
Wastewater Treated (%)	29%	4%	27%
Wastewater Untreated (%)	71%	96%	73%

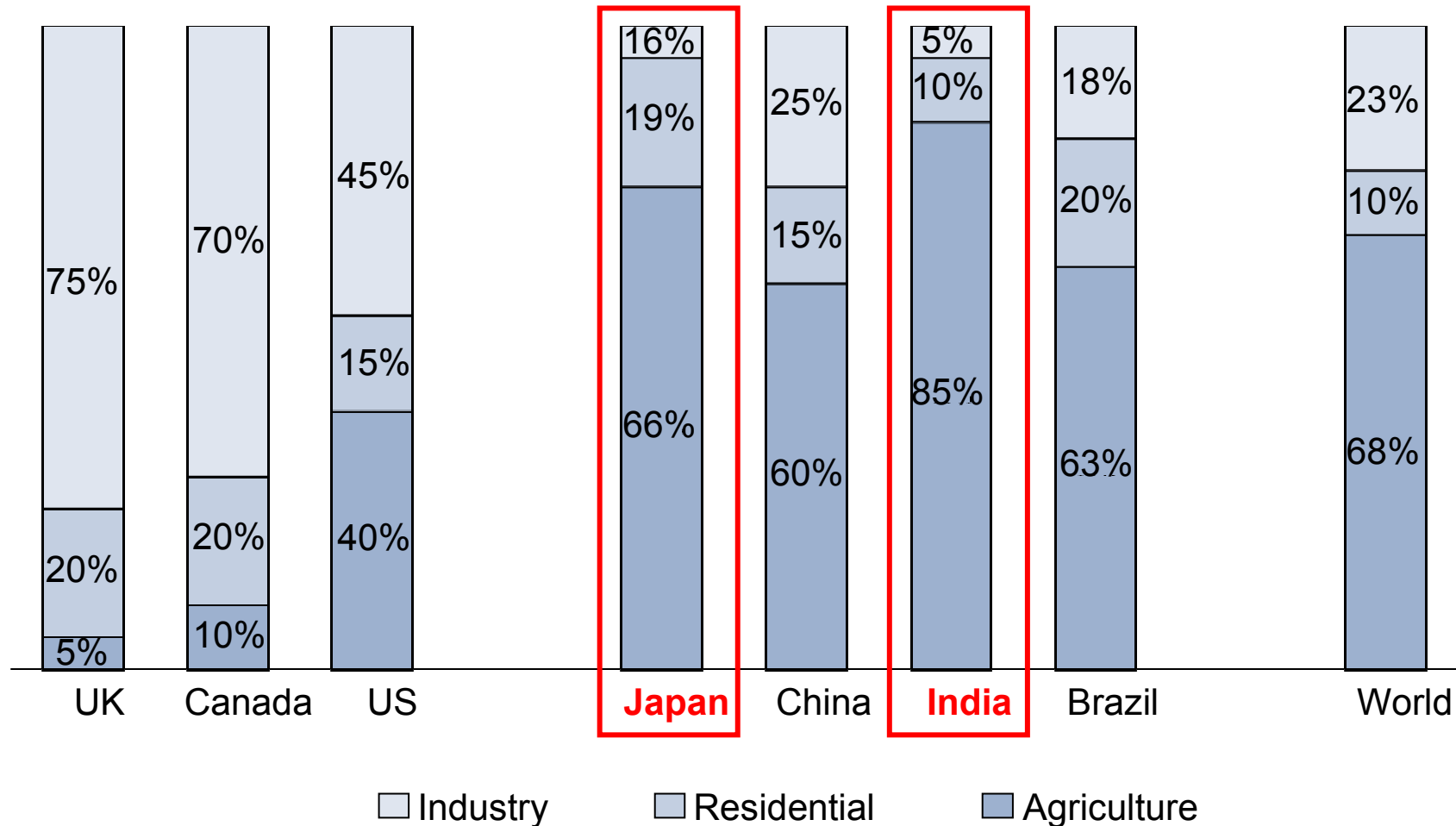
**Increasing Water Demand (Bn m<sup>3</sup>)**





# The Use of Water

- Agriculture is by far the biggest user of water globally, driven mostly by emerging markets
- 世界的に見ても、農業では群を抜いて水の利用量が大きく、特に新興国で顕著です





# Opportunities/Challenges on Supply Side of Water

- Growing Scarcity in Many Parts, caused by over-exploitation, poor planning and delayed project implementation
- Decreasing water quality
- Rising Cost of Fresh Water
- More Complex Discharges from Industrial Activity

- 水の供給側の課題としては、水道管理における計画の不備、実行の遅れ及び水の過剰な利用などにより、多くの地域で水不足が加速しています
- また、浄水にかかる費用の抑制や、産業活動にともなう廃水管理、水質向上などが課題です



# Opportunities/Challenges on Demand Side of Water

- Huge and Growing Demand for Water
- Increased awareness about water quality and health
- Increased Industrial and Economic Activity
- Rising Construction, Building and Commercial demand
- Need for energy-efficient and sustainable solutions
- Higher level of Environmental regulations
- Need for cost-effective solutions to appeal to wider base
- Overall higher level of water awareness and concern

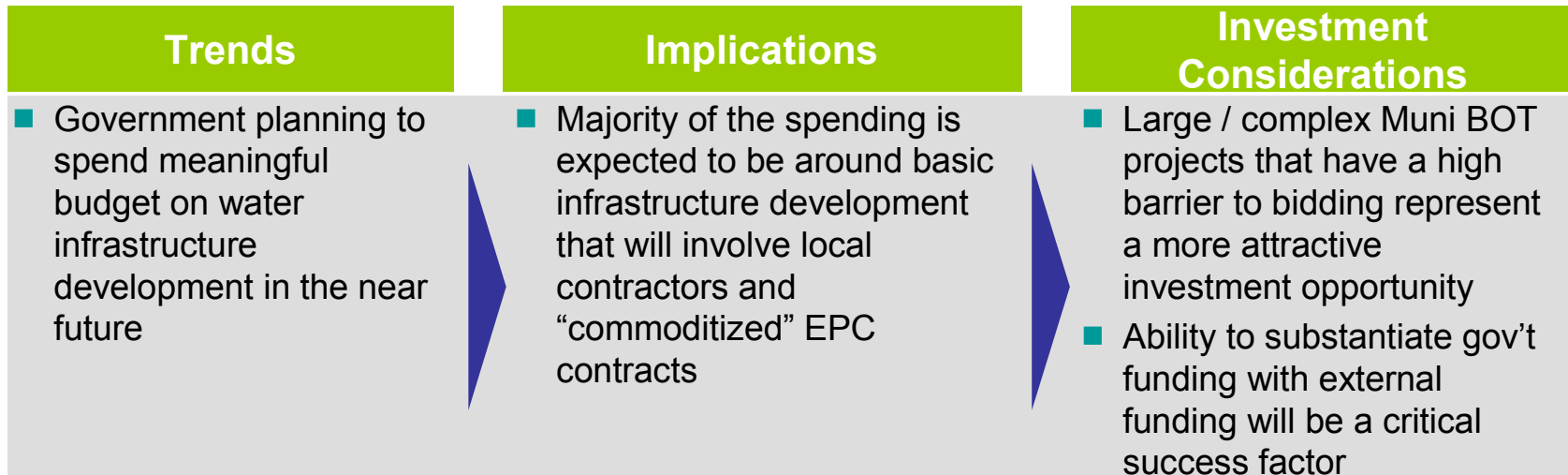
- 一方、水の需要は、工業・経済活動の活発化に伴い、増加の一途を辿っています
- また人々の水質や健康への影響への関心の高まりを受け、環境規制などを含めた幅広い視点での費用対効果の高いソリューションが求められています





## Key India Trend – Government Focus Renewing in Water

- Majority of the spending is in basic infrastructure development, but opportunities in recycling, desalination and sludge management have started
- インフラの整備に多くの費用が割り当てられていますが、水の再生利用や淡水化、汚泥処理等への取り組みも始まっています。



### Planned Government Spending

Huge funds allocated for Urban water infrastructure (Eleventh plan)			
Funds Requirement – Urban Basic Services		Proposed Flow of Funds	
Sub-sector	(Rs. Bn)	Source of Funding	(Rs. bn)
Urban water supply	537	Central Sector Outlay	700
Urban sewage and treatment	532	State Sector Outlay	350
Urban drainage	202	Institutional Funding	100
Solid Waste Management	22	External Agencies	100
Others	0.18	FDI and Private Sector	42
<b>Total</b>	<b>1,292</b>		<b>1,292</b>

Source: Ministry of Urban Development



# Structural Assessment of the Indian Water Sector

- While Industrial has been an attractive end-market historically, large-scale privatization and BOT projects in the Municipal segments offer the most attractive economies
- 産業用水はもとより魅力的な市場ですが、大規模な官民連携やBOTプロジェクトは経済的に見るとより魅力的と言えます

		Municipal (Large BOT & PPP Projects)			Municipal (Small Infrastructure Projects)		Industrial	
		Abstraction, distribution, and collection	Treatment		Treatment		Treatment	
			Clean	Waste	Clean	Waste	Clean	Waste
● High attractiveness    ● Low attractiveness								
Economics	ROIC	na	15-20%	15-20%	<10%	<10%	10-15%	10-15%
	Cyclical	●	●	●	●	●	□	□
	Revenue Visibility	●	●	●	●	●	□	□
Structural Attractiveness	Barriers to entry	□	□	●	●	●	□	●
	Threat of substitutes	●	●	●	●	●	●	●
	Bargaining power of customers	●	●	●	●	●	□	□
	Bargaining power of equipment suppliers	□	□	□	□	□	□	□
	Degree of competition	●	□	□	●	●	●	●
Risk Assessment	Execution Risk	□	□	□	●	●	●	●
	Regulatory Risk / Political Capture	□	□	□	●/□	●/□	□	□

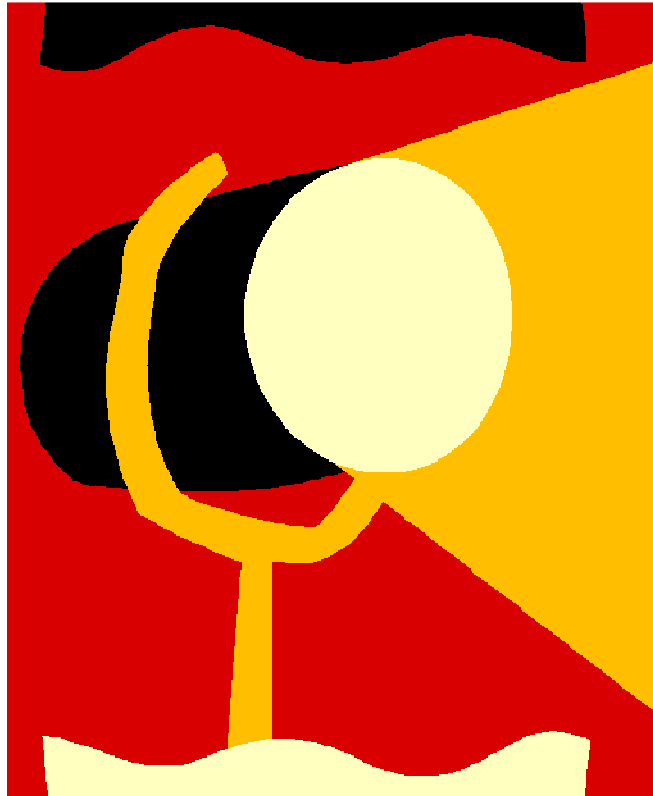


## Market Characteristics

- Fragmentation of Industry
- Growth of a few medium-sized players
- Geographical decentralization of industry
- Entry of international players
- Growth of Energy-Efficient Technologies
- Growth in standardized plants

- インドの水市場は細分化されており、中規模なプレイヤーが伸びています
- グローバル企業のインド進出や、エネルギー効率化に向けた技術の進化等が進んでいます

## Future Market Trends



- High investment in urban water supply
- More stringent wastewater discharge norms
- Wastewater Recycling
- Desalination
- Community-based drinking water schemes
- Growth of O & M businesses
- Growth of packaged sewage treatment plants
- Growing Point-of-use Residential Market
- Growing Packaged Drinking Water Industry

- 今後の市場トレンドとして挙げられるのは、都市部の水道への積極的な投資、より厳格な廃水排出規制、廃水の再利用、淡水化、コミュニティベースの飲料水供給、運営管理ビジネスや下水処理設備等の拡大です。



# Government Regulatory Framework

- Customs Duty Structure
- Regulations for Entry of Foreign Companies

• 政府による規制の枠組みは、関税構造や国外企業の進出規制などが挙げられます



# Customs Duty Structure

- **Covered under Section 8421 of the Customs Classification**
- **Basic Customs Duty of 7.5%**
- **Countervailing duty of 16%, 3% cess on CVD, 3% further cess on total and 4% special duty**
- **Total Effective Duty of 31%**
- **Zero Customs Duty on specified and approved projects for drinking water or wastewater treatment**

- 基本関税が7.5%、相殺関税が16%、租税3%、特別関税4%となり、実効税率は31%です
- 飲料水または廃水処理に関する特定のプロジェクトでは関税がかかりません



# Regulations for Entry of Foreign Companies

- Falls under Open Category
- Not restricted or prohibited in any way
- Can be imported by any Indian company with an Import- Export Registration Code
- For any foreign direct investment into India, approval from Reserve Bank of India and the Foreign Investment Promotion Board (FIPB) is needed
- Any joint venture or subsidiary has to be registered with the Registrar of Companies

- 国外企業の進出規制に関しては、国外企業による直接投資はFIPBやインド準備銀行の承認が必要であったり、ジョイントベンチャーは登録機関による認証が必要です



## Areas where Japanese companies could find opportunities in India

- ◆ Wastewater recycling based on membrane technology
- ◆ Biological wastewater treatment
- ◆ Sludge Handling, Treatment and Disposal
- ◆ Environment consulting and designing
- ◆ UV and other water disinfection technologies
- ◆ Leakage monitoring and water infrastructure maintenance

- 日本企業がインドに進出する際には、膜技術や生物学的廃水処理システム、スラッジ処理、環境コンサルティング、UV等を用いた殺菌技術、漏洩のモニタリングやインフラの維持管理等が有力です





## International Majors already present in India

- Siemens
- Degremont
- Dow
- Endress + Hauser
- Grundfos Pumps
- Nalco Chemicals
- Danaher Group
- IDE Technologies
- GE Water
- Veolia Water
- Befesa
- KSB Pumps
- ABB
- Pentair
- ITT
- Hyflux

**and many more ...**



## Japanese Companies already present in India

- Kobelco
- Ebara Pumps
- Toray Membranes
- Kubota Corporation
- Hitachi Plant Tech.
- Nippon Koei
- CTI Engineering
- Asahi Membranes
- Tsurumi Pumps
- Nitto Denko - Hydranautics
- Torishima
- JFE Engineering
- Tokyo Engg. Consultants
- Iwaki Pumps

**and many more ...**



# The Way Forward

- **Finding the Right Opportunity**
- **Finding the Right Partner**
- **Finding the Right Strategy**
- **Having Patience**
- **Thinking Long-Term**

- インド進出の成功には、正しい機会とパートナー、戦略を持つことが必要です
- また、忍耐と長期的な視野が必要です



# Our offerings

- ◆ **Publishing**
- ◆ **Events**
- ◆ **Consulting**
- ◆ **Recruitment & Training**



# Publishing

- ◆ **EverythingAboutWater**
  - ✓ India's first and only monthly print magazine on water, reaching over 55,000 water professionals
- ◆ **Portal & e-newsletter**
  - ✓ [www.eawater.com](http://www.eawater.com)- reaching out to more than 20,000 water professionals
- ◆ **International Marketing Platform**
  - ✓ Representing well-known international magazines like Arab Water World & WC&P
- ◆ **Books/ CDs**
  - ✓ Covering a wide range of subjects

- Everything About Water: 55,000人以上の水専門家に購読されている月刊誌です
- Portal & e-newsletter: 20,000人以上の水専門家にアクセスされています
- International Marketing Platform: 代表的な国際誌です
- Books/ CDs: 幅広い専門分野を網羅しています



## Events

- ◆ **Annual EverythingAboutWater EXPO- The largest water event in Asia (outside China)**
- ◆ **SemEx™ & Training Programmes- Over 25 events in a year bringing together the decision-makers and the end-users in every major city and industrial centre**
- ◆ **EverythingAboutWater Pavilions in National & International Events- Gateway for the Indian market to go International**

- Annual EverythingAboutWater EXPO: アジア最大の水関連イベントです
- SemEx™ & Training Programmes: 各主要都市・産業中心地の意思決定者やエンドユーザーと開催され、年に25回以上開催されます
- EverythingAboutWater Pavilions in National & International Events: インド国外に進出するためのインド市場の入り口です



# Recruitment & Training

- ◆ **Recruitment activity - Extensive database of more than 20,000 water professionals**
- ◆ **Match-making between the companies & candidates- Placements at some of the leading companies including VA Tech Wabag, Degremont, Grundfos, Wipro, GE, Siemens, etc.**
- ◆ **On site & off site specialised training programs on water technologies**

- 20,000人以上の水専門家のデータベースを持ち、企業間のマッチングやグローバル企業への人材斡旋、水技術に関連するオンサイト・オフサイトでの研修プログラムを用意しています



# Consulting

- ◆ **Dr H2O- Panel of experts to answer your queries**
- ◆ **Water Audits- Comprehensive study for cost savings and process improvements**
- ◆ **Consulting- For market study, detailed segment analysis, entry strategy, partner identification and evaluation, etc.**

- 水関連に関する質問に応えるウェブサイトの運営や、コスト削減やプロセス改善に関する包括的な研究を実施しています
- また、業界研究、セグメント分析、パートナーの選定評価等の各種コンサルティングを実施しています





## Our Strengths

- ◆ Deep and wide understanding of the water domain
- ◆ Strong relationships in the water sector in trade, consulting, government and end-user sectors
- ◆ Indepth Knowledge Base on water created over eight years
- ◆ Fairly unique ability to provide market, technical, financial and management analysis on water industry and individual players
- ◆ High brand visibility

- 我々には、水業界に関わる各プレイヤーとの強固な人脈と高いブランド力があり、創業以来蓄積してきた知識と深く広い理解力と独自の分析力があります



# THANK YOU

and Look forward to see you in  
India soon ...

**H. Subramaniam**

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