

Equities

2 December 2011 | 29 pages

India Infrastructure

Water Sector – Nascent Industry, Strong Potential

■ Industry Overview

- **Why look at the water sector?** — Companies in CIRA coverage like L&T, IVRCL, NCC and Thermax have a presence in water treatment/management/distribution. While this segment is currently a small percentage of business for companies like L&T, Thermax (we estimate <10% of revenues, although granularity in information is limited), we believe this is a nascent industry and given the huge demand for water in the country it could become a compelling investment theme over a multi-year horizon. Pure play water treatment/management companies like VA Tech Wabag and Ion Exchange could also benefit from opportunities in this space.
- **India's water demand set to rise...** — Although India has been endowed with large freshwater resources, recent overdrawn of ground water has resulted in a strain on its resources. Key factors driving India's water usage include: (1) Fast population growth; (2) Traditional and inefficient agricultural practices; (3) Populist political practices (free power leading to over-drawing of ground water via pumps); (4) Rising urbanization and shift in consumption patterns to more water-intensive products like showers and automatic washing machines; and (5) Rapid industrial growth in hinterland, necessitating requirement of freshwater.
- **...driving increased investments in the sector** — The water sector in India is a ~US\$2.5bn industry (in 2007), and is expected to grow (Fig 13) to US\$6.9bn by 2016. The sector, being highly localized in nature, assumes particular importance in the context of rising competition from Asian and global companies in India's infrastructure and industrial capex opportunity. VA Tech Wabag (VTW) management estimate it takes ~2-3 years to enter a new market due to entry barriers such as: (1) Political and bureaucratic environment; (2) Regulatory framework; and (3) Competitive landscape.
- **Opportunities in this segment** — The major opportunities in India lie in waste water treatment and recycling segments. Agri-based industries, such as sugar, fertilizers and textiles, are among the top producers of waste water in the country, offering significant opportunities in waste water treatment and recycling, thereby allowing the treated water to be reused in the production process. In the domestic sector, major opportunities are in water treatment (~29% of the waste water is treated in Class I cities) and in water supply infrastructure in Class II cities, which drive the municipal water utility capex.
- **VA Tech Wabag: Management meeting takeaways** — A diversified water treatment company, VTW is present in 12 of the 15 fastest growing water markets globally. Management envisages growing revenues 400% in the next five years on the back of: (1) Focus on an asset-light strategy – VTW performs value added and high margin work processes in-house and outsources the civil construction process to third party contractors; (2) Strong R&D focus; (3) VTW has ~Rs2.75bn cash on its balance sheet, which empowers it to evaluate inorganic growth opportunities to gain access to new markets.

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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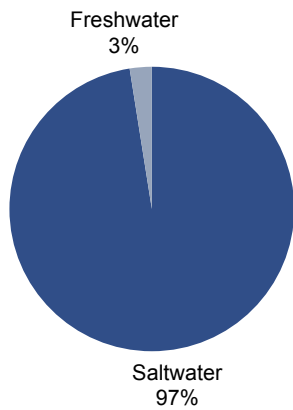
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Supply Side Constraints

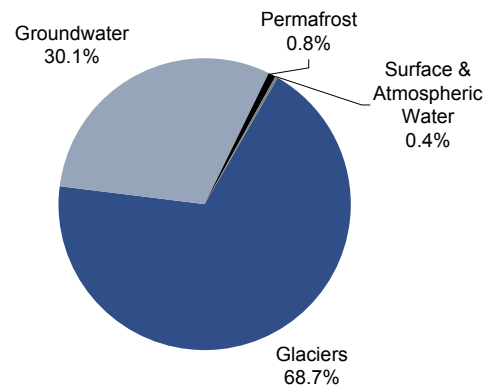
■ **Freshwater is a scarce natural resource** – As per the United Nations Environment Programme (UNEP), of the total ~1.4bn km³ of water on Earth, the volume of freshwater resources amounts to just ~35mn km³, or ~3% of the total volume. Of these freshwater resources, a large portion is in the form of glaciers or permafrost and only ~0.76% is easily accessible.

Figure 1. Total World Water Resources, 2006



Source: United Nations Environment Programme (UNEP), CIRA

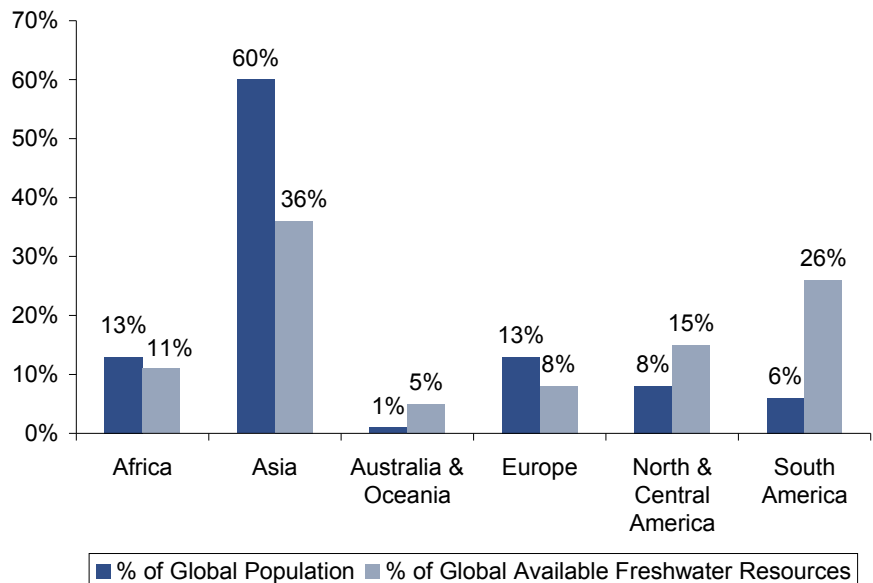
Figure 2. Breakdown of Freshwater Resources in the World, 2006



Source: United Nations World Water Development Report 2 (2006), CIRA

■ **Unequal distribution of freshwater** – The scarcity of freshwater is exacerbated by its inequitable geographic distribution. For example, while North America enjoys 15% of the global water supply for only 8% of the global population, Asia's resources are severely strained with only 36% of the supply for 60% of the global population.

Figure 3. Inequitable Distribution of Freshwater Resources, 2003

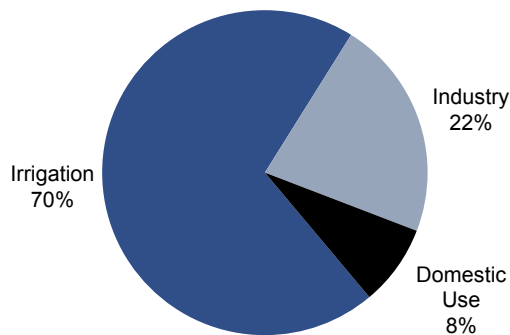


Source: UNESCO, CIRA

Demand Patterns

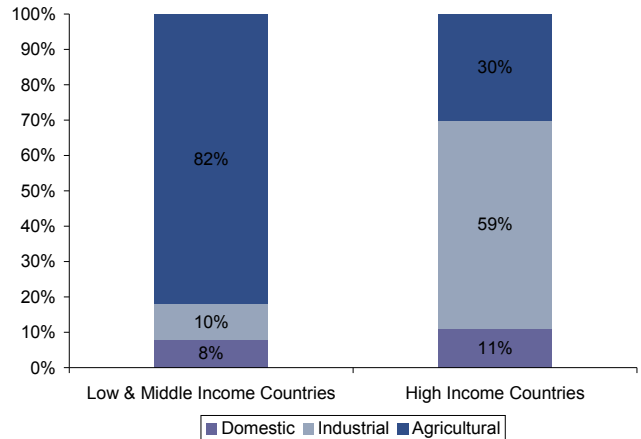
- **Marked differences in consumption patterns....** – On the demand side, marked differences persist in the consumption patterns of water across countries. In low income countries, the consumption is largely in the agricultural sector due to traditional and inefficient agricultural practices.

Figure 4. Worldwide Usage of Freshwater, 2003



Source: UNESCO - World Water Assessment Programme, CIRA

Figure 5. Marked Difference in Consumption Patterns, 2003

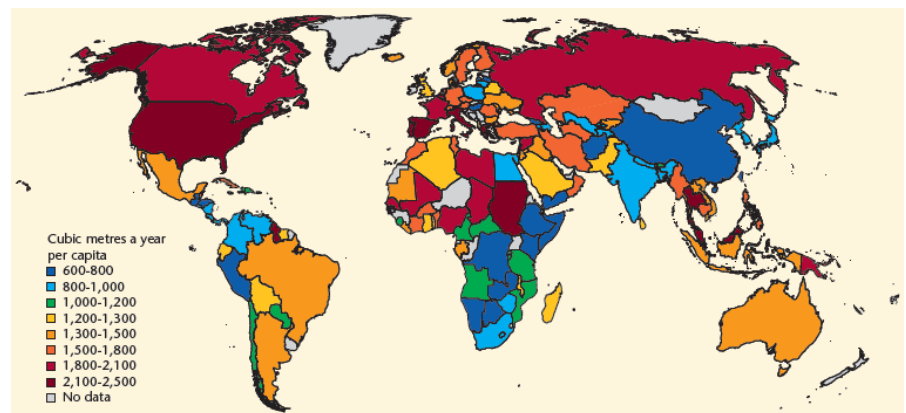


Source: UNESCO - World Water Assessment Programme, CIRA

- **....are set to change in the years to come...** – Per capita consumption in low/middle income countries is expected to increase due to: (1) increase in population; (2) rising urbanization; (3) change in consumption patterns towards more water-intensive products like showers and automatic washing machines; and (4) rapid industrial growth in hinterland, necessitating requirement of freshwater. On the other hand, per capita consumption is expected to fall in developed countries through better water management measures.

Per capita consumption in low/middle income countries is expected to increase.

Figure 6. Average National Per Capita Water Footprint, 1997-2001

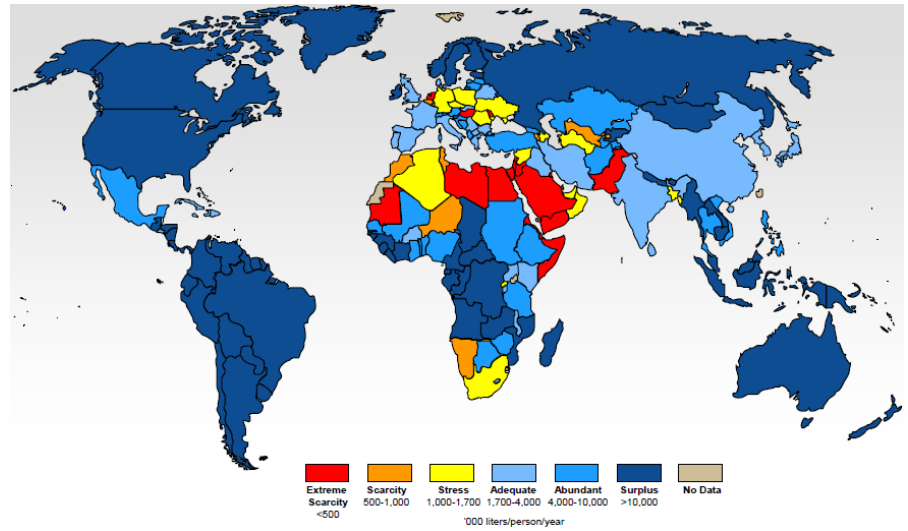


Source: UN World Water Development Report 3, Hoekstra and Chapagain 2008, CIRA

- **...and leads to increase in water scarcity** – Over the last three decades, changes in demand patterns have led to increasing water scarcity across the world. In 1975, the scarcity was limited to a few countries in Europe, Africa and the Middle East. By 2000, water scarcity had spread to large and densely populated countries like India and China. By 2025, the scarcity is expected to spread further with India and China continuing to be the largest countries facing stress.

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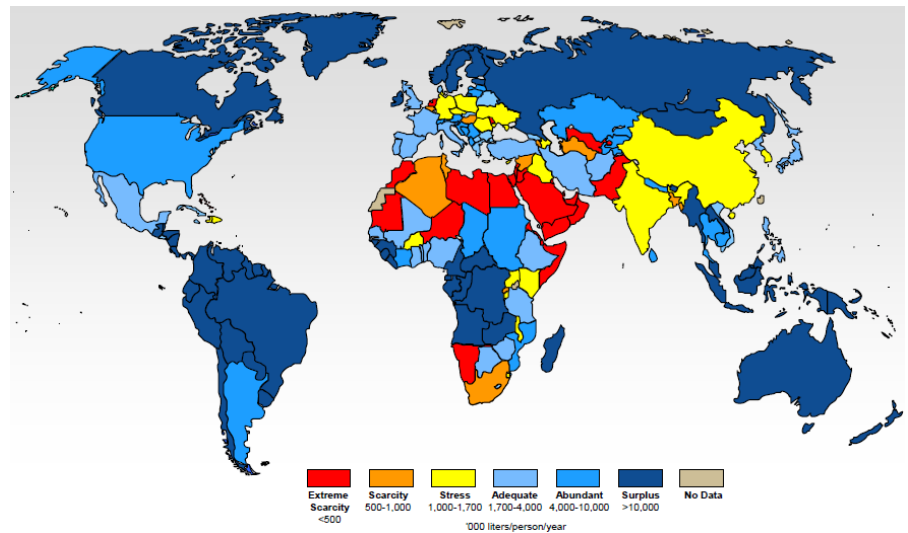
Figure 7. Global Per Capita Water Availability (1975)



Source: Grail Research – “Water- The India Story” (Global Water Initiative (June 2005), GEF International Waters Conference, The Coca-Cola Company), CIRA

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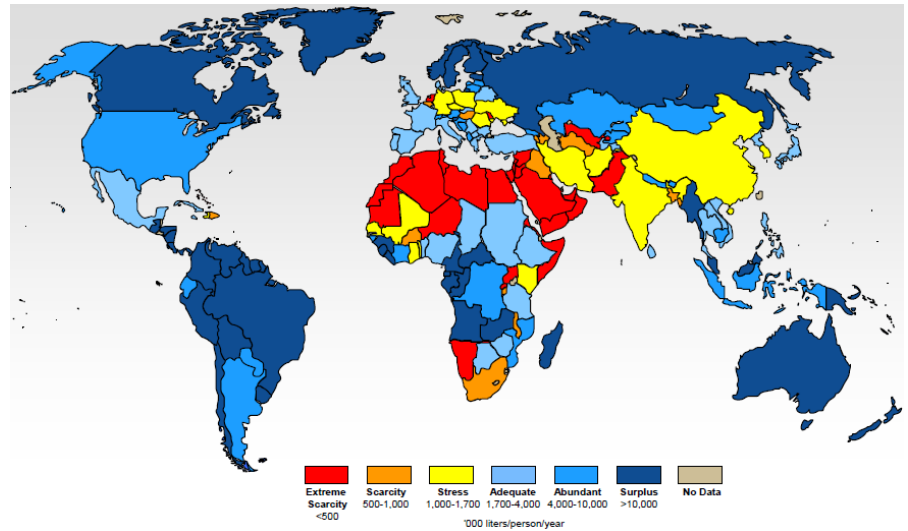
Figure 8. Global Per Capita Water Availability (2000)



Source: Grail Research – “Water- The India Story” (Global Water Initiative (June 2005), GEF International Waters Conference, The Coca-Cola Company), CIRA

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Figure 9. Global Per Capita Water Availability (2025)



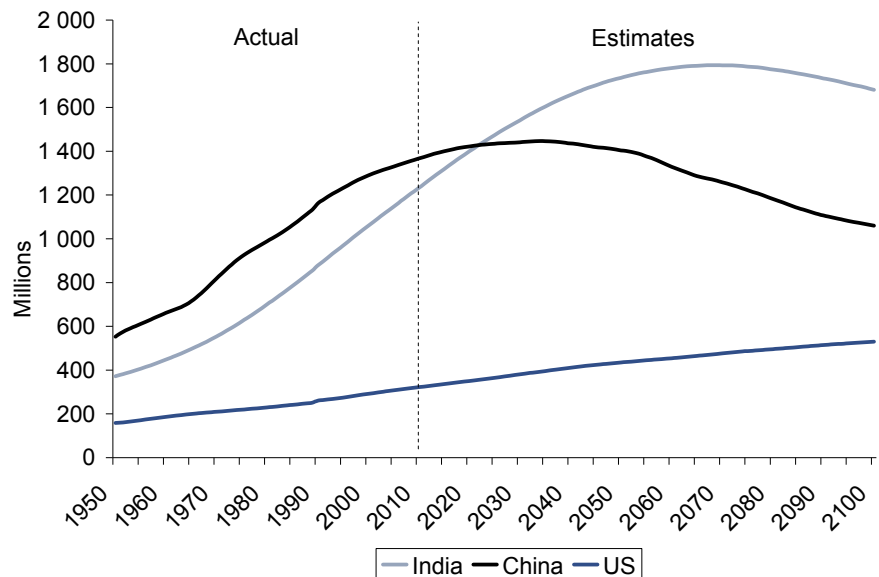
Source: Grail Research – “Water- The India Story” (Global Water Initiative (June 2005), GEF International Waters Conference, The Coca-Cola Company), CIRA

Factors Driving Demand Growth

Food and Agriculture Organization of the UN estimates that in the last century the use of water has been growing at over twice as fast as the global population growth.

- Increase in population** – The demand for water in developing countries like India is expected to rise steadily, largely due to the increase in population. As per the UN Population Database, India’s population is expected to increase from ~1.25bn presently to ~1.6bn by 2035. This is expected to exert a tremendous pressure on its limited water resources.

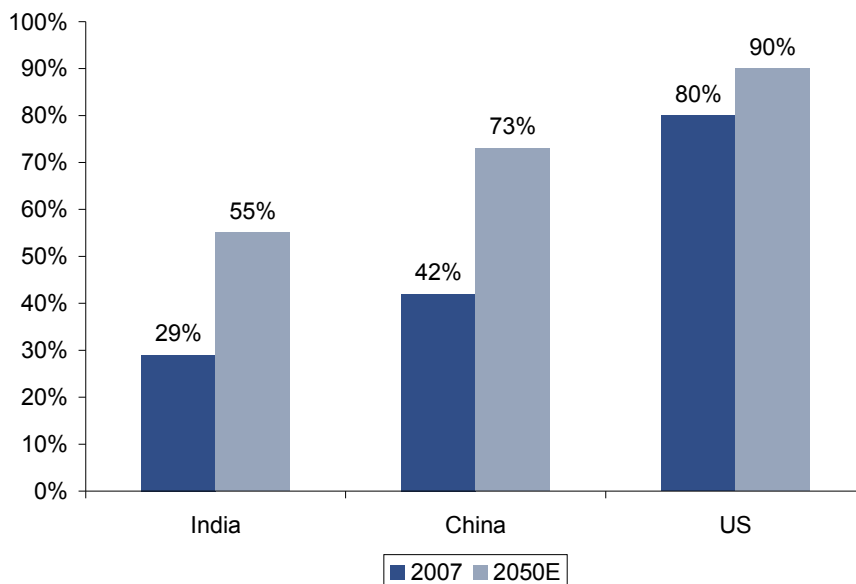
Figure 10. Population Growth in India, China, and the US



Source: UN Population Database, CIRA

- **Rising urbanization plays a role in shifting consumption patterns** – The urban population in India is expected by the UN to grow from 29.2% of the total population in 2007 to 55.2% by 2050.

Figure 11. Rising Urbanization



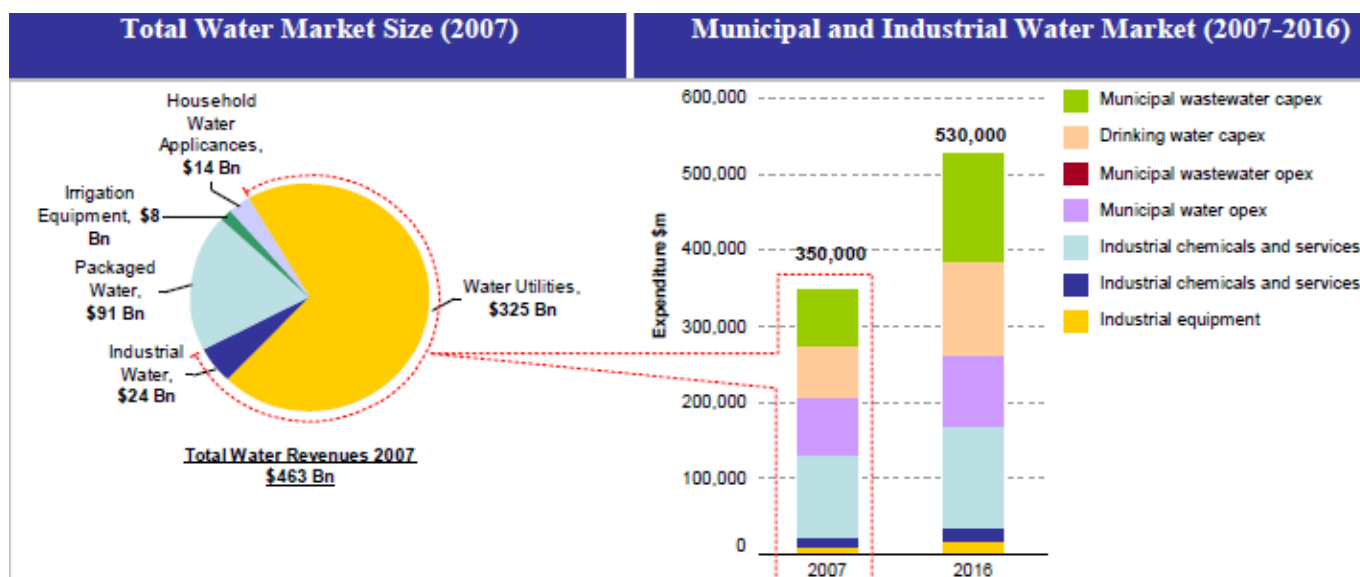
Source: UN Population Database, CIRA

- **Rapid industrial growth** – Developing countries like India and China are expected to witness a period of rapid industrial growth over the next 3-4 decades. Rising industrialization in the water-scarce hinterland of these countries is expected to pose increasing strain on their resources.

The Global Water Market

- **Components of the water market** – The water market broadly comprises of capex relating to setting up and maintenance of water utilities, water treatment plants, packaging and distribution of freshwater, irrigation equipment to provide water for the agricultural sector, and household appliances for water purification.
- **Utilities and industries dominate** – Global Water Markets 2008 estimates the water industry size at US\$463bn in 2007. Major clients comprise government owned water utilities (which provide water) or industries (which treat water to meet input requirements/regulatory conditions for output). These two segments form ~75% of the industry, and are estimated to grow to US\$530bn by 2016.

Figure 12. Global Water Market Size and Growth Areas



Source: Global Water Markets 2008, VA Tech Wabag RHP

- **Fastest growing markets are in Asia and Africa** – The largest opportunities seem to be in China, India and the Middle East, with growing water scarcity. In developed markets like Spain, replenishment demand is also expected to pick up.

Figure 13. Fastest Growing Markets by Market Size (US\$M)

Country	2007	2016	CAGR
Saudi Arabia	2,455	9,103	15.7%
Romania	507	1,839	15.4%
Algeria	933	2,704	12.6%
India	2,531	6,870	11.7%
Oman	343	921	11.6%
Egypt	1,352	3,490	11.1%
China	32,662	80,714	10.6%
Libya	835	1,959	9.9%
Spain	5,045	11,606	9.7%
Iran	1,203	2,638	9.1%
UAE	1,908	4,113	8.9%
Turkey	1,949	3,910	8.0%
Mexico	2,591	5,142	7.9%
Hungary	762	1,469	7.6%
Taiwan	2,078	3,876	7.2%

Source: Global Water Markets 2008, VA Tech Wabag, CIRA

Components of the Water Treatment Industry

The water treatment industry further comprises of four kinds of water plants - water treatment, desalination, waste water treatment, and water recycling.

Figure 14. Water Treatment Industry – Segments and Technologies Used

Sewage Water Treatment	<ul style="list-style-type: none"> ■ Activated Sludge Process ("ASP") ■ Sequential Batch Reactors ("SBR") ■ Membrane Bio Reactor ("MBR") ■ Membrane Bed Bio Reactor ("MBBR") 	<ul style="list-style-type: none"> ■ Upflow Anaerobic Sludge Blanket Reactor ("UASB") ■ Bio Active Fixed Film Technology ("BAFF") ■ Submerged Membrane System ■ Stabilization Pond
Drinking Water Treatment	<ul style="list-style-type: none"> ■ Aeration ■ Sedimentation ■ Filtration 	<ul style="list-style-type: none"> ■ Disinfection ■ Sludge Dewatering
Industrial Water Treatment	<ul style="list-style-type: none"> ■ Raw water pre treatment ■ Filtration Plants ■ Nano Filtration/ Ultra filtration ■ Softening Plants 	<ul style="list-style-type: none"> ■ Thermal Desalination of sea water treatment ■ Demineralization ■ Zero Liquid Discharge ■ Tertiary Treatment System/ Effluent Recycling
Industrial Wastewater Treatment	<ul style="list-style-type: none"> ■ Physico Chemical Treatment – Oil Removal system using DAF/ API/ CPI seperators ■ Neutralization and primary sedimentation and grit removal ■ Biological anaerobic treatment – UASB ■ Tertiary Treatment – activated carbon/ sand filtration, disinfection 	
Desalination	<ul style="list-style-type: none"> ■ Multi Stage Flash ■ Multi-effect Distillation ■ Thermal Vapor Compression 	<ul style="list-style-type: none"> ■ Mechanical Vapor Compression ■ Reverse Osmosis and Electro dialysis
Recycling	<ul style="list-style-type: none"> ■ Micro filtration ■ Membrane Bio Reactors 	<ul style="list-style-type: none"> ■ Micro filtration ■ Membrane Bio Reactors

Source: VA Tech Wabag

Water Market in India

Figure 15. Supply/Demand in India (2000)

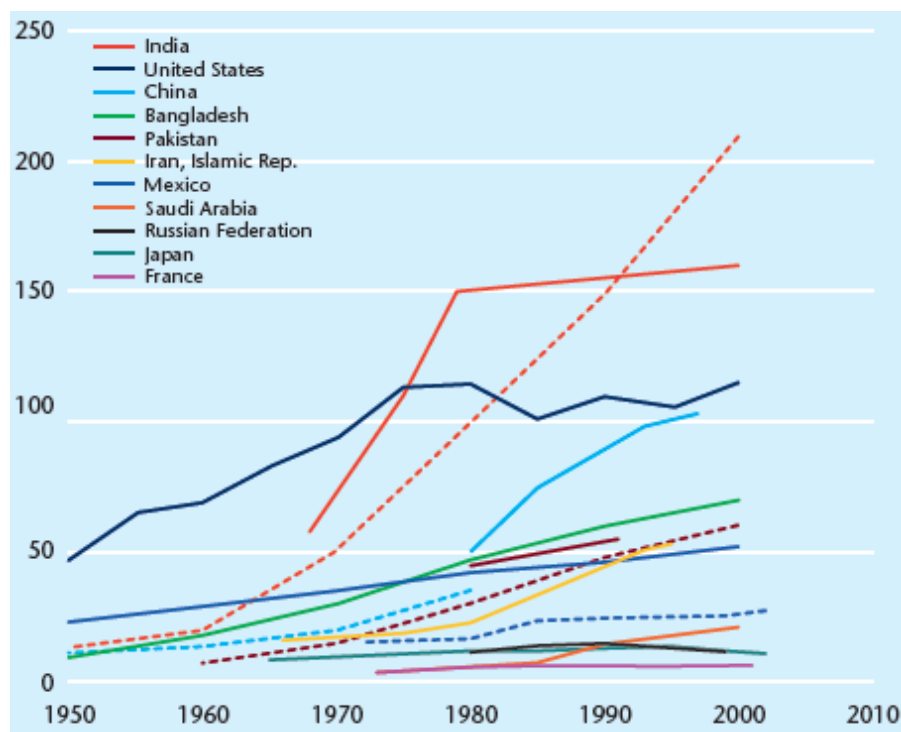
Annual Precipitation		
	3,500	
Total Reserves		
	1,853	100%
Non-Usable Water - Ground Water	46	2%
Non-Usable Water - Surface Water	731	39%
Usable Water - Ground Water	386	21%
Usable Water - Surface Water	690	37%
Total Usage		
	680	100%
Domestic	34	5%
Industry	42	6%
Agriculture	605	89%

Source: "India's Water Futures to 2025-2050: Business as Usual Scenario and Issues" (IWMI), "India's Water Resources, Availability, Needs And Management: 1st Century" (German Coastal Engineering Research Council) (figures in Tn L/Year)

The major opportunities in India lie in the waste water treatment and recycling segments. Agri-based industries such as sugar, fertilizers, and textiles are among the top producers of waste water in the country, offering significant opportunities in waste water treatment and recycling, thereby allowing the treated water to be reused in the production process. In the domestic sector, major opportunities are in water treatment (~29% of the waste water is treated in Class I cities) and in water supply infrastructure in Class II cities, which drive the municipal water utility capex.

- **Growing strain on India's water resources** – Although India has been endowed with large freshwater resources, increasing overexploitation of ground water over the past few decades has resulted in a strain on its resources. Partly attributed to the fast population growth, the situation is exacerbated by traditional and inefficient agricultural practices and populist political practices (free power – leads to over-drawing of ground water via pumps) leading to depletion in ground water resources.

Figure 16. Rapid Growth in Groundwater Withdrawal in India (cubic km)

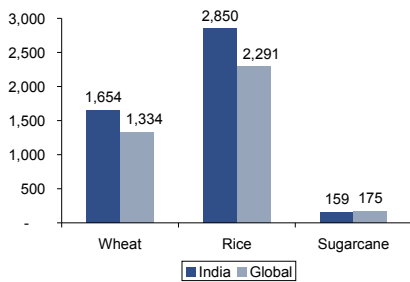


Source: UN World Water Development Report 3, Margat 2008

Water Consumption in Agriculture (~89% of Usage)

- **Leading crop producer** – India is one of the world's leading crop producers, with its demand for food grain slated to grow from ~173MMT in 2000 to ~241MMT in 2050 (International Water Management Institute study). This has led to an increase in water consumption by the agricultural sector.

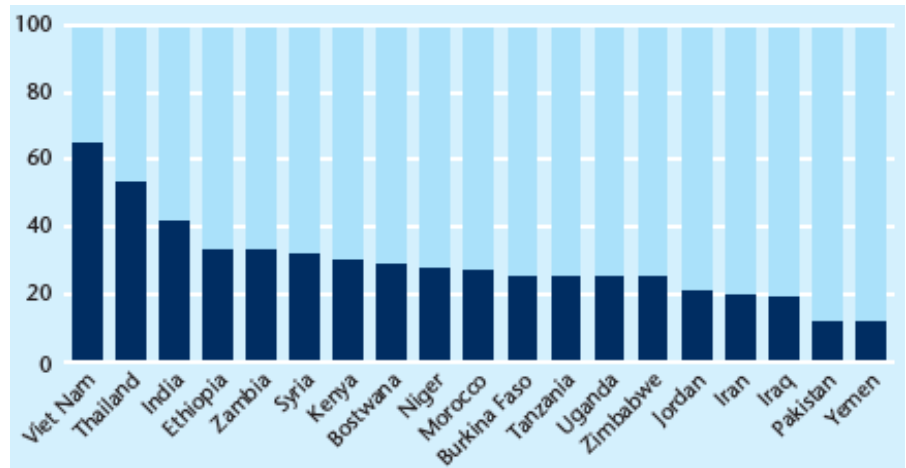
Figure 17. Virtual Water Footprint (cu m/ton)



Source: Unesco-IHE (Water Footprints of Nations)

■ **Inefficient agricultural practices** – India’s traditional and inefficient agricultural practices have contributed to its growing water footprint. This is measured by the concept of virtual water usage. Direct (irrigation) and indirect (production of inputs like fertilizers and machinery, and consumption by farmers) use of water in the agricultural sector constitute its virtual water usage.

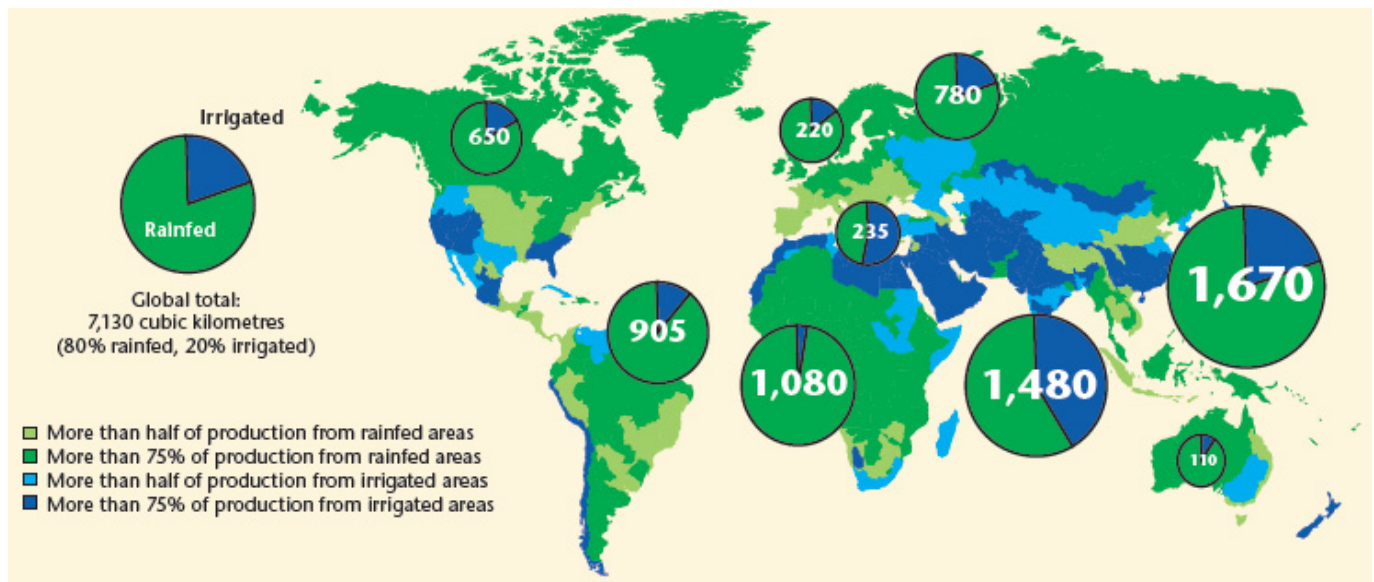
Figure 18. Actual Yields (% of Obtainable Yields) Still Low in India (2005)



Source: UN World Water Development Report, Competitive Assessment of Water Management in Agriculture 2007

■ **The demand for water is not tapped from rainwater** – In the absence of other sources of freshwater, these inefficient practices and the consequent demand are expected to have an adverse impact on the ground water table in India.

Figure 19. India has a Higher Share of Irrigated Agriculture, 2007



Source: UN World Water Development Report 3, Competitive Assessment of Water Management in Agriculture 2007

- **Where is the opportunity?** – Agri-based industries such as sugar, fertilizers, and textiles are among the top producers of waste water in the country. This offers significant opportunities in waste water treatment segment and recycling, thereby allowing the treated water to be reused in the production process.

Water Consumption in Other Sectors (~11% of Usage)

- **Industrial usage** – The industrial sector contributes to ~6% of India's water consumption. However, the consumption is expected to quadruple by 2050 and the contribution is expected to increase to ~18%. The most water-intensive industrial units include thermal power plants, steel plants, and refineries.
- **Shifting domestic usage patterns** – As per VTW management, water usage patterns in India vary from 40-50 Litres/day/person in Tier 3 cities to ~200L/day/person in metros like Mumbai. With increasing urbanization and a change in lifestyle (higher usage of showers, baths, automatic washing machines etc.), there is a perceptible shift in the consumption patterns of late. This offers huge potential for growth in India. VA Tech Wabag expects this growth to be driven by desalination and waste water treatment & recycling segments.
- **Where is the opportunity?** – In the domestic sector, the major opportunity seems to be in water treatment, with merely ~29% of the waste water being treated even in Class I cities. Opportunities also exist in the water supply segment in Class II cities, which shall drive the water utility capex.

Figure 20. Opportunities in Water Supply and Waste Water Treatment

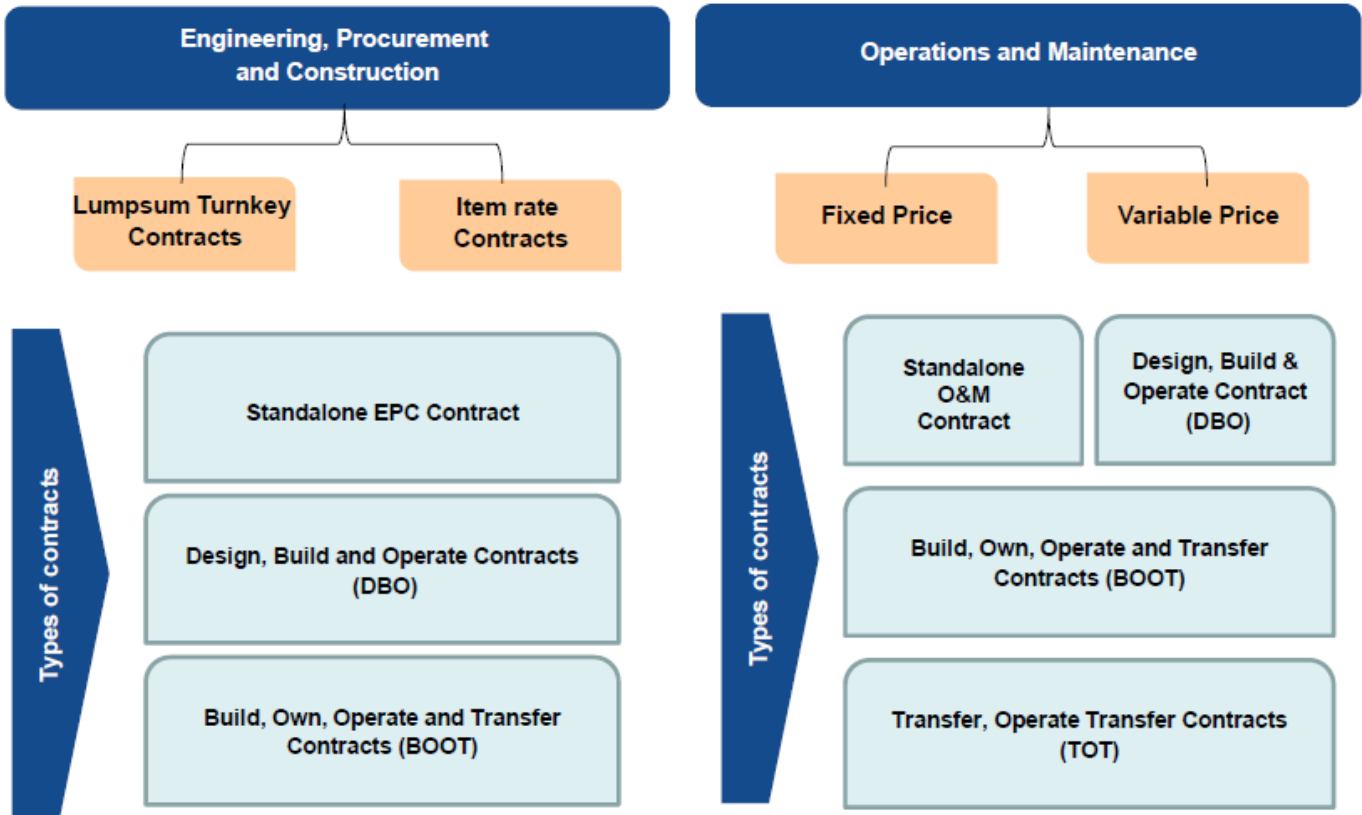
Parameters	Class I Cities	Class II Cities	Total
Number (2001 Census)	423.0	498.0	921.0
Population (mn)	187.0	37.5	224.5
Water Supply (MLD)	29,782.0	3,035.0	32,817.0
Water Supply (LPCD)	159.3	80.9	146.2
Waste Water Generated (MLD)	23,826.0	2,428.0	26,254.0
Waste Water Generated (LPCD)	127.4	64.7	116.9
Waste Water Treated	29.2%	3.7%	26.8%
Waste Water Untreated	70.8%	96.3%	73.2%

Source: Planning Commission – XI Five Year Plan, CIRA

Prevalent Delivery Models

- **Changing nature of project awards** – Since 2003-04, water projects in India were awarded through the DBO model with embedded 5-7 year O&M contracts. In the last two years, projects are increasingly being awarded in the BOOT model, where the municipality pays for the water. The next stage is expected to include the distribution model, where the companies also manage the distribution channels like canals and pipelines and collect directly from the customer.

Figure 21. Water Sector in India – Prevalent Delivery Models



Source: VA Tech Wabag

Key Players in the Market

Larsen & Toubro

L&T's Water Process Technology Business Unit, based in Vadodara, provides integrated solutions for water and waste water treatment with desalination and recycling needs. A leading player in India's water sector over the last 20 years, L&T is focused on conventional water and waste water treatment technologies and systems like municipal water supply, effluent treatment, sewage treatment and pre-treatment of water for industries.

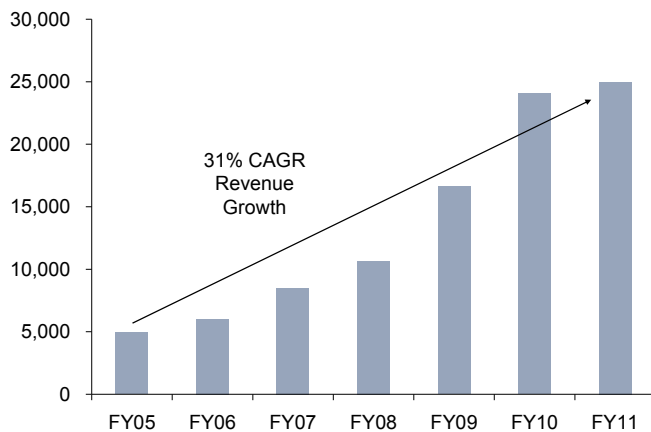
Thermax

The company is a niche player in environment-friendly technologies. A key revenue driver for Thermax is its products and solutions for industrial and waste water treatment, waste heat recovery and air pollution control. The division offers solutions in demineralization, water pre-treatment and clarification for refinery applications and municipal sewage treatment. Thermax entered into the product business in 2007, especially with the reverse osmosis plants for pharmaceutical applications. Its chemicals division makes water treatment chemicals for industrial applications, which are also actively consumed by its water treatment division.

IVRCL/Hindustan Dorr Oliver

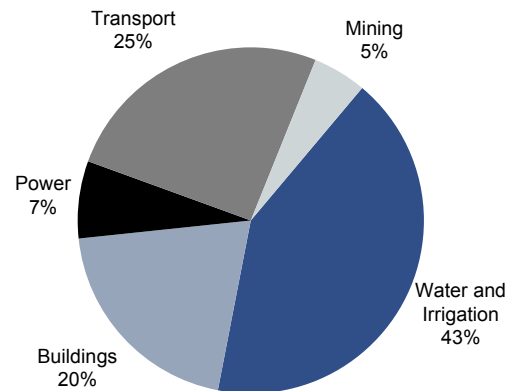
Water infrastructure is one of the core business areas for IVRCL. It undertakes projects such as distribution systems, pumping and re-circulation systems, O&M, irrigation works, canal works, sewage systems, treatment plants and recycling plants. It has also taken up the ~Rs4.9bn Chennai water desalination plant.

Figure 22. IVRCL – Water Division Revenues (RsM)



Source: IVRCL, CIRA

Figure 23. Water & Irrigation form ~43% of IVRCL's Order Book (Sep '11)



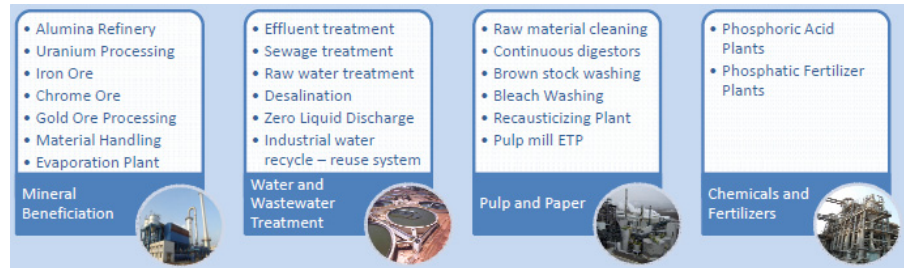
Source: IVRCL, CIRA

IVRCL's subsidiary Hindustan Dorr Oliver (HDO) is a leading EPC company in water and waste water management. The company's solutions in the space include water pumping, conveyance, water treatment, recycle technologies, sewage treatment, industrial effluent treatment, desalination works and distribution. HDO has entered into the following technology tie-ups in the water management space – (1) Acquatech (USA) for RO Plant; (2) SFC (Austria) for SBR; and (3) GE Infra (Canada) for water reuse-recycle technologies.

40% of HDO's FY10 revenues came from water and waste water management.

HDO has undertaken water management and effluent treatment for all major refineries in India in the past five years. Its newly acquired Davy Markham business also caters to the power generation segment for water control systems.

Figure 24. Water Segment is the Fastest Growing Business Area for HDO

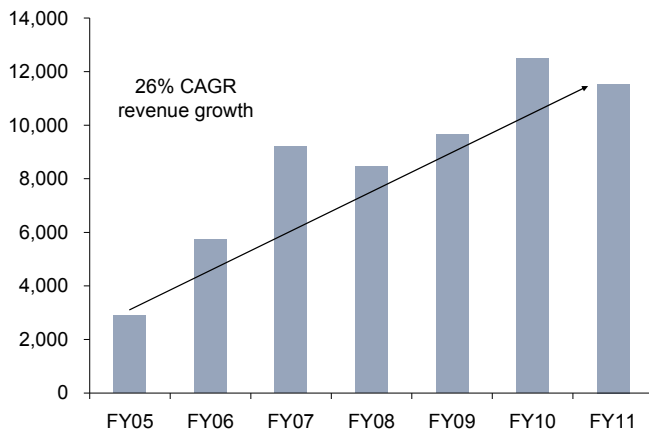


Source: HDO Presentation

NCC

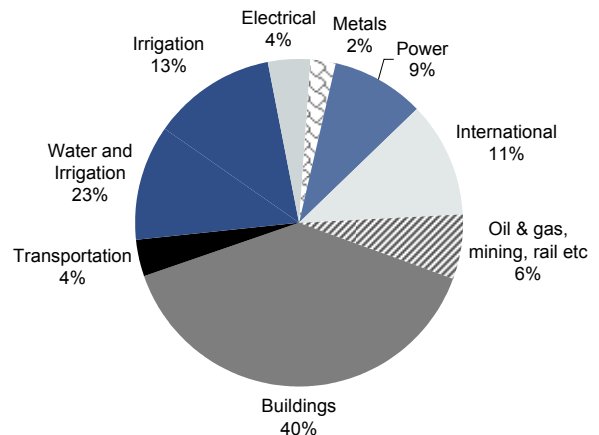
NCC's construction business entered the water and environment sector in 1999, where it now has a significant presence. Within a decade, the sector's contribution to the company's revenues rose to ~22%. In this vertical, NCC undertakes water supply projects, treatment plants and underground drainages.

Figure 25. NCC – Water and Environment Division Revenues (RsM)



Source: NCC, CIRA

Figure 26. Water & Irrigation form ~23% of NCC's Order Book (Sep '11)



Source: NCC, CIRA

VA Tech Wabag

VA Tech Wabag (VTW) is a leading company in the water treatment industry with activities ranging from design, installation, supply and operational management of drinking water and waste water treatment plants. Headquartered in Chennai, the company also has a market presence in the Middle East, North Africa, Central and Eastern Europe, China and South East Asia.

Ion Exchange India

Incorporated in 1964, the company undertakes services such as O&M and BOO/T across the household, commercial and industrial markets in India, South East Asia, Africa and the Middle East. Over the past four decades, it has undertaken over 35,000 plants including over 400 major installations at thermal and nuclear power stations, fertilizer factories, refineries, petrochemical and other industries. The company also undertakes exports of equipment, ion exchange resins, membranes, and water treatment chemicals.

IVRCL Infra & Projects

(IVRC.BO; Rs36.15; 1)

Valuation

We value IVRCL shares at Rs48 based on a sum-of-the-parts (SOTP) methodology given its broad business profile. We value the core construction business at Rs33/share based on 6x Dec-12E, a discount to our target P/E multiple for Larsen and Toubro, justified in our view given the difference in scale and skill sets. We value the HDO stake at Rs3/share and the IVR Prime Urban stake at Rs12/share based on current market capitalization and by applying a 30% holding company discount.

Risks

Key downside risks which could prevent the shares from reaching our target price include: 1) Longer-than-expected delays in execution of AP irrigation projects, 2) Lower-than-expected order inflows, 3) Increasing commodity prices. Key upside risks include: 1) Availability of funding with AP government, 2) Faster execution of projects, 3) Better-than-expected order inflows, and 4) Higher-than-expected margins.

Larsen & Toubro

(LART.BO; Rs1,292.00; 1)

Valuation

Our Rs1,511 target price is based on sum-of-the-parts (SOTP). We use 15x Mar13E earnings for the parent (Rs1,114), well supported by EPS growth of 13% and average RoEs of 18%. We also believe that the parent's numbers do not capture the value inherent in subsidiaries, which we value at Rs397, with L&T Infotech at Rs87 (12x Mar13E EPS, in line with second-tier peers), 51% stake in L&T-MHI JV at Rs38, L&T IDPL at Rs86 and L&T Finance Holdings at Rs127 (At CIRA target price of Rs55).

Risks

Downside risks include: 1) attracting and retaining talent; 2) the E&C and electrical equipment businesses are sensitive to economic variables; 3) competitive pressures; and 4) L&T needs to keep abreast with technology trends to sustain valuations and earnings. These risks could impede the stock from reaching our target price.

NCC

(NCCL.BO; Rs37.95; 3)

Valuation

Our sum-of-the-parts-based (SOTP) target price for NCC of Rs53 per share is based on the company's five distinct parts - the cash contract business, BOT projects, real estate projects, and land bank. We value the core construction business at a P/E of 6x Dec-12E FD EPS (a discount to our target multiple for L&T, given difference in scale and skill sets), to derive a value of Rs37 per share. We value its international subsidiaries at Rs5 based on a P/E of 4x Dec-12E, at a

discount to its core construction business given lower visibility. We value its BOT projects at Rs16 per share, using the P/BV method to value its share in these projects (and applying a 20% holding company discount to account for execution risks) and value NCC Urban at Rs13 based on a 30% discount to estimated NAV (in-line with second-tier real estate companies in our coverage universe). We have also removed the value of investments in the Dubai Harmony project and Sompet power project land given lack of clarity on these investments (Rs18 per share).

Risks

Key upside risks that could prevent the shares reaching our target price include: 1) fall in material prices, 2) fall in interest rates and 3) pick up in order inflows and execution.

Thermax

(THMX.BO; Rs474.95; 2)

Valuation

Our Rs453 target price is based on a P/E of 14x Dec 12E. We value Thermax at a discount to historical averages of 16x in light of the adverse macro environment and lower earnings growth over FY11-14E.

Risks

Key upside risks that could impede the stock from reaching our target price include a pickup in private-sector capex and faster-than-expected power capacity expansion in India. Key downside risks to our target price include rising competitive intensity and lack of order inflows due to a deteriorating macro environment in the power sector.

Va Tech Wabag (VATE.BO)

Price (01 Dec 11)	Rs339.40
Shares Outstanding	27M
Free Float (%)	63
Fiscal Year End	31 Mar
Market Cap	Rs9,007M US\$175M

Price Performance (RIC: VATE.BO, BB: VATW IN)



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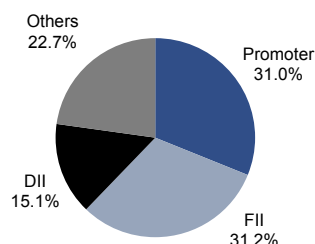
Analyzed Non-Rated Snapshot

- **Company Overview** — VA Tech Wabag (VTW) is a leading company in the water treatment industry with activities including design, installation, supply and operational management of drinking water and waste water treatment plants. Headquartered in Chennai, VTW also has a market presence in the Middle East, North Africa, Central and Eastern Europe, China and South East Asia. We recently met Mr. S. Varadarajan, a promoter and CFO of VTW (see page 2 for Management Meeting Takeaways).
- **Business Strategy** — Management envisages growing revenues by 400% in the next five years on the back of: (1) Focus on an asset-light strategy – VTW performs the value added and high margin work processes in-house and outsources the civil construction process to third party contractors; (2) Strong R&D focus; (3) VTW has ~Rs2.75bn cash in its balance sheet, which empowers it to evaluate inorganic growth opportunities to gain access to new markets.
- **Industry Overview** — Although India has been endowed with large freshwater resources, recent overdraw of ground water has resulted in a strain on its resources. The major opportunities in India lie in waste water treatment and recycling segments. Agri-based industries, such as sugar, fertilizers and textiles, are among the top producers of waste water in the country, offering significant opportunities in waste water treatment and recycling, thereby allowing the treated water to be reused in the production process. In the domestic sector, major opportunities are in water treatment (~29% of the waste water is treated in Class I cities) and in water supply infrastructure in Class II cities, which drive the municipal water utility capex.
- **Competitive Analysis** — Management mentioned that it competes with Thermax and Hindustan Dorr Oliver in the industrial water treatment segment, and IVRCL, NCC, Ramky Infrastructure and L&T in the conventional technologies. VTW also competes with other water technology companies like Ion Exchange, Doshion, Driplex and global competitors like Suez, Befesa, and Cadagua.
- **Recent Results** — In 2QFY12, VTW registered revenues of ~Rs2.7bn, up 12% YoY and EBITDA margins expanded by ~320bps. The company registered a PAT of Rs69mn, compared to a loss of Rs19mn in 2QFY11. Management mentioned that the business is highly seasonal with H1 accounting for ~35-40% of full year revenues. This has historically led to a margin expansion in 2H due to operating leverage.
- **Strengths** — (1) Long association with Wabag brand name; (2) Project reference list of over 2,250 projects across various sub-segments; (3) Professional management team with immense industry experience; (4) Focus on asset-light strategy yields high returns.
- **Weaknesses** — Smaller size compared to other diversified competitors, who can pose a competitive threat when the market size scales up.

Management Meeting Takeaways

We recently met Mr. S. Varadarajan, a promoter and CFO of the company. The following are the key takeaways.

Figure 1. Shareholding Pattern (Sep 2011)

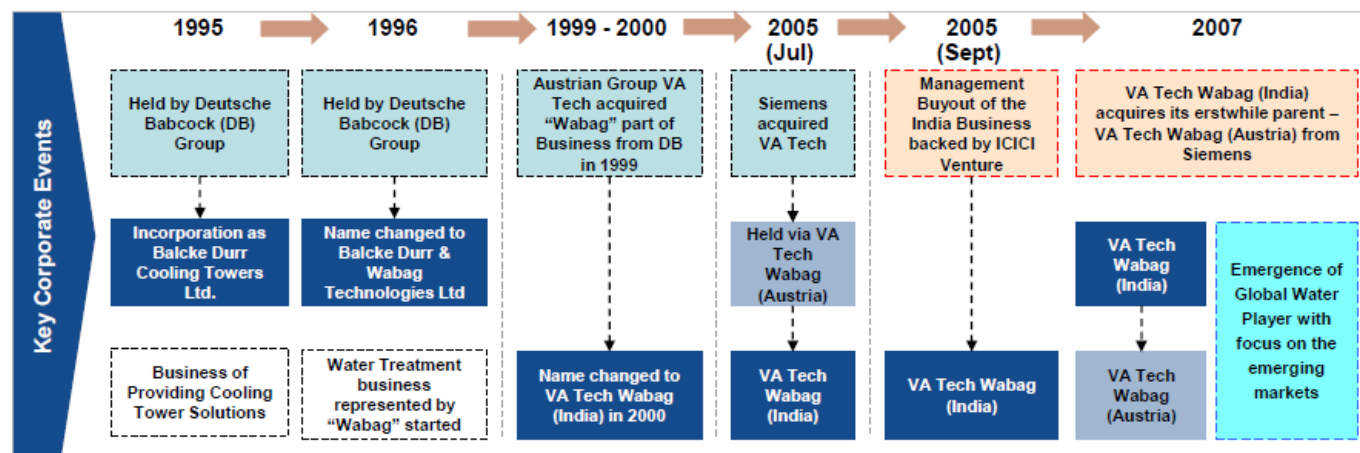


Source: Company Filings

Leading Company in Water Technology

- Leading Water Company** - VTW is a leading company in the water treatment industry with activities ranging from design, installation, supply and operational management of drinking water, to waste water treatment plants. Headquartered in Chennai, the company also has a market presence in the Middle East, North Africa, Central and Eastern Europe, China and South East Asia. The shares were publicly listed in the BSE and NSE on 13th October 2010.
- Management buyout** – Earlier a part of Deutsche Babcock as its water technology and engineering division, the company was acquired by Siemens in July 2005. In September, the India business underwent a management buyout with ICICI Ventures.
- Acquisition of Wabag Austria** – In 2007, VTW India acquired its erstwhile parent – VA Tech Wabag (Austria) from Siemens. The Wabag Group, founded in 1924, has a strong execution track record with ~6,000 projects in the last nine decades, including over 2,250 projects in the last three decades. VTW Austria had 65 legacy projects under execution with bank guarantees of ~Euro70mn with customers. For the acquisition, VTW India released Siemens from the guarantees and took on the projects. Today, ~9-10 projects are pending completion with ~Euro10mn bank guarantees outstanding.

Figure 2. VA Tech Wabag – Over The Years



Source: VA Tech Wabag

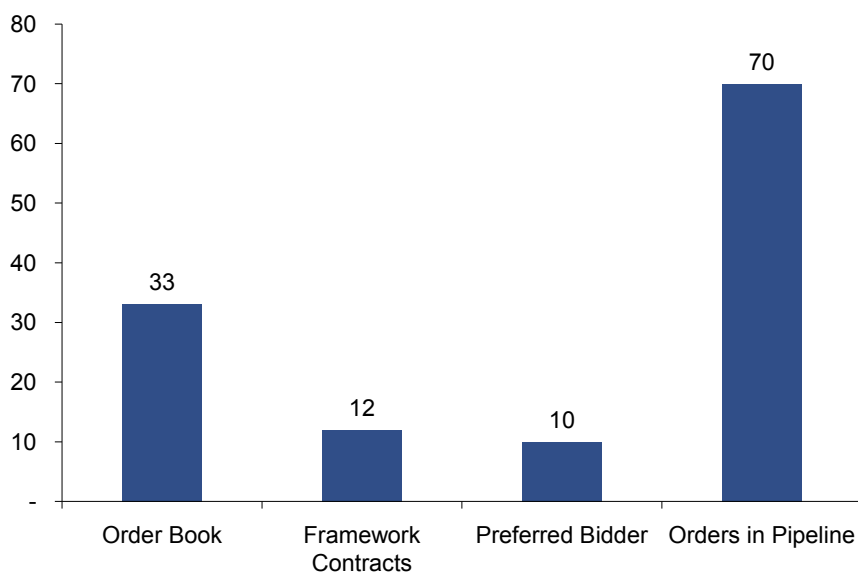
Well-Diversified Business

VTW is present in various segments of the water treatment industry.

- International Business (~35% of revenues)** – International operations contribute ~35% of the company's revenues. VTW is present in 12 of the 15 fastest growing water markets globally with market presence in the Middle East, North Africa, Central and Eastern Europe, China and South East Asia. The company conducts its global operations through subsidiaries, branches and representative offices in Austria, the Czech Republic, China, Switzerland, Algeria, Romania, Tunisia, UAE, Libya and Macao. In its international markets, VTW benefits significantly from its association with the Wabag brand name and a project reference list of over 2,250 projects across various sub-segments.

- **Municipal Business (~35% of revenues)** – These projects typically have longer gestation periods, with average execution periods ranging from ~18-24 months. The average contract has gross margins of ~20% and these contracts typically have pass-through for raw material and other key costs. The company's key competitors in the conventional technologies include IVRCL, NCC, Ramky Infrastructure and L&T.
- **Industrial Water Business (~15% of revenues)** – The business is split between public and private orders. Projects in this business are typically executed in ~12-15 months. Indicative gross margins are in the range of ~18-20% for private projects and ~14-15% for public projects. In its industrial projects, VTW specifically negotiates for escalation of steel prices since the structures are predominantly made of steel. The company's key competitors in the industrial water segment include Thermax, Ion exchange, Doshion, and Driplex. HDO is its main competitor in the industrial waste water segment.
- **Operation and Maintenance Business (~15% of revenues)** – These contracts are spread over a longer duration of 5-7 years and have higher EBITDA margins of 18-20% than the EPC contracts, according to management. For example, to set up a desalination plant with ~100mn L/day capacity, ~48% of the contract value is for the O&M contract. The O&M contracts awarded also include the running costs, including power.

Figure 3. VA Tech Wabag – Visibility of Orders (Sep 2011)



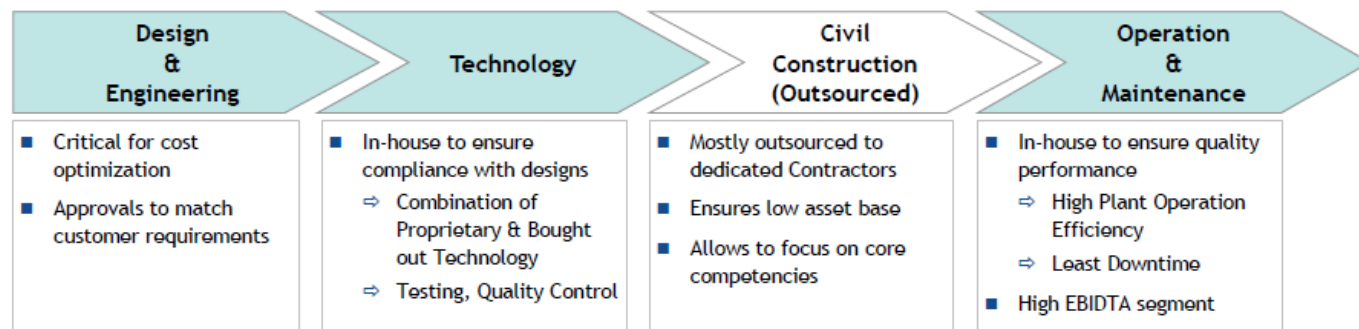
Source: Company, Citi Investment Research and Analysis

Corporate Strategy – 5x in 5 years

Management envisages growing revenues by 400% in the next five years, largely organically.

- **Focus on asset-light strategy** – Management is very clear about focusing on an asset-light business model. Consequently, VTW performs the value added and high margin work processes in-house and outsources the civil construction process to third party contractors, overseen by experienced project management teams. VTW will however look at picking up minority stakes at the SPV level.

Figure 4. VA Tech Wabag – Asset Light Business Model



Source: VA Tech Wabag

- **Inorganic growth for market access** – Management believes that entry barriers in the industry are high including, but not limited to, the regulatory framework, political, and bureaucratic barriers. As per the company, it could take 2-3 years to enter a new market in an organic fashion. VTW has ~Rs2.75bn cash in its balance sheet, which empowers it to evaluate inorganic growth opportunities to gain access to new markets. The company proposes to evaluate targets for access to newer markets or deeper penetration in existing markets - in desalination or recycling technologies.
- **Strong focus on R&D** – VTW has R&D centers located in Chennai (India), Vienna (Austria), and Winterthur (Switzerland). The company owns 160 patents (both process and product patents) and has applied for a further 47.

Management Team

The company is promoted by a set of qualified professionals with an average of 20 years of experience in the water industry. After a long association with the company, the team effected a management buy-out from Siemens in 2005.

- **Mr. Rajiv Mittal (Managing Director)** has been the MD of the company since September 2000. He has 27 years of experience in the water industry, and was previously associated with Wabag Water Engineering Limited, UK as the Deputy Director of International Sales. He is a graduate in chemical engineering from the University of Bombay.
- **Mr. Amit Sengupta (Executive Director – Corporate Strategy)**, earlier associated with Kirloskar AAF, has 32 years of experience. He is responsible for corporate growth strategies, technology acquisitions and development of synergies within the Group.
- **Mr. Shiv Narayan Saraf (Head of Operations)** has 38 years of experience in the water industry. He was earlier working with Ion Exchange India Limited.
- **Mr. S. Vardarajan (CFO and Head of Operations Business Group SBU)** has 24 years of experience, and was the Finance Manager and Company Secretary of PL Agro Technologies Limited in his earlier capacity.

Financial Statements

Figure 5. VA Tech Wabag – Income Statement (RsM)

	FY10	FY11
Income from Operations	12,237	12,330
%Growth	8.0%	0.8%
Cost of sales and services	(8,537)	(8,820)
Employee costs	(1,690)	(1,716)
General, selling and administrative expenses	(897)	(673)
EBITDA	1,114	1,122
EBITDA Margin%	9.1%	9.1%
Depreciation	(139)	(100)
Interest	(257)	(148)
Other Income	57	88
PBT	775	963
<i>Current tax</i>	<i>(358)</i>	<i>(350)</i>
<i>Deferred tax</i>	<i>55</i>	<i>34</i>
Tax Expenses	(303)	(316)
Tax Rate%	39%	33%
PAT Before Minority Interest	472	647
Minority Interest / Share of profit from Associate	7	8
Recurring PAT	479	654
PAT Margin%	3.9%	5.3%
Prior Period Expenditure	(31)	0
Exceptional Items	0	(129)
Reported PAT	448	526

Source: VA Tech Wabag Annual Report

Figure 6. VA Tech Wabag – Balance Sheet (RsM)

	FY10	FY11
Gross block	807	994
Less: Depreciation	408	510
Net block	399	484
CWIP including capital advances	58	77
Total Fixed Assets	458	561
Investments	134	437
Net Deferred tax assets	181	216
Inventories	351	736
Sundry debtors	6,353	7,413
Cash and bank balances	2,185	3,245
Other current assets	2	3
Loans and advances	1,283	1,419
Current Assets	10,174	12,816
Current liabilities	5,379	6,427
Provisions	1,160	1,467
Current Liabilities and Provisions	6,539	7,894
Net Current Assets	3,635	4,922
Total Assets	4,407	6,136
Share capital	47	53
Reserves and surplus	3,969	5,657
Net worth	4,016	5,710
Secured loans	391	427
Total Liabilities and Equity	4,407	6,136

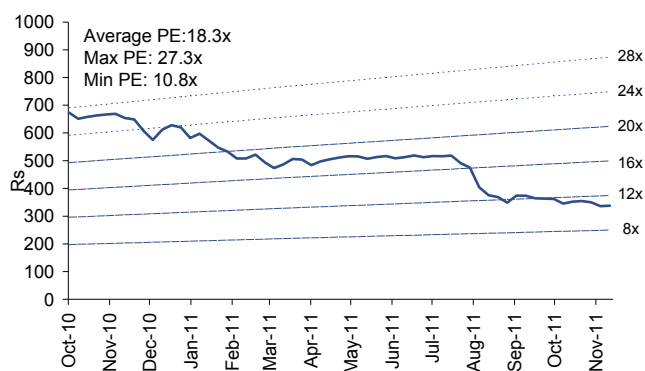
Source: VA Tech Wabag Annual Report

Figure 7. VA Tech Wabag – Cash Flow Statement (RsM)

	FY11
PAT	526
Depreciation	100
Change in DTA	(35)
Change in Working Capital	(227)
Operating Cash Flow	363
Capex	(203)
Change in Investments	(303)
Investing Cash Flow	(507)
Change in Equity	6
Change in Reserves	1,162
Change in Debt	35
Financing Cash Flow	1,203
Change in Cash	1,060
Opening Cash	2,185
Closing Cash	3,245

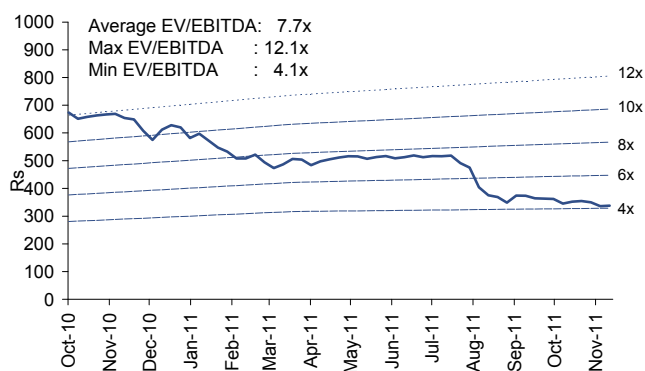
Source: VA Tech Wabag Annual Report

Figure 8. VA Tech Wabag – 1 Year Forward PE Chart



Source: Bloomberg Consensus, Citi Investment Research and Analysis

Figure 9. VA Tech Wabag – 1 Year Forward EV/EBITDA Chart



Source: Bloomberg Consensus, Citi Investment Research and Analysis

Appendix A-1

Analyst Certification

The research analyst(s) primarily responsible for the preparation and content of this research report are named in bold text in the author block at the front of the product except for those sections where an analyst's name appears in bold alongside content which is attributable to that analyst. Each of these analyst(s) certify, with respect to the section(s) of the report for which they are responsible, that the views expressed therein accurately reflect their personal views about each issuer and security referenced and were prepared in an independent manner, including with respect to Citigroup Global Markets Inc and its affiliates. No part of the research analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendation(s) or view(s) expressed by that research analyst in this report.

IMPORTANT DISCLOSURES

IVRCL Infra & Projects (IVRC.BO)

Ratings and Target Price History Fundamental Research

Analyst: Deepal Delivala



	Date	Rating	Target Price	Closing Price
1	9-Jun-09	*1M	*204.50	169.83
2	10-Nov-09	1M	*230.00	185.18
3	15-Dec-09	*2M	*192.50	173.23

	Date	Rating	Target Price	Closing Price
4	1-Feb-10	*1M	*187.00	159.18
5	14-Feb-11	1M	*110.00	72.25
6	31-May-11	1M	*88.00	73.00

	Date	Rating	Target Price	Closing Price
7	2-Sep-11	1M	*48.00	35.75
8	7-Oct-11	Stock rating system changed		
9	7-Oct-11	*1	48.00	36.05

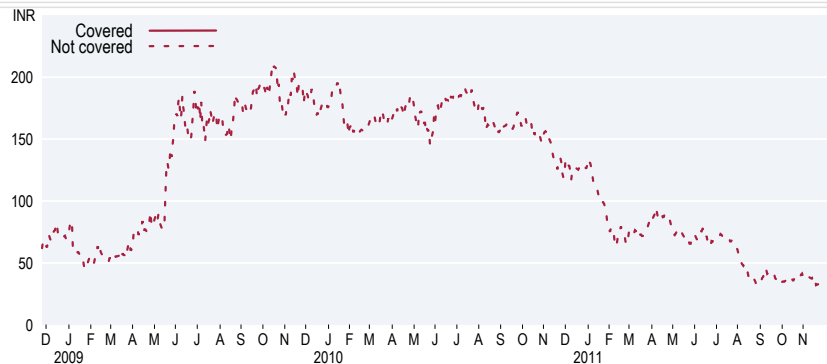
* Indicates change

Rating/target price changes above reflect Eastern Standard Time

IVRCL Infra & Projects (IVRC.BO)

Ratings and Target Price History Best Ideas Research Relative Call (3 Month)

Analyst: Deepal Delivala

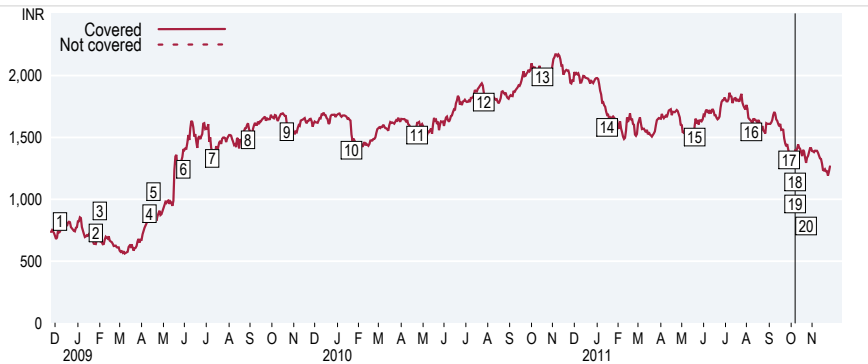


* Indicates change

Rating/target price changes above reflect Eastern Standard Time

Larsen & Toubro (LART.BO)
Ratings and Target Price History
Fundamental Research

Analyst: Venkatesh Balasubramaniam



Date	Rating	Target Price	Closing Price
1 8-Dec-08	*2L	*787.00	740.20
2 27-Jan-09	2L	*697.00	638.20
3 1-Feb-09	*3L	*622.00	689.20
4 13-Apr-09	3L	*810.00	824.00
5 17-Apr-09	*1L	*955.00	866.50
6 29-May-09	*2L	*1,437.00	1,405.60
7 9-Jul-09	2L	*1,466.00	1,389.40

Date	Rating	Target Price	Closing Price
8 28-Aug-09	2L	*1,784.00	1,614.60
9 22-Oct-09	*1L	*1,828.00	1,608.50
10 21-Jan-10	1L	*1,748.00	1,524.35
11 23-Apr-10	1L	*1,875.00	1,617.85
12 27-Jul-10	1L	*2,110.00	1,863.25
13 18-Oct-10	1L	*2,210.00	2,013.15
14 17-Jan-11	*2L	*1,824.00	1,681.15

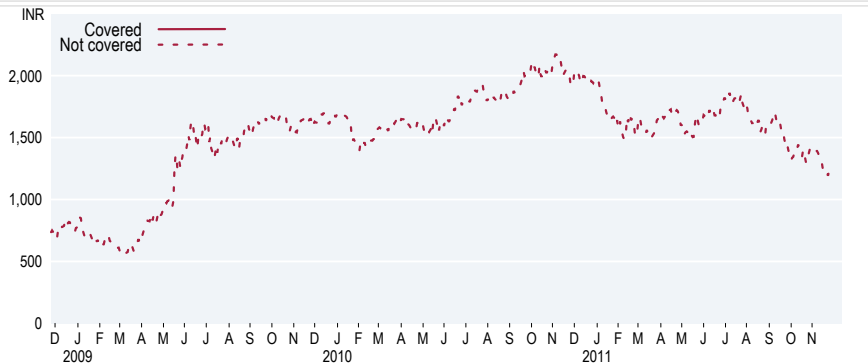
Date	Rating	Target Price	Closing Price
15 19-May-11	2L	*1,745.00	1,594.90
16 8-Aug-11	2L	*1,767.00	1,629.85
17 29-Sep-11	*1L	*1,576.00	1,369.55
18 7-Oct-11	Stock rating system changed		
19 7-Oct-11	*1	1,576.00	1,393.45
20 23-Oct-11	1	*1,511.00	1,336.00

* Indicates change

Rating/target price changes above reflect Eastern Standard Time

Larsen & Toubro (LART.BO)
Ratings and Target Price History
Best Ideas Research
Relative Call (3 Month)

Analyst: Venkatesh Balasubramaniam

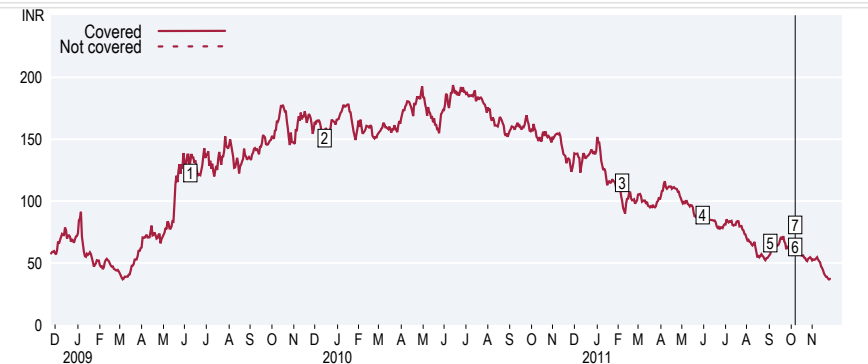


* Indicates change

Rating/target price changes above reflect Eastern Standard Time

NCC (NCCL.BO)
Ratings and Target Price History
Fundamental Research

Analyst: Deepal Delivala



Date	Rating	Target Price	Closing Price
1 9-Jun-09	*1M	*162.00	132.10
2 15-Dec-09	1M	*195.00	150.90
3 6-Feb-11	1M	*128.00	104.10

Date	Rating	Target Price	Closing Price
4 31-May-11	*3M	*85.00	86.15
5 2-Sep-11	3M	*53.00	57.30
6 7-Oct-11	Stock rating system changed		

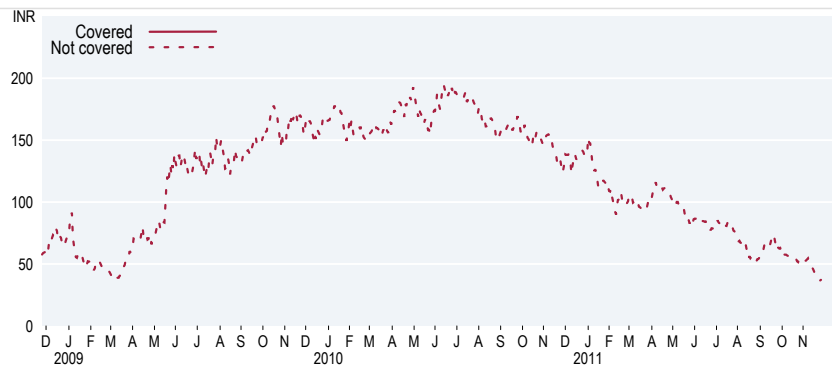
Date	Rating	Target Price	Closing Price
7 7-Oct-11	*3	53.00	57.50

* Indicates change

Rating/target price changes above reflect Eastern Standard Time

NCC (NCCL.BO)
Ratings and Target Price History
Best Ideas Research
Relative Call (3 Month)

Analyst: Deepal Delivala



* Indicates change

Rating/target price changes above reflect Eastern Standard Time

Thermax (THMX.BO)
Ratings and Target Price History
Fundamental Research

Analyst: Deepal Delivala



	Date	Rating	Target Price	Closing Price
1	29-Jan-09	*1M	*211.00	159.30
2	23-Jul-09	*3M	*414.00	417.55
3	10-Mar-10	*1M	*787.00	672.85

* Indicates change

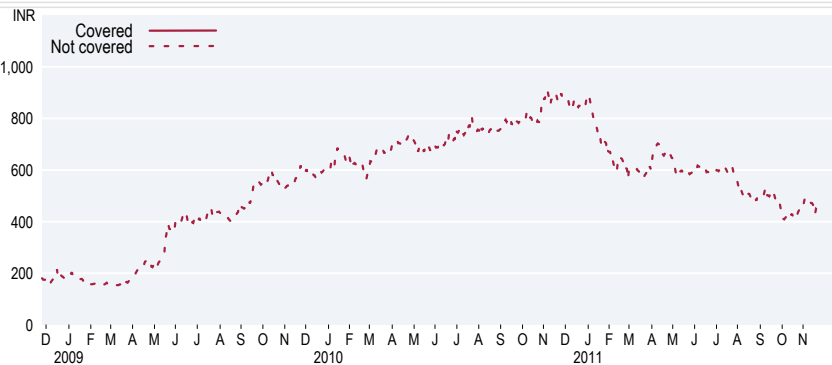
	Date	Rating	Target Price	Closing Price
4	28-Oct-10	*1L	*981.00	849.65
5	30-Jan-11	*2L	*698.00	663.60
6	4-May-11	*3L	*542.00	613.10

	Date	Rating	Target Price	Closing Price
7	29-Sep-11	3L	*453.00	461.05
8	7-Oct-11	Stock rating system changed		
9	7-Oct-11	*2	453.00	418.90

Rating/target price changes above reflect Eastern Standard Time

Thermax (THMX.BO)
Ratings and Target Price History
Best Ideas Research
Relative Call (3 Month)

Analyst: Deepal Delivala



* Indicates change

Rating/target price changes above reflect Eastern Standard Time

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Citigroup Global Markets Inc. or an affiliate received compensation for products and services other than investment banking services from IVRCL Infra & Projects, Larsen & Toubro, Thermax, Va Tech Wabag in the past 12 months.

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<i>Data current as of 10 Oct 2011</i>	12 Month Rating			Relative Rating		
	Buy	Hold	Sell	Buy	Hold	Sell
Citi Investment Research & Analysis Global Fundamental Coverage	59%	34%	7%	10%	79%	10%
<i>% of companies in each rating category that are investment banking clients</i>	45%	42%	37%	50%	43%	46%

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Risk rating takes into account both price volatility and fundamental criteria. Stocks will either have no risk rating or a High risk rating assigned.

Investment Ratings: CIRA's investment ratings are Buy, Neutral and Sell. Our ratings are a function of analyst expectations of expected total return ("ETR") and risk. ETR is the sum of the forecast price appreciation (or depreciation) plus the dividend yield for a stock within the next 12 months. The Investment rating definitions are: Buy (1) ETR of 15% or more or 25% or more for High risk stocks; and Sell (3) for negative ETR. Any covered stock not assigned a Buy or a Sell is a Neutral (2). For stocks rated Neutral (2), if an analyst believes that there are insufficient valuation drivers and/or investment catalysts to derive a positive or negative investment view, they may elect with the approval of CIRA management not to assign a target price and, thus, not derive an ETR.

Analysts may place covered stocks "Under Review" in response to exceptional circumstances (e.g. lack of information critical to the analyst's thesis) affecting the company and / or trading in the company's securities (e.g. trading suspension). As soon as practically possible, the analyst will publish a note re-establishing a rating and investment thesis. To satisfy regulatory requirements, we correspond Under Review and Neutral to Hold in our ratings distribution table for our 12-month fundamental rating system. However, we reiterate that we do not consider Under Review to be a recommendation.

Relative three-month ratings: CIRA may also assign a three-month relative call (or rating) to a stock to highlight expected out-performance (most preferred) or under-performance (least preferred) versus the geographic and industry sector over a 3 month period. The relative call may highlight a specific near-term catalyst or event impacting the company or the market that is anticipated to have a short-term price impact on the equity securities of the company. Absent any specific catalyst the analyst(s) will indicate the most and least preferred stocks in the universe of stocks under consideration, explaining the basis for this short-term view. This three-month view may be different from and does not affect a stock's fundamental equity rating, which reflects a longer-term total absolute return expectation. For purposes of NASD/NYSE ratings-distribution-disclosure rules, most preferred calls correspond to a buy recommendation and least preferred calls correspond to a sell recommendation. Any stock not assigned to a most preferred or least preferred call is considered non-relative-rated (NRR). For purposes of NASD/NYSE ratings-distribution-disclosure rules we correspond NRR to Hold in our ratings distribution table for our 3-month relative rating system. However, we reiterate that we do not consider NRR to be a recommendation.

Prior to October 8, 2011, the firm's stock recommendation system included a risk rating and an investment rating. **Risk ratings**, which took into account both price volatility and fundamental criteria, were: Low (L), Medium (M), High (H), and Speculative (S). **Investment Ratings** of Buy, Hold and Sell were a function of CIRA's expectation of total return (forecast price appreciation and dividend yield within the next 12 months) and risk rating. Additionally, analysts could have placed covered stocks "Under Review" in response to exceptional circumstances (e.g. lack of information critical to the analyst's thesis) affecting the company and/or trading in the company's securities (e.g. trading suspension). Stocks placed "Under Review" were monitored daily by management and as practically possible, the analyst published a note re-establishing a rating and investment thesis. For securities in developed markets (US, UK, Europe, Japan, and Australia/New Zealand), investment ratings were: Buy (1) (expected total return of 10% or more for Low-Risk stocks, 15% or more for Medium-Risk stocks, 20% or more for High-Risk stocks, and 35% or more for Speculative stocks); Hold (2) (0%-10% for Low-Risk stocks, 0%-15% for Medium-Risk stocks, 0%-20% for High-Risk stocks, and 0%-35% for Speculative stocks); and Sell (3) (negative total return). For securities in emerging markets (Asia Pacific, Emerging Europe/Middle East/Africa, and Latin America), investment ratings were: Buy (1) (expected total return of 15% or more for Low-Risk stocks, 20% or more for Medium-Risk stocks, 30% or more for High-Risk stocks, and 40% or more for Speculative stocks); Hold (2) (5%-15% for Low-Risk stocks, 10%-20% for Medium-Risk stocks, 15%-30% for High-Risk stocks, and 20%-40% for Speculative stocks); and Sell (3) (5% or less for Low-Risk stocks, 10% or less for Medium-Risk stocks, 15% or less for High-Risk stocks, and 20% or less for Speculative stocks).

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