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OPPORTUNITIES IN CLEANTECH SERVICES

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INTRODUCTION

This report discusses the policy and business drivers of cleantech, and the development of the cleantech sector in terms of business models, globalization, technological diffusion and growth.

This report discusses the policy and business drivers of cleantech, and the development of the cleantech sector in terms of business models, globalization, technological diffusion and growth. The emphasis on cleantech has increased in recent years due to international concerns about the economic impact of climate change caused by GHG (largely CO₂) emissions from energy production and consumption. This is in the context of rising energy needs in developing countries, continuing high levels of energy consumed in developed countries, and consumer awareness in industrialized countries about the importance of achieving a globally clean environment.

Climate change drives cleantech because cleantech is not, as of 2010, a viable technology on a stand-alone basis. Since carbon dioxide emissions generate externalities,¹ it is possible that cleantech will be viable once the effect of economic externalities is priced. The only way to impose the costs of externalities is through government intervention. As we discuss further below, government intervention in climate change needs to be coordinated globally rather than left to individual countries.

On the other hand, there is a case to be made for national promotion of cleantech in order to achieve national energy security, i.e., even without considering the costs of climate change. Viewed thus, cleantech is part of a diversified group of energy technologies that includes conventional and nuclear energy. It is relevant for achieving a nation's energy security, just like nuclear power did for many nations in the 1960s, even when its economics were significantly poorer than conventional energy.

The key business driver, and one that is already established, is the Kyoto Protocol (and its potential successors). The Kyoto Protocol's effect will continue at least until 2012 and likely beyond. The second business case for cleantech, particularly popular in Silicon Valley, starts by pointing out that while much of cleantech would likely not exist without state regulation and subsidies, the development of cleantech in most countries, including China, is also happening within unsubsidized firms.

Indeed, the past decade has seen significant long-term investments by venture capitalists (VCs) in cleantech. Overwhelmingly, VC investment is based on the assumption that cleantech, through new innovation, can be profitable without government subsidies. As of 2010, the trends are promising. We discuss this further below. The trends in technology indicate that Silicon Valley is rapidly assuming leadership of cleantech through a combination of government support and VC finance. As this happens, it will release opportunities for service providers, as we discuss below. However, global technological diffusion will be a greater challenge than in IT, due to skills shortages in developing countries, including India. The report first assesses government policy and its impact, and then discusses the business issues.

GOVERNMENT POLICY

Cleantech includes technologies to monitor and reduce GHG emissions – primarily carbon dioxide emissions (also termed as just "carbon emissions"), and raise the productivity and efficiency of energy production and usage systems. As the economics below show, cleantech is not yet a viable technology, as of 2010. This, it is sometimes believed (though yet to be proven) is because externalities, as defined above, are not priced in.

Externalities are a common feature of economic life anywhere. It is generally accepted that the only way to price externalities is through government intervention. Since cleantech undoubtedly generates externalities, government intervention – in the form of regulation, taxes and subsidies – is the key driver of cleantech. Regulation is used to ensure that emissions targets are met,

¹ Externalities occur when one person's actions affect another person's well-being and the relevant costs and benefits are not reflected in market prices. (Cowen, T., Concise Encyclopedia of Economics, 1st Ed., 1999)

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taxes are used to raise the private cost of polluting and subsidies are used to reduce private costs of investing in and installing cleantech systems. Note that, unlike most externalities such as smoking pollution, whose causes and effects are local (and can therefore be managed by local governments), climate change is caused by local action but causes an impact that is global. Hence, global consensus on government policy are critical to climate change control and inter alia, for cleantech's future.

The emphasis by governments on cleantech development and use has increased in recent years due to concerns about climate change. This is occurring in the context of rising energy needs in developing countries, continuing high levels of energy consumed in developed countries, and consumer awareness in industrialized countries about a locally clean environment. The United Nations Conference on Climate Change held in Copenhagen in December 2009 raised global awareness of climate change, though the conference's concrete achievements were limited to a reiteration by a few key countries of prior national commitments to work together to keep global warming within 2C, and a request to all countries to indicate their long-term carbon reduction commitments by January 31, 2010 – an already unmet deadline. The uncertainty occasioned by the relative failure of the Copenhagen summit will ripple through the corporate sector in the forms of delayed investments in climate change preparedness, mitigation and response.

In practice, the primary forms that government intervention have taken so far are regulation and, to a more limited extent, subsidies. Taxes on carbon emissions are rarely imposed.² The reasons are both economic and political. As noted, government intervention needs to be globally coordinated to be effective. Regulations, such as capping emissions, are politically easier to impose globally compared with taxes, which tend to be determined by several layers of national government. Often, regulations can be imposed by administrative fiat, even in a democracy.

See Appendix 1 for a summary of government emissions policies.

On the other hand, there is a case to be made for national promotion of cleantech in order to achieve national energy security, i.e., even without considering the costs of climate change.³ Viewed thus, cleantech is part of a diversified group of energy technologies that includes conventional and nuclear energy. It is relevant for achieving a nation's energy security, just like nuclear power did for many nations in the 1960s, even when its economics were significantly poorer than conventional energy.

As of 2010, most countries do not, however, view cleantech as security-increasing, but this view will surely become more established with time. When this happens, cleantech will likely receive subsidies to offset uneconomic costs, regardless of externalities caused by carbon emissions.

Impact on government policy arising from

Although linked by the common goal of reducing carbon emissions, different stages of national development have dictated different national approaches to and policies on cleantech. In developing countries, green electrification systems largely focus on the cleanest ways to add generating, transmission and distribution capacity to the electricity grid in order to meet the needs of unserved locations and to meet the emergent needs of commerce and industry. The carbon impact of new generation capacity comes directly from new generating stations and indirectly from industries that are set up to use the new electricity capacity. Carbon impact is measured by the ratio of green electrical energy, i.e., electrical energy produced from renewable, to total electrical energy produced.

This approach to reducing carbon emissions in developing countries usually means that national policies on generation will incentivize investments in large-scale renewable sources of electricity, such as hydropower and wind power.

² France's decision to impose a 32 euro tax per pound of carbon, earlier planned for January 2010, was still pending implementation as of February 2010.

³ http://laCleantech.net/renewable_energy.htm, downloaded February 1, 2010

Further, in developing countries, investing in clean distributed power generation saves investments in yet-unbuilt transmission and distribution systems. It also improves the quality of power in many cases, since developing country grid systems are often unreliable. Hence, incentives for municipalities or smaller groups to invest in a distributed power grid is likely to be benchmarked against the cost of large intra-state transmission and distribution systems and the cost of unreliable power.

In developed countries, on the other hand, generating capacity is adequate. Hence, green electrification policy focuses on reducing the emissions content of existing, usually thermal, power plants.

The importance of distributed power generation is also for different reasons in developed countries, since grid and distribution capacity are otherwise adequate. Distributed power generation is unlikely to be made through community-level investments since the regulatory cost (of not using existing transmission and distribution infrastructure) is significant. Contrast this with the lower cost in developing countries due to the shortage of a built-out transmission and distribution infrastructure.

Instead, individual homeowners, with a personal, non-economic predisposition to contribute to the mitigation of climate change, are likely to invest in small-scale renewables if adequately partly incentivized. To the extent that there are scale economies in distributed power generation and distribution, it follows that outcomes might be suboptimal.

To illustrate the difference between developing and developed country costs and to show the potential suboptimality of distributed generation, consider the following example. Suppose that, for some community, grid power costs 15c/kWh, consisting of distribution costs (up to the community sub-distribution station) of 10c/kWh and thermal generation costs of 5c/kWh. For a new community (developing country case), the opportunity cost of distributed power is 15c/kWh. This is because the new

community does not possess an existing distribution grid.

For an old community, the opportunity cost is 5c/kWh. This is because the existing distribution grid must continue to be paid for.

This example shows that the economic benchmarks for a new community and an old community can be substantially different; given higher opportunity costs, the new community is more likely to invest in distributed generation.

To illustrate suboptimality within the old community, note that for an individual planning to install generating capacity in his backyard or rooftop, the opportunity cost will be higher than 5c due to lack of scale economies and managing peak load. Suppose it is 10c. The individual will invest in distributed generation if the cost is below 10c. If, say, the cost is 9c and all individuals shift to distributed generation, the community's cost rises to 19c, higher than before. This is because the community, as a whole, must continue to finance the pre-installed grid system even if it does not draw power from it (in practice, high storage costs mean that the grid will be used, though less than before).

The differences in national priorities between developing and developed countries lead to different regulatory and subsidy regimes, and different opportunities for cleantech. Large-scale solar energy installations are more important to developing countries and will be incentivized accordingly. On the other hand, efficiency-raising investments within older power plants based on thermal generation are more important in developed countries and will be incentivized accordingly.

A similar difference exists in another large focus area for climate change, transportation.⁴ In developing countries, the focus of carbon emissions in this sector is on enabling investment in rail and thus increasing its spread relative to road transportation. The carbon impact is measured by the ratio of carbon dioxide per tonne-km of rail to road miles travelled by passengers (or goods transported by freight rail).

⁴ Transportation accounts for 15% of GHG emissions in developed countries (E&Y)

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By contrast, in developed countries, the focus is on the conversion of existing transport systems based on oil into electricity, such as through the spread of electric-powered vehicles. The gross impact is measured by the ratio of central station electricity to final energy use.⁵

How government policies affect business

Given the public nature of climate change costs, governments are, as noted, key drivers of climate change. Following on from the Kyoto Protocol, polluting entities in participating countries are given rights to pollute.⁶ Such rights arise from pollution reduction investments, such as investments in renewable sources of energy, from a high-cost to a low-cost nation; or from investing in technologies that reduce emission within a given infrastructure. These rights are tradeable rights and are affected by the level of initial caps on the national rights to pollute and ongoing investments to reduce emissions. At present, the cap and trade system is limited to European countries; however, if a new climate change treaty takes effect, this may become a widespread mechanism.

Government policies that affect the growth of cleantech consist of two types: emission reduction policies and renewable energy policies. Emission reduction schemes consist of limits on allowable emissions, taxes, and the issuance of tradable emission allowances and permits, called carbon credits.

Renewable energy schemes consist of policies that encourage the production of energy from renewable energy resources such as water, wind and solar power. They manifest in schemes that provide tradable certificates based on the amount of energy produced from renewable resources. The renewable energy schemes lead to the issuance of certified emissions reduction (CER) certificates, or green certificates. The end user is a distributor or retailer of energy which is required to sell a portion of its energy from renewable sources.

There are some important similarities and differences between the two types of credits. The similarity is that generators of energy are eligible to receive both types of certificates. Carbon credits may also be issued to those industries that use energy and release carbon, such as the transportation sector. However, CER certificates, or green certificates, may only be issued to a renewable energy (green) producer.

Both emission reduction policies and renewable energy policies generate business opportunities for service providers. The first is the certification process that leads to the existence of carbon credits and green certificates. These include the provisioning of technologies to measure, monitor and mitigate emissions of polluters; and the provisioning of technologies to measure the reduction of emissions caused by green production. The second is strategic support, i.e., helping management to assess the risks and opportunities to their companies and other institutions arising from climate change and climate change regulation.⁷

Certification and strategic support are large businesses already. Although firm estimates are unavailable, these are multi-billion dollar business. The client base consists of energy users and generators. The former group includes, potentially, any substantial institution, such as office campuses, IT users and municipalities.

Appendix 2 contains an assessment of sectoral opportunities in cleantech. It may be noted that the kinds of skills that are needed go well beyond IT skills. Such skills largely are at lower levels in developing countries, including India, and may require Wipro to use engineers or firms in developed countries to do the work.

⁵ The net carbon impact should adjust for the emissions for producing the additional electric power.

⁶ These are usually measured as Kyoto Assigned Amount Unit (AAU) or its near-equivalent European Union Allowance (EUA)

⁷ <http://www.cdsb-global.org/index.php?page=draft-reporting-framework>, November 20, 2009

CLEANTECH: OPPORTUNITIES IN SOFTWARE SERVICES

Clean software services technologies fall into different categories. We may classify them by what they are intended to do as well as whom they are intended to serve.

The table below shows the opportunities. The tick marks indicate the areas in which software services may be provided. Each classification offers different service opportunities, listed below.

| Software platforms, applications & services → | Measurement & Monitoring | Platform | Efficiency Software | Mitigation Software | System Integration | Managed Services | Consulting |
|---|--------------------------|----------|---------------------|---------------------|--------------------|------------------|------------|
| CEP | √ | √ | √ | √ | √ | √ | √ |
| T&D of Power | | √ | √ | √ | | | √ |
| Carbon Exchange | | √ | | | | √ | √ |
| Govt. admin | √ | √ | √ | √ | √ | √ | √ |
| City Planning | √ | √ | √ | √ | √ | √ | √ |
| Transport | √ | √ | √ | √ | √ | √ | √ |
| End-users | √ | √ | √ | √ | √ | √ | √ |
| NGOs | | √ | | | | √ | √ |
| Solar | | | | | √ | √ | √ |
| Thermal | | | | | √ | √ | √ |
| Wind | | | | | √ | √ | √ |
| Hydropower | | | | | √ | √ | √ |

Notes: **CEP:** Conventional energy producer, eg., coal-fired generator.

T&D: Transmission and Distribution

End-user examples: Cement, steel, retail users, municipalities, transportation, server farms

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Detailed examples of opportunities for selected sectors are presented below:

| Client type | Activity |
|----------------------|--|
| MNCs and Large Firms | <ul style="list-style-type: none"> • Managing GHG Emissions • Social performance plans at refineries, major chemical facilities and upstream operations • Enterprise sustainability function for legal and global regulatory compliance |
| Government | <ul style="list-style-type: none"> • Regulatory compliance management systems • Paperless process for government departments like Customs/ Excise/IT/ Healthcare – e-billing, e-filing, etc • Green building certification for Government buildings |
| NGOs | <ul style="list-style-type: none"> • Preservation of Natural Environment • Consulting in Policy Making • Emission repositories |
| Technology Firms | <ul style="list-style-type: none"> • Carbon Accounting • CO2 calculation from invoiced data • Compliance Management such as ISO 14001 EMS Management |
| Insurance Companies | <ul style="list-style-type: none"> • Management of Financial Risks • Agent – Customer process optimization |

Appendix 3 captures the Wipro Carbon Management Solution.

This is, per our assessment, according to best practice under GHG capture protocols.⁸

⁸ <http://www.ghgprotocol.org/> , downloaded February 2, 2010

THE BUSINESS CASE FOR CLEANTECH INNOVATION

The past decade has seen significant long-term investment by venture capitalists (VCs) in cleantech. This is undoubtedly partly based on the assumption of large government subsidies, as in the case of Tesla and Solyndra. But, overwhelmingly, VC investment is based on the assumption that cleantech, through new innovation, can be profitable absent government subsidies.

As of 2010, the trends are promising. Consider the most costly technology, solar energy. The cost of solar panels, based on silicon technologies, was about \$8 per watt (including installation, but not considering real estate costs) in 2006.⁹ By 2010, due to innovation by SV firms, funded by venture capitalists, the pre-installation cost was down to \$1 to \$2 per watt (higher for CIGS technologies than for silicon technologies), with installation costs ranging from less than \$1 per watt for CIGS technologies to \$2 per watt for silicon technologies in developed countries. The installation costs are about half these levels in developing countries.¹⁰ By 2011, silicon solar cells are forecast by some venture capitalists to be within 50c per watt.¹¹ At an all-in cost of \$1.5 per watt, the cost compares favorably with the cost of natural-gas driven turbines with an installed cost of 75c per watt plus fuel costs.¹² Nuclear power, with an installed cost of \$7 per watt, is still considerably costlier.¹³ Of course, solar cannot be used on its own since storage technologies are still too costly.

A second set of opportunities is in mitigation technologies. There are two categories of opportunities. The first deals with carbon capture technologies. This is an evolving, currently unregulated field which covers pre-combustion and post-combustion carbon dioxide capture, transportation and storage. The Kerry Boxer American Clean Energy and Security Act is expected to lead, when passed by the House, to a regulatory mechanism to support the commercial development of carbon capture technologies.

The second deals with technologies that reduce energy use. A typical example is developing more efficient management of energy and hardware that controls energy use.

It is clear that cleantech is becoming very important to the centers of technology development. The latest MoneyTree venture capital report illustrates how cleantech is helping Silicon Valley flex its long-standing leadership status in tech. Bay Area startups, which usually attract about one-third of venture investments, landed a remarkable 46 percent of venture dollars during the quarter. The swing factor was cleantech.¹⁴ Out of \$4.8 bn in venture capital investments in the US in 3Q09 (up 17% over Q2), biotech was the leader at \$905 m, followed closely by cleantech at \$898 m - an 89% increase over Q209.¹⁵

Figures released by an industry group, the CleanTech Group, show that the cleantech sector "accumulated \$1.59 billion in fresh venture investments across 134 companies" and this was 10% more than the \$1.2 billion it had accumulated in the second quarter of 2009. Cleantech's share of the VC market has increased from 3% of the market at the beginning of 2004 to 27% of the market at the end of 3Q09.¹⁶ Much of the increase in VC investment seems to be due to government's support for this sector. The CleanTech Group's report noted that "Government investments are giving investors the assurance they need to put capital to work in cleantech." For instance, Silicon Valley-based electric car maker Tesla Motors raised \$82.5 million of venture capital in September 2009, three months after the U.S. Department of Energy granted Tesla a \$465 million loan guarantee to build factories, and Fremont, California-based solar cylinder developer Solyndra raised \$198 million in venture capital after the DOE granted \$535 million in a loan guarantees for its new manufacturing facility. According to the CleanTech Group, the leading cleantech sectors last quarter were 1) solar, 2) transportation and 3) green building. Solar brought in \$451 million, transportation \$383 million, and green building \$310 million.¹⁷

⁹ http://news.cnet.com/Solar-cell-breaks-efficiency-record/2100-11395_3-6141527.html, downloaded January 20, 2010

¹⁰ <http://seekingalpha.com/article/179667-what-is-solyndras-cost-per-watt>, downloaded January 20, 2010

¹¹ Nazre (2009)

¹² Conventional power, at 100% capacity and fuel costs of 1.3c/kWh, costs 3c/kWh, assuming 20% depreciation; Solar at \$1.5/W and 12h/day use costs 3.5c/kWh, assuming 10% depreciation

¹³ http://en.wikipedia.org/wiki/Economics_of_new_nuclear_power_plants, downloaded January 20, 2010

¹⁴ http://www.mercurynews.com/top-stories/ci_13834054, downloaded November 22, 2009 ¹⁵ Software was third with \$622 m.

¹⁶ Cleantech Group's numbers do not exactly match with MoneyTree's numbers.

¹⁷ <http://www.matternetwork.com/2009/10/clean-tech-1-worldwide-venture.cfm> downloaded November 22, 2009

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Conclusion

This report discussed the current state of national and international regulations that affect the development of cleantech, the business opportunities, the business models and their opportunities and constraints.

The key findings of our report relevant for business development are: (1) The lack of clarity in government policy will be a short-term uncertainty and will reduce big companies' investment in cleantech services across the board, i.e, including investments in preparedness, mitigation and response to GHG emissions. (2) Developing and developed country economics are significantly different in approaches to cleantech because of differing installed bases and differing operational costs. Developing country government policy will focus less on measurement and monitoring, and more on cleantech energy generation. (3) Several areas of opportunity in new sectors were identified. The related skills requirement will likely require a labor pool that is beyond the capacity available in India and will require tapping pools of engineers in developed countries. (4) In cleantech software services, the current opportunities for service providers are primarily in measurement and monitoring of GHG at the level of the end-user. This will expand in line with changes in developed country government policy. We categorized different types of service opportunities and matched it with end-user types, and provided detailed examples and details of the Wipro engagement model (4) The primary users of cleantech services will continue to be large companies in developed countries that are signatories to the Kyoto Protocol. (5) Investment in cleantech innovation, which took a leap over the past decade, is likely to remain significantly high, driven by the prospect of unsubsidized viability. Down the road, cleantech's ability to contribute to national energy security will also become a driver.

APPENDIX 1

GOVERNMENT POLICIES REGARDING EMISSIONS

| Country | Regulation | Description | Affected Industries | Effective From |
|-----------|--|--|---|--|
| Australia | Carbon Pollution Reduction Scheme | <p>The Government remains committed to meeting its long- term target of a 60 per cent reduction in greenhouse gas emissions from 2000 levels by 2050.</p> <p>It also commits to a medium - term national target to reduce Australia's greenhouse gas emissions by between 5 per cent and 15 per cent below 2000 levels by the end of 2020.</p> | <ol style="list-style-type: none"> 1. Gas Fired & Diesel Fired Electricity generators 2. Pumped Storage Hydro Electric Generators Coal Mines 3. Gas Transmission Pipelines 4. Landfill Waste & Waste water Facilities 5. Landfill Gas Electricity Generators 6. Aviation & Tourism 7. Community Service Providers 8. Government Administration 9. Public Transport | <ul style="list-style-type: none"> ▶ July 01st 2010- Credits to Reforestation /Carbon off Set Initiatives ▶ July 01st 2011- Cap & Trade :\$ 10 Penalty for excessive one Metric Tonne of CO2 ▶ July 01st 2012 Cap & Trade : Trading of Excessive emissions. |
| | National Greenhouse and Energy Reporting | <p>2008-2009</p> <ul style="list-style-type: none"> • Facility Threshold(Scope1 + Scope2) -25 kt Co2-e or using /Producing 100TJ or energy • Organization Threshold(Scope1 +Scope2) 125 kt Co2-e- or using /Producing 500TJ or energy <p>2009-2010</p> <ul style="list-style-type: none"> • Facility Threshold(Scope1 + Scope2) - 25 kt Co2 - e or using /Producing 100TJ or energy • Organization Threshold(Scope1 +Scope2) - 87.5 kt Co2 - e or using /Producing 350TJ or energy <p>2010-2011</p> <ul style="list-style-type: none"> • Facility Threshold(Scope1 + Scope2) - 25 kt Co2 -e or using /Producing 100TJ or energy • Organization Threshold(Scope1+Scope2)- 50kt Co2-e or using/ Producing 200 TJ or energy | <ol style="list-style-type: none"> 1. Energy 2. Utilities 3. Transportation 4. Retail 5. Manufacturing | Jul - 08 |

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| Country | Regulation | Description | Affected Industries | Effective From |
|---------|-------------------------------------|---|---|----------------|
| UK | EU ETS | Mandatory for all 27 EU members - 21% reduction in below 2005 emission levels by 2020 | 1. Oil and gas, 2. Power generation, 3. Pulp and paper, 4. Cement and glass, 5. Steel | Jan 01st 2005 |
| USA | Regional Green House Gas Initiative | North Eastern & Mid Atlantic US States - 10% reduction in below 2009 emission levels by 2018 | Power Generation | Jan 01st 2009 |
| USA | US Federal Climate Change Bill | Cut 17% below 2005 levels by 2020 | 1. Electricity, 2. Travel & 3. Transportation | Jan 01st 2012 |
| USA | Western Climate Initiative | States & Provinces along western rim of North America. 15% cut below 2005 levels by 2020. A proposal by WCI calls for regulating west coast emissions in some sectors and not others | 1. Electricity, 2. Fossil Fuel, 3. Industrial Combustion 4. Industrial Smokestack | Jan 01st 2012 |
| NZ | New Zealand Scheme | Based on units which must be obtained to cover emissions, these units can be bought & sold | 1. Oil Companies 2. Forester Plants 3. industrial firms | |
| Japan | Japanese Voluntary Carbon Market | Japan launched a voluntary carbon market based on companies' pledged emissions cuts and hopes thousands of firms will sign up to what could become a forerunner of a mandatory cap-and-trade scheme. Japan is obliged to cut greenhouse gas emissions by 6 percent in 2008-2012 from the 1990 levels under the U.N.'s Kyoto Protocol climate pact. But as of 2006, Japan's emissions were 6 percent above 1990 levels | 1. Electric Power, 2. Steel Companies | Oct 21st 2008 |

APPENDIX 2

SECTORAL CLEANTECH OPPORTUNITIES

| Sector | Activity |
|------------------|---|
| Transportation | <ul style="list-style-type: none">• Engineering design for aerodynamics• Driver information systems• Energy management |
| Water | <ul style="list-style-type: none">• Measurement of water footprints ?• Ground & Storm water monitoring ?• Water management system |
| Construction | <ul style="list-style-type: none">• Campus carbon measurement & certification• Efficiency design |
| Recycling | <ul style="list-style-type: none">• Recycling management system |
| Energy Producers | <ul style="list-style-type: none">• Carbon measurement & certification ?• Efficiency design |
| Technology | <ul style="list-style-type: none">• Data center cooling & power systems management• Recycling management |

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APPENDIX 3 CARBON MANAGEMENT SOLUTION

CARBON MANAGEMENT SOLUTION

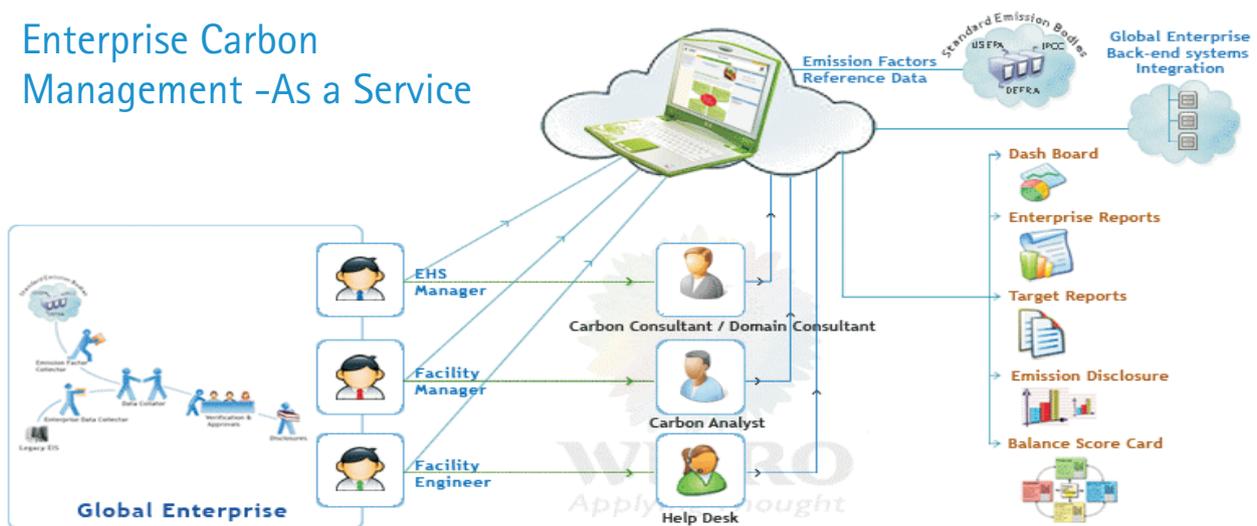
Wipro's Carbon Management Solution serves the following business goals of an environment and socially responsible enterprise:

- Managing Green House Gas (GHG) risks and identifying reduction opportunities
- Public reporting and participation in voluntary GHG programs
- Participating in mandatory reporting programs

Managing Green House Gas (GHG) risks and identifying reduction opportunities
Public reporting and participation in voluntary GHG programs
Participating in mandatory reporting programs



Enterprise Carbon Management -As a Service



Support Services

User Training: In-Person Training, Virtual Trainings & User Materials

Customer Support: Help Desk, Email & Technical Support

Value Adds Services: Utility Bills Management, Data Migration, Life Cycle Assessments, Data Audit, Business Process Carbon Foot Printing, GHG Inventorization

Salient Features

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> • Compliant to GHG Protocol • Customizable Role Based Access and Security control • Alers/ Notifications • Customizable work flows and Approval processes | <ul style="list-style-type: none"> • On-Demand(Saas) model • Integration with back end system • Data verification & Audit • Data verification & Audit | <ul style="list-style-type: none"> • Subscription based pricing • Help deck Support(24*7) • Bulk Upload / Data Migration • Regulatory Compliance |
|--|---|--|

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