METROPOLIS 2011

Sustainable cities and urban services

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Veolia Environnement
Global benchmark in environmental solutions
Veolia Environnement: Global benchmark in environmental solutions

**More than 150 years’ experience**

<table>
<thead>
<tr>
<th>Employees in</th>
<th>Consolidated revenue in 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>317,034</td>
<td>€34,787 M</td>
</tr>
<tr>
<td>77 countries</td>
<td></td>
</tr>
</tbody>
</table>

Solutions for the management of the essential services of water, waste management, transportation and energy.
Veolia Environnement:
Revenue breakdown by Division in 2010

- Transportation: 17%
- Energy services: 21%
- Waste management: 27%
- Water: 35%
Veolia Environnement:
Revenue breakdown by Geographic Area in 2010

- Rest of the world: 6%
- Asia-Pacific: 8%
- United States: 9%
- Europe (excl. France): 37%
- France: 40%
Urbanization, metropolitan development and sustainability
Urban growth for essentially developing countries

Cities increasingly more powerful ...

<table>
<thead>
<tr>
<th>City</th>
<th>GDP (billion dollars)</th>
</tr>
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<tbody>
<tr>
<td>Tokyo</td>
<td>1440</td>
</tr>
<tr>
<td>New York</td>
<td>1050</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>620</td>
</tr>
<tr>
<td>Paris</td>
<td>510</td>
</tr>
<tr>
<td>Chicago</td>
<td>400</td>
</tr>
<tr>
<td>Osaka, San Francisco</td>
<td>380</td>
</tr>
<tr>
<td>Washington</td>
<td>310</td>
</tr>
<tr>
<td>Boston</td>
<td>260</td>
</tr>
<tr>
<td>Hong-Kong</td>
<td>180</td>
</tr>
<tr>
<td>Séoul, Toronto, Mexico</td>
<td>150</td>
</tr>
<tr>
<td>Sao Paulo</td>
<td>110</td>
</tr>
<tr>
<td>Singapour</td>
<td>100</td>
</tr>
<tr>
<td>Bangkok, Istanbul</td>
<td>60</td>
</tr>
<tr>
<td>Shanghai</td>
<td>50</td>
</tr>
<tr>
<td>Le Caire</td>
<td>33</td>
</tr>
<tr>
<td>Manille</td>
<td>25</td>
</tr>
<tr>
<td>Jakarta</td>
<td>16</td>
</tr>
<tr>
<td>France</td>
<td>1429</td>
</tr>
<tr>
<td>Chine</td>
<td>1064</td>
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<tr>
<td>Brésil</td>
<td>607</td>
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<tr>
<td>Inde</td>
<td>471</td>
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<tr>
<td>Australie</td>
<td>394</td>
</tr>
<tr>
<td>Pays-Bas</td>
<td>365</td>
</tr>
<tr>
<td>Afrique sub-saharienne</td>
<td>313</td>
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<tr>
<td>Russie</td>
<td>250</td>
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<tr>
<td>Turquie</td>
<td>200</td>
</tr>
<tr>
<td>Indonésie</td>
<td>150</td>
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<tr>
<td>Grèce</td>
<td>112</td>
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<tr>
<td>Égypte</td>
<td>100</td>
</tr>
<tr>
<td>Pakistan</td>
<td>65</td>
</tr>
<tr>
<td>Pérou</td>
<td>54</td>
</tr>
<tr>
<td>Maroc</td>
<td>36</td>
</tr>
<tr>
<td>Vietnam</td>
<td>26</td>
</tr>
<tr>
<td>Tunisie</td>
<td>20</td>
</tr>
</tbody>
</table>

*Year 2000 world large cities GDP (in billion dollars)*
... but environmentally vulnerable ...

NON RENEWABLE RESOURCES

GREEN AREAS

MOBILITY
PREDOMINANTLY
WITH INDIVIDUAL
VEHICLES

BUILDINGS

INDUSTRY

Untreated Waste / rain water

Unsorted unrecycled solid waste

Unrecovered waste energy

Emissions of CO2

Unsorted unrecycled solid waste

Unrecovered waste energy

Emissions of CO2
... and socially fragile

Population urbaine
Millions d’habitants

500

200

100

○ Population urbaine totale
● Population urbaine vivant dans des bidonvilles

Veolia Environnement sustainable cities’ partner
The city: a solution for a sustainable world

**RENEWABLE RESOURCES**

- Energy production of buildings (sun, wind, waste water)
- Waste heat recovery

**BUILDINGS**

- Treatment and recovery of stormwater
- Recycling of materials (carboard, paper, deconstruction materials...)

**GREEN AREAS**

- Reuse of wastewater
- Recycling of materials (carboard, paper, deconstruction materials...)

**INDUSTRY**

- Recycling of materials (carboard, paper, deconstruction materials...)
- Ultimate solid waste storage

**MULTIMODAL MOBILITY**

- Clean individual VEHICLES

**AGRICULTURE**

- Production of compost from organic waste
- Energy feed and cultures

**WASTEWATER**

- Wastewater treatment plant
- Production of energy recovery from domestic waste
- Energy recovery from domestic waste

**WASTE**

- Waste treatment and recovery platform
- Reuse of wastewater
- Recycling of materials (carboard, paper, deconstruction materials...)

**ULTIMATE**

- Solid waste storage
- Application of sludge

- WWTP sludge recovery by land application of sludge
Local governance and public-private partnership

New Social regulation forms
- Flexibility of organization
- Transversality
- Participation
- Transformation Local democracy

Plurality of players
- Civil society
- Universities
- Enterprises
- Farmers
- State
- Local authorities

Varied roles
- Financing
- Legislation
- Decision
- Regulation
- Information
- Influence

Toward a negotiated territory
- Toward a negotiated territory

Universities
Veolia’s innovative solutions
Veolia’s environmental footprint

Resources footprint

Carbon footprint

Environmental footprint

Biodiversity footprint

Water footprint
Manage the environmental footprint: combine complementary know-how

Measure

Data

Reduce

Solutions

Impacts

Management of the Environmental footprint

Evaluate

Software

Models

Calculate

Understand
Competiveness and Attractiveness: two issues closely linked to the environmental footprint

**COMPETITIVENESS**

- Attractivity
  - Material values
  - Functional
  - Infra-structures
  - Public services
  - Economic potential
  - Quality of life
  - Satisfaction
  - Attraction
  - Notoriety

**ATTRACTIVNESS**

Manage the environmental footprint

- Reduction of pollutions
- Reduction of the resources dependency

Appeal

- Image values
- Identities

Reduction of the resources footprint

Reduction of pollution
Veolia’s social innovations

Social innovation toward consumers
- Developing the access to basic services for people in developing countries
- Maintaining the access for unstable clients in all countries, including developed countries

Social innovation toward stakeholders
- Paying attention to people working in the informal economy with impacts on our activities
- Capacity building of stakeholders (associations, companies, local services...)

Social innovation toward employees

Social innovation toward distressed people
- Human resources actions toward insertion, qualification and security policy

Corporate social responsibility

The Foundation
4

A few case studies
1 Increase access to safe water for underprivileged populations:

- **Do more** with the same capacity by optimizing infrastructure operation: Karnataka and Nagpur
- **Implement** appropriate, socially acceptable pricing policies
  - In Morocco: subsidized tariff for the lowest rate (6 m³/month)
- **Increase** number of subsidized individual connections: Morocco and Niger
- **Invent** new, collective and secure ways of accessing water
  - In Morocco: installation of “Saqayti” standpipes operated using a pre-paid smartcard
- **Deploy** tailored local customer services: “mobile agencies”
- **Explain** how water should be used to optimize the benefits of access to water service
- **Find** new economic and financial models
  - In Bangladesh, Grameen-Veolia Water Ltd
  - In Morocco (World Bank’s OBA Fund)
- **Assess** impact of programs implemented by Veolia on people’s quality of life and human development:
  - impact of connection program in Tangier assessed by the MIT’s JPAL
Include social considerations in water pricing: SEDIF's water service

**SITUATION:** 12% of people covered by SEDIF (the Greater Paris water authority) live below the poverty line.

**OBJECTIVE:** To implement a subsidized price for water depending on income:
- The definition of a specific subsidized tariff for users receiving income support is considered unlawful in industrial and commercial public services, unless specific legislation provides for such a tariff.
- Distribute targeted support for the most vulnerable, without modifying the water bill, but ensuring access for all. Beneficiaries are informed of the real cost of water and wastewater services on their water bills.

**IMPLEMENTATION:** SEDIF suggested allocating 1% of revenue from water sales (amounting to €2.5 million) to:
- Establish a contribution to a Solidarity Housing Fund (FSL, from the French, Fonds Solidarité Logement)
- Provide Water Solidarity vouchers
- Cover the costs associated with awareness-raising actions and support to underprivileged users
- Cover the operating costs of the unit responsible for managing "Eau Solidaire" subsidies
Optimize operation to improve service and supply more people: the case of Nagpur, India

**CONTEXT:**
A performance guarantee contract aiming to demonstrate Veolia Water's expertise in a number of pilot areas

**OBJECTIVE:**
To provide a continuous water supply 24/7 to 165,000 people who previously were only able to access water at home for several hours a week

**IMPLEMENTATION:**
Improve water network efficiency: leak reduction
Install meters and change from a fixed charge based on the surface area of the home (tax) to a charge based on water consumption (billing).
Introduction of a common, progressive pricing grid based on consumption, including a subsidized block.
Awareness-raising among service users of the need to consume with moderation

**INTEREST:**
Continuous water supply to all people in pilot areas without having to produce additional volumes of water
Water savings that enabled slum areas to be connected to the public water service.
User enthusiasm; consumers are happy to pay for continuous water supply, provided the service is efficient and the price reasonable
Contribute to integration through employment: Veolia Environmental Services’ “Reflet” initiative in central-western France

**CONTEXT:**
Tender

**OBJECTIVE:**
To run a social integration and back-to-work program in three districts outside Nantes, western France to create a general mobilization around waste management and urban cleaning services (12,000 people in districts covered by a local urban management program)

**IMPLEMENTATION:**
Veolia Environmental Services joined forces with local social integration organizations: Océan, Ecorev, Homme Debout and the Nantes Metropolitan area's job center.

The non-profit organizations pick up objects, waste materials and bulky household items from waste drop-off centers. These objects are then repaired and restored in workshops and projects organized as a back-to-work initiative.

**INTEREST:**
The partnership with local social integration organizations has allowed Veolia Environmental Services to stand out in tender processes
Adapt our services to specific populations: Veolia Transdev's Handibus service in Dunkirk, France

**CONTEXT:**
Tender

**OBJECTIVE:**
To develop a range of "Illico" transport-on-demand services, including the "Handibus" service for disabled people

**IMPLEMENTATION:**
The Illico Handibus is designed for disabled people wanting to travel to work, to reach their leisure destinations, to go shopping, to attend medical appointments, etc.

The service is available by reservation (*from Monday to Saturday*). The Illico Handibus runs from Monday to Sunday from 7am to 9pm.

Once an application has been received and assessed, the beneficiary receives a Handibus pass (*membership €2*). A journey is priced at €1.30 and accompanying travelers also pay €1.30.

**INTEREST:**
Make mobility services accessible to all
Adapt services to the local situation: Dalkia’s service in Varna, Bulgaria

**CONTEXT:**
Tender

**OBJECTIVE:**
Make the cost of heating accessible to all

**IMPLEMENTATION:**
Efforts to improve energy production (cogeneration) and infrastructure performance have generated energy savings that are reflected in the cost of heating.

Furthermore, Dalkia is offering customers a building retrofit service to improve insulation, thereby optimizing energy efficiency. The company is aided by European subsidies that can finance up to 60% of the renovation work.

Lastly, Dalkia supports the creation of co-ownership associations for buildings in order to have a clearly identified contact.

**INTEREST:**
The Dalkia business model in Eastern European countries is based on this optimization of energy efficiency, which makes it possible to adopt pricing policies that are adapted to the consumer.