

苏伊士环能集团城市可持续发展方案

GDF SUEZ approach towards sustainable cities

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苏伊士环能集团是谁？ Who is GDF SUEZ ?

- 财富排名38， 世界第一大公共事业公司， 900 亿欧元营业额
- Fortune 38 company / n.1 utility company in the world / 90 bEuros turnover
- 我们的业务： 电力、 燃气、 水、 垃圾以及能源服务
- Our activities : power, gas, water, waste and energy services.
- 在全世界
- In the world
 - 第一大独立发电企业
 - N.1 independent power producer
 - 第二大环境业务公司
 - N.2 in environment (water and waste activities)
- 在欧洲
- In Europe
 - 第一大燃气业务公司（液化天然气， 运输， 储气库和输配）
 - N.1 gas player (LNG, transport, storage and distribution)
 - 第一大能源服务公司（供热、 供冷、 便捷管理）
 - N.1 in energy services (heating and cooling, facilities management..)

苏伊士环能集团子公司简介

One word about GDF SUEZ Companies

Gas
天然气

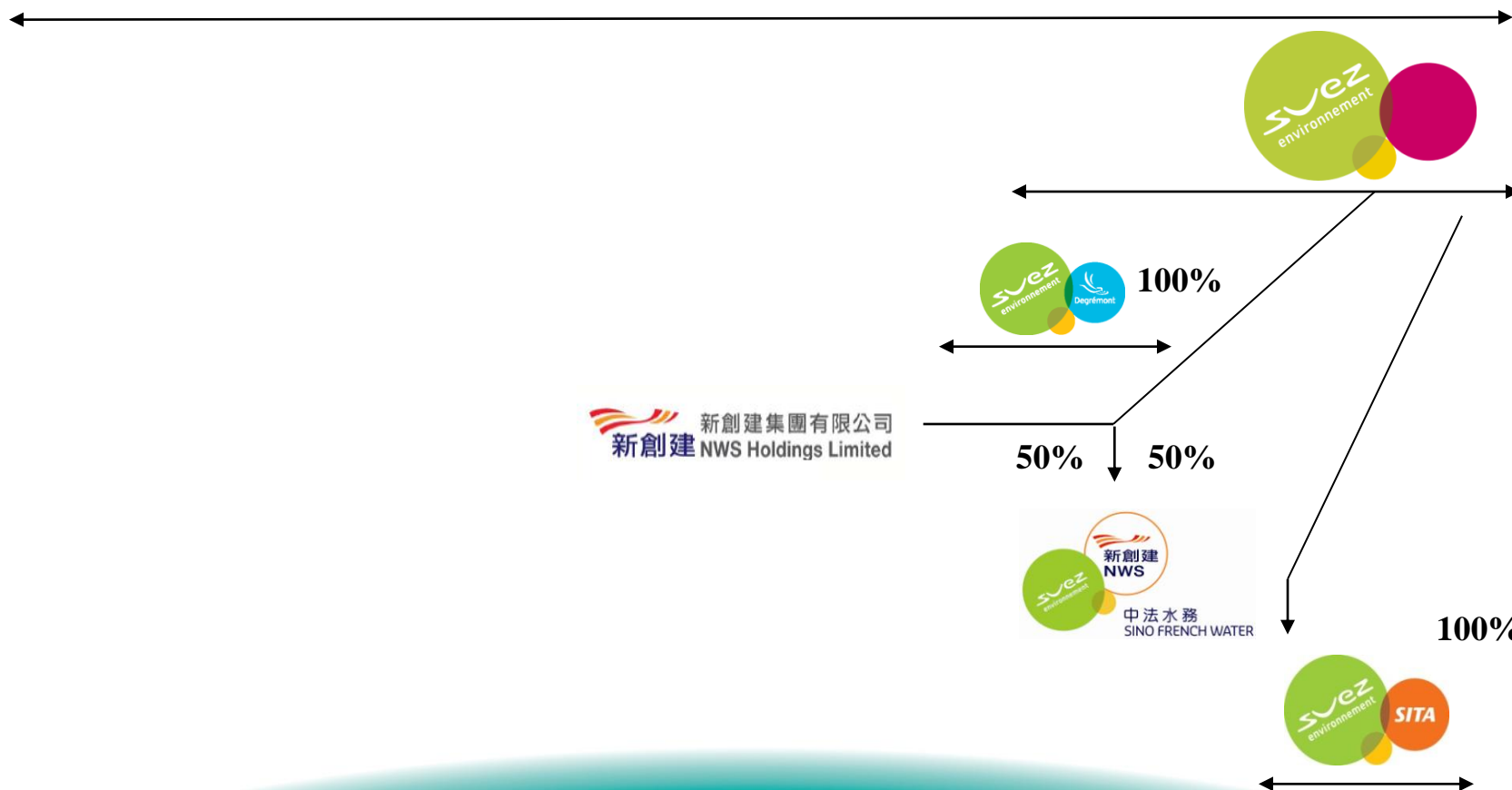
Power
电能

Energy Services
能源服务

Water
水

Waste
废弃物

GDF SUEZ



主要挑战: 城市绿色发展 Main Challenge : Manage Cities Green Expansion

2010

三十亿人口居住在城市

3 billion people live in a city



2050

六十亿人口居住在城市

6 billion people live in a city



我们的途径/主要原则

Our Approach / Main Principles

1. 能源、水务、垃圾利用 一体化 / Integrate energy, water and waste cycles
2. 资源的循环利用 / Recycle resources
3. 全面一体化的基础设计构想 / Think global and mutualize infrastructures
4. 前瞻性的总体规划 / Act early on impacts - at master plan level
5. 创造性的节能减排方案 / Be creative to save energy and emissions
6. 发展智能计量系统 / Develop smart metering
7. 修复并重建生态环境 / Repair & restore environment
8. 环境法规和有效的执行 / Have adequate environmental law & enforcement
9. 排放检测和城市总体平衡 / Monitor emissions & global city balance

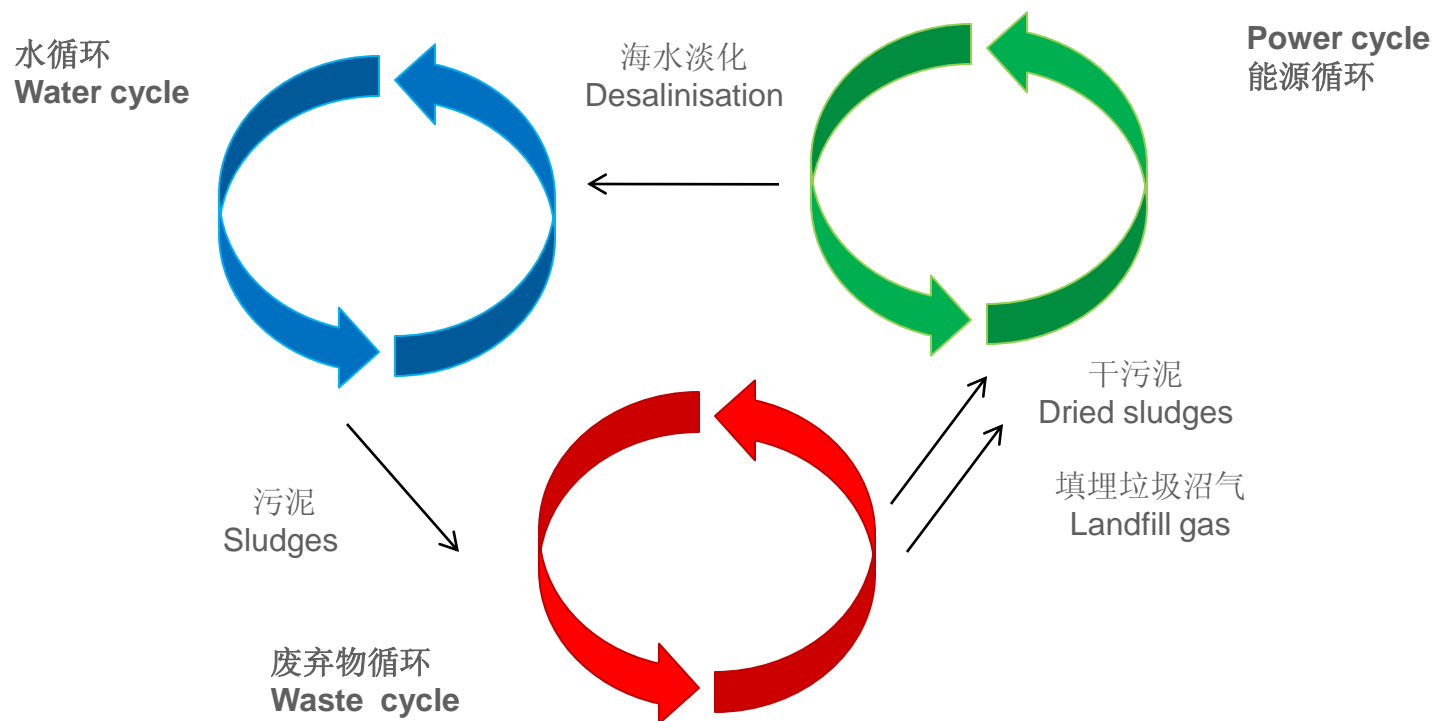
能源、水务、垃圾利用 一体化

1. Integrate energy, water and waste cycles

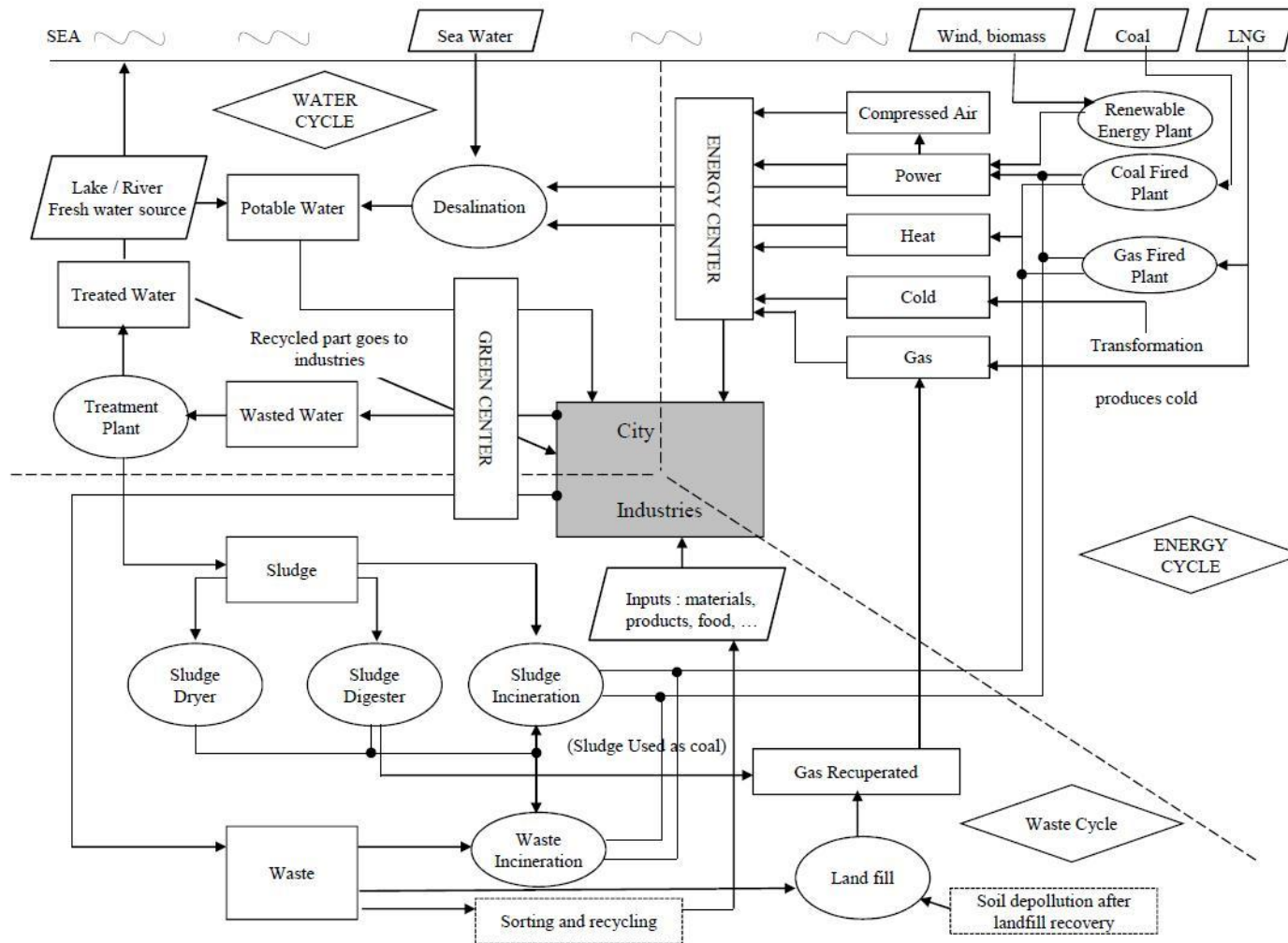
多种循环协同/ Combine The Cycles

各种循环之间是联系的：碳影响最小化

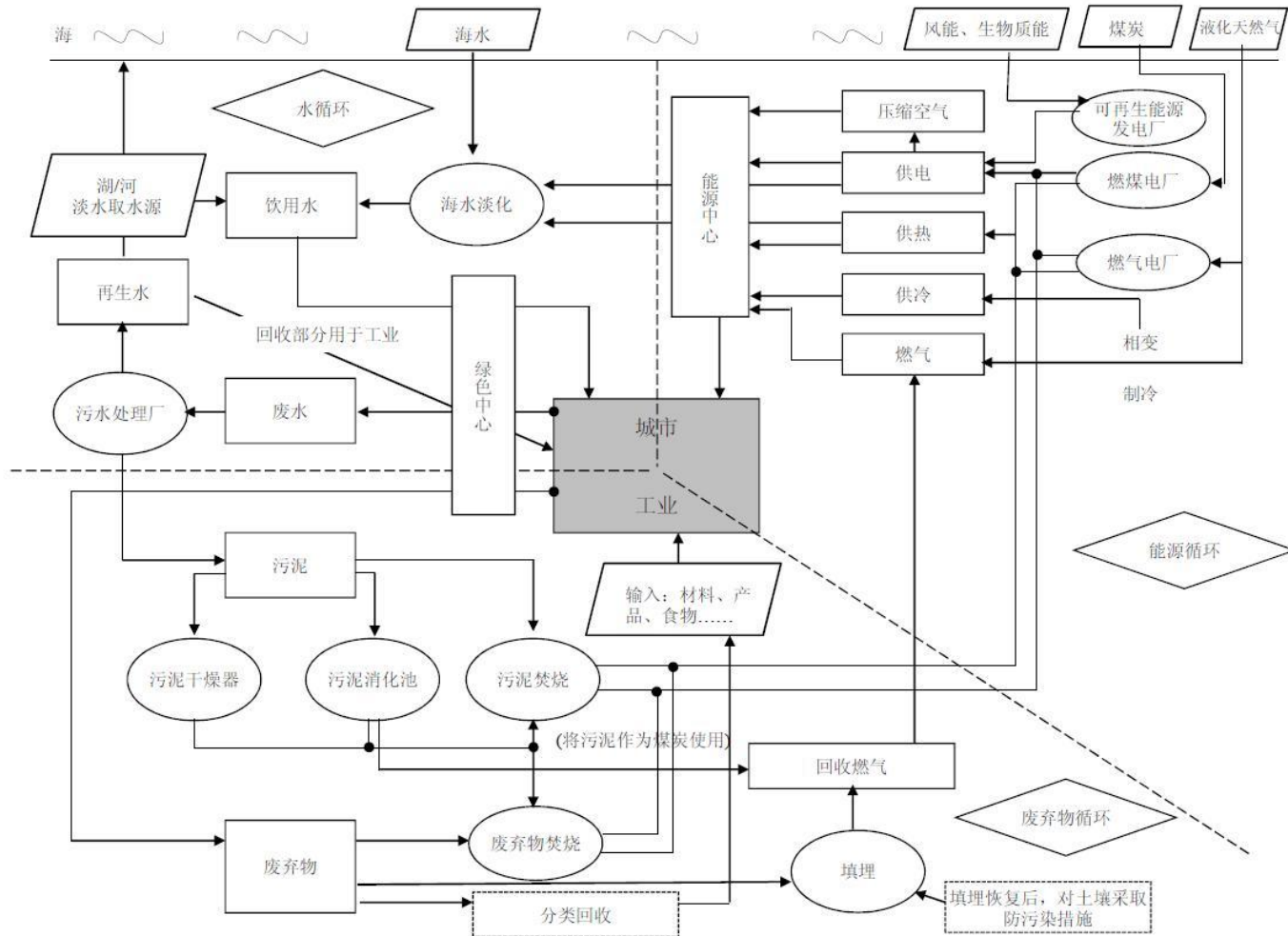
Cycles are linked – combining them minimize carbon impact



整合多种循环-详述/ Combine The Cycles - Details



整合多种循环-详述/ Combine The Cycles - Details



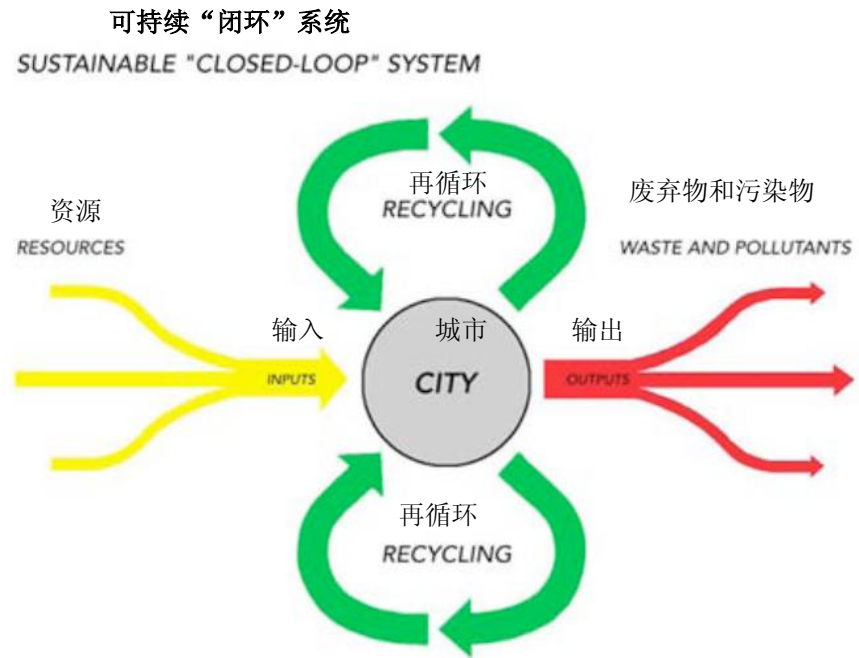
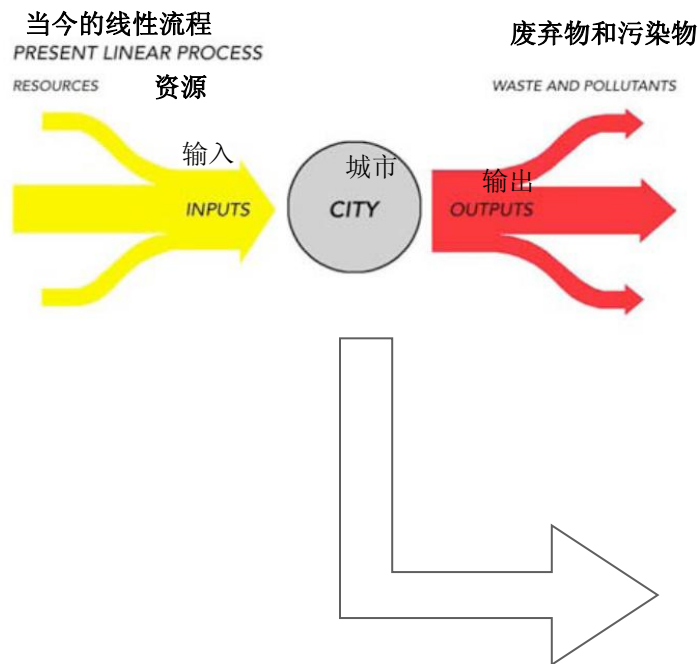
2. 资源的循环利用

2. Recycle resources

再循环和再利用/ Recycle And Reuse

思路是在城市中创造和谐

The idea is to create harmony in the city



再循环和再利用-水 Recycle And Reuse - Water

市政污水回用,美国洛杉矶

工业污水回用 – 武汉

Reuse of wasted waters, Los Angeles-USA / Reuse of industrial waters, Wuhan



再循环和再利用- 污泥 Recycle And Reuse – Sludge



重庆污泥干化项目
Chongqing dryer



污泥干燥机
Sludge Dryer



产品回用
Products Reuse



加拿大污泥焚烧
Thermylis sludge
incinerator Canada



焚烧炉
Incinerator



污泥可作为燃料燃烧
Use Sludge As “Coal »

再循环和再利用- 天然气 Recycle And Reuse – Gas

填埋气利用项目-新界东北填埋场
Covering Landfill In Hong Kong To Reuse Gas



3. 全面一体化的基础设施构想

3. Think global and mutualize infrastructures

一体化解决方案-工业园区

Mutualize solutions – Industrial site

上海化工园区：

通过污水处理系统集中处理所有污水以及通过大型工业焚烧装置处理所有废弃物

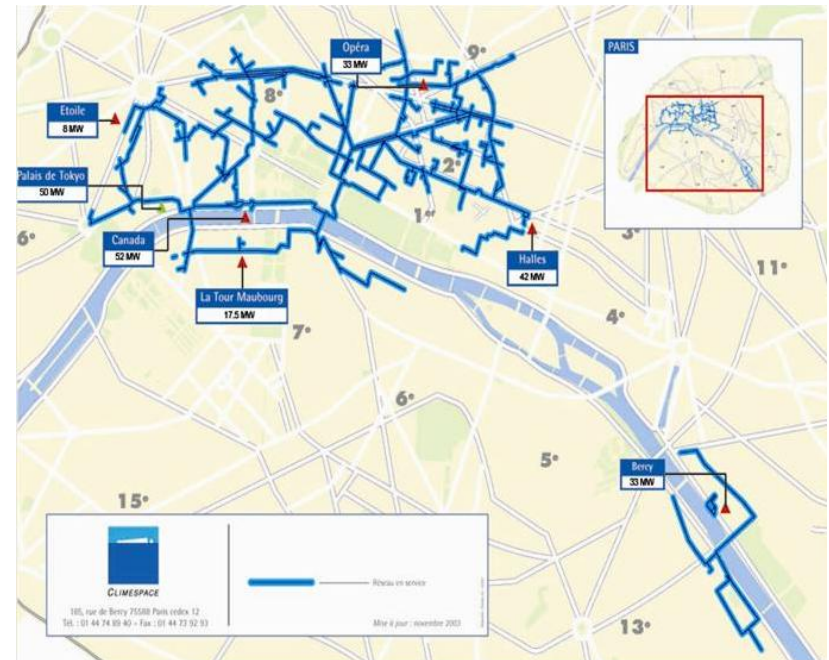
Shanghai Chemical Park : treat all liquid waste in a common water treatment plan and all solid waste in a common incinerator



一体化解决方案-城市制冷系统 Mutualize solutions – Cooling a city

利用巴黎的河水为博物馆、酒店、办公区和居民区供冷

Using the water of Paris River to Cool Museums, Hotels, Offices and Houses



4. 前瞻性的总体规划

4. Act early on impacts - at master plan level

限制交通的影响 Limit Impact Of Traffic

比利时安特卫普 城市交通的改善 Working with Antwerp City On Traffic In The City



比利时安特卫普 Antwerp, Belgium

- Master plan to improve mobility in and around the city of Antwerp
- 城市交通的总体规划改善室内和周边的交通
- 465,000 inhabitants
- 465 000 居民
- Area: 20,500 ha
- 面积: 20,500 公顷

The sooner you act and the more global you can be, the best it is for low carbon and circular economy approach.

全面规划和更早的行动，将在低碳和循环经济方面收益更多。

5. 赋予创造性的节能减排方案
5. Be creative to save energy and emissions

创新 - 全部使用再生能源

Be Creative – A Plant Fully With Renewable Energies

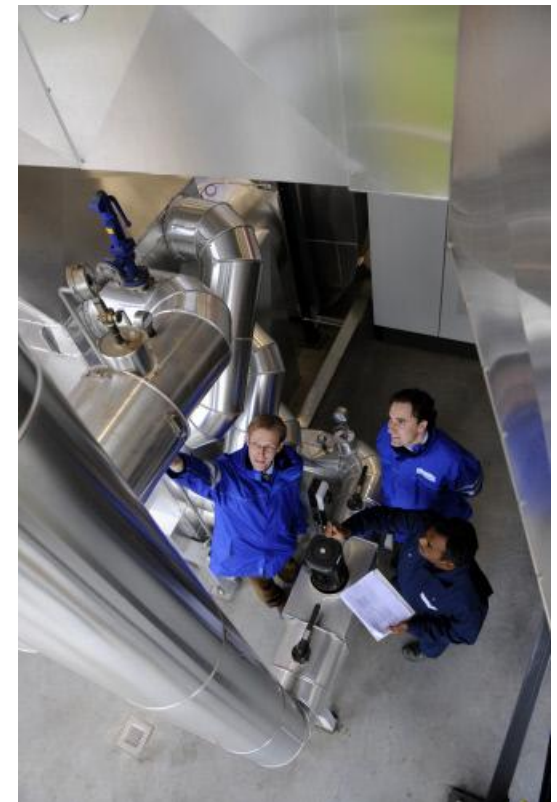
比利时沃尔沃: CO₂零排放 工厂
VOLVO BELGIUM: a CO₂ Free Plant



VOLVO

综合利用风能、生物能、
水电和太阳能

A combination of wind
power, biomass power ,
hydroelectricity, and
solar power.

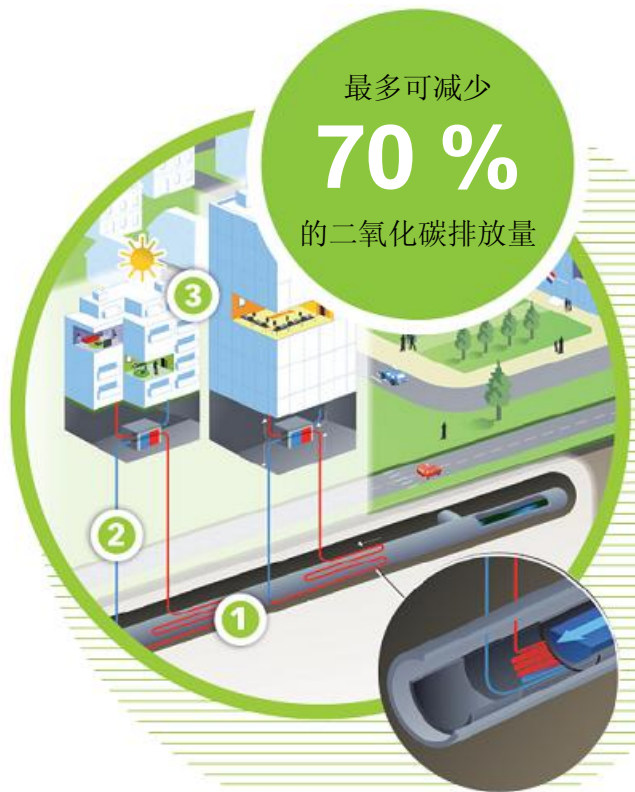


排水管道的热量回收

Degres Bleu – Getting Back Warmth For Heating

回收排水管道中的废热

“Degres Bleu” takes back the wasted heat from warm waste water pipes



苏伊士环能研发从废水中回收热能的技术可以显著的节约能源消耗，并且大大地减少碳排放。（如游泳池采取此项技术可节能24%，减排70%）

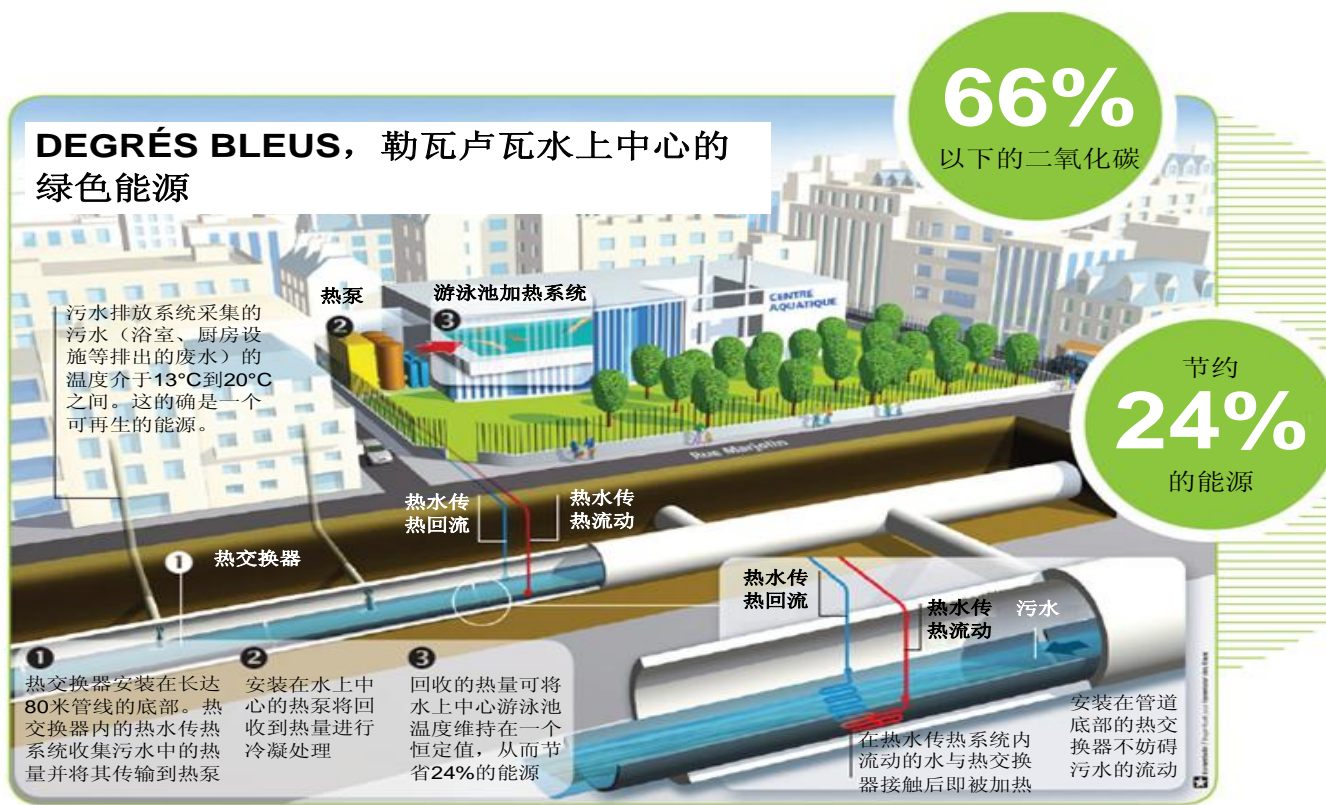
SUEZ Environment has developed this new concept to capture heat from hot water pipes discharge / sewage pipes. It allows great savings on the energy bill to produce heat and emissions reduction (24 % on energy bill and 66% on emission for a swimming pool for instance)

项目详述

Degres Bleus – Details

勒瓦卢瓦水上中心

Levallois Perret Swimming Pool

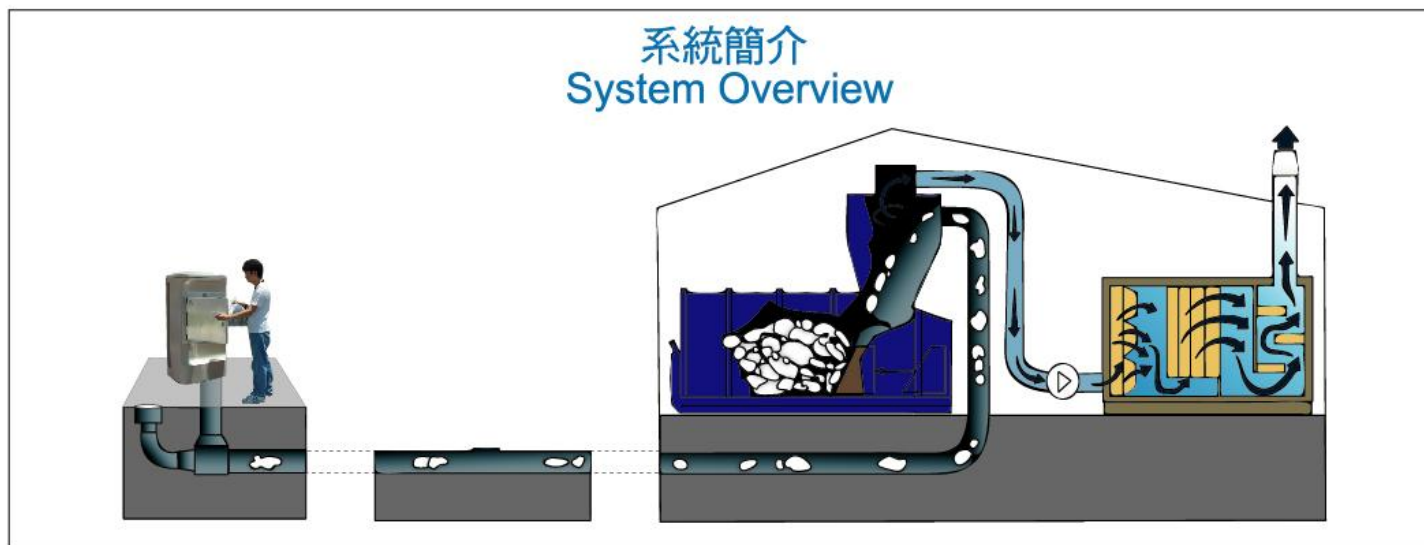


澳门- 管道垃圾收集

Macau – Garbage Collection With Pipes

建立了地下垃圾收集中心,避免垃圾车的收集和运输

Underground piping system to collect waste avoids truck circulation in the city



自澳大利亚珀斯-风能海水淡化 Australia - Perth – Wind Energy To Desalinate

中性二氧化碳排放的海水淡化厂 A CO₂ Neutral Desalinisation Plant



海水淡化厂能源消耗的优化

Perth desalination plant energy consumption has been optimized

- System to improve energy recovery by 15% to 20%
能量回收系统的应用，节约15%至20%的能耗
- 50 MW wind farm which makes the plant operation CO₂ neutral.
50兆瓦的风电场，减少电厂二氧化碳排放。

6. 发展智能计量系统

6. Develop smart metering

智能用水计量系统

Smart Metering Of Water Consumption

优化用水量，避免CO₂的排放

Water consumption is optimized and CO₂ emissions avoided



Our group placed 28000 wireless water meters in Paris (for instance), allowing 90% population coverage.

苏伊士集团在巴黎安装了28000个无线水表，覆盖了巴黎90%的供水人口。

This allows better water consumption monitoring, hence less energy consumption.

使用水量得到更好的监测，因此减少了能源的使用。

It also avoids cars running through the city to check meters.

同时也减少了为了查水表穿梭于城市间的汽车使用。

修复并重建生态环境

7. Repair & restore environment

垃圾填埋场的修复 Repair – Restore A Landfill Space

香港原原垃圾填埋地场变成公园和轨道交通用地
Hong Kong Former Landfill Restored For Green Park and Railway

在香港，我们共恢复了7个填埋场，120公顷的土地。
这些地方原来都是垃圾填埋场。
垃圾被送至覆盖式的填埋场。

In Hong Kong we restored over 120 hectares of land (7 locations) that were previously occupied by landfills.

Waste is now sent to covered landfills.



8. 环境法规 and 有效执行
8. Have adequate environmental law & enforcement

环境法则和执行手段

Environnemental Law And Enforcement

实现碳经济和循环经济的关键是法律，同时，法规要有可操作性并得到良好的执行。

- **A key element of low carbon economy and circular economy is the law, but also to make it evolve to favor best practices, and even more important, to enforce it.**

在上海，我们有一个非常先进的垃圾焚烧炉，排放率非常低，但是：

- **In Shanghai, we treat waste in a very modern incinerator which emission level is extremely low, but :**

我们希望能处理邻省的垃圾（仅30公里外），目前国内有危废还不能跨省运输

- **We suggest to be able to collect waste from neighboring Anhui province (30 km away) because hazardous waste can not cross provinces borders so far in China.**

在上海，我们权利协助推进关闭一些排放不达标的小的垃圾焚烧炉

- **We support the process of Shanghai local authorities pushing to close older incinerators without adequate emissions levels, which is not an easy process.**

9. 排放检测和城市总体平衡

9. Monitor emissions & global city balance

排放检测和城市的总体平衡

Monitor Emissions and Global City Balance

我们提倡当地业务单位向政府提供透明的环境数据。在上海我们的焚烧炉排放受环境部门在线监控。

- **We favor a complete transparent communication of environmental data to the local government coming from local actors and municipal infrastructures. In Shanghai our incinerator chimney emission data are monitored life by the environmental office.**

我集团已与一些城市在我们业务领域范围内的所应执行的标准进行了沟通。

- **We have already communicated with several cities government in China on the norms to apply related to the several activities we are involved in.**

采用国际标准确实是良好的方法。可以帮助全世界的业务单位推广成功的设备和方法。

- **Having norms at international level is definitely a good approach. It helps all actors in the world develop equipments and solutions that can be replicated elsewhere if proved successful.**

我们将坚持不懈的与相关单位共同努力推进整体方案，以便监控城市排放发展循环经济。

- **We will continue to work with related parties to develop a global approach to monitor emissions in cities and favor the evolution of circular economy.**