B2T Presentation and selection of projects

States

May, 2017

engie

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Key questions :

"When local authorities become smart"

- Smart city ? Smart in the city ?
- Business model ?
- What exists today ? vs "city of the future"



FOR ENGIE, TERRITORIES INCLUDE...





CITIES & REGIONS: AT THE HEART OF THE ENERGY TRANSITION IN A FAST CHANGING WORLD

IEA Scenario "Energy for all" 2030







Cities

Source: IEA, Energy for All, 2011; MIT 2015

A PRESENCE ON ALL "VERTICALS" ANSWERING TO TRANSVERSAL CUSTOMERS NEEDS



To improve Security and Resilience

To benefit from Fluid & Green mobility

To ensure an Enjoyable environment

To develop the **Local attractiveness**

To allow to **Reduce costs**



Remark : digital means tools for our core businesses, - and need SI capabilities or partners-, as well as new products and business models still complex to define (eg. Apps)

(1) Includes city management tools such as dashboards to enable city stakeholders to make informed decisions

ENGIE POSITIONING: FROM INFRASTRUCTURES TO DIGITAL SOLUTIONS (WITH RELATED TECHNOLOGIES)



The combination of (A) ENGIE's traditional businesses in infrastructures and services combined with (B) new solutions and (C) a strong knowledge of local authorities provides a unique competitive position

RIO AND NITEROI: A COMPLEMENTARITY BETWEEN SECURITY AND MOBILITY

- In Rio, ENGIE installed and is maintaining 680 CCTV

cameras, allowing the Local Authority to fluidise the road traffic and the City main ways. The contract includes the installation of CCTV cameras, their integration via a fibber network and the restitution of the video flow to the local police. ENGIE has been chosen due to its « end to end » capacity: the Group is responsible of the execution of the whole service.

- In Niteroi, (area of Rio), ENGIE won (Spring 2016) an Intelligent Transportation System: at the level of each crossroad is installed a smart traffic hard and software, allowing to regulate the traffic in real time.
- The complementarity between infrastructures and data is here obvious, between security and mobility services. That's the purpose of ENGIE Integrated offers.

Those two contracts are key references for the development of ENGIE transversal offers, worldwide





DISTRICT HEATING & COOLING: A QUICK AND EFFICIENT MEAN TO DECARBONISE CITIES

- Worldwide, ENGIE is operating more than 250 District Heating and Cooling networks, including the first French Heating Network (CPCU) and the first European Cooling Network (Climespace), both in Paris.
- Compared to a mix of classical solutions, a cooling network increases by 50% the energy efficiency of the whole system, while reducing by the same amount the CO₂ emissions. And during the hottest days, the cooling network allows to reduce by almost 4°F/2°C the temperature in the streets.
- Heating network are also a quick way to decarbonise cities the heating needs representing roughly 40% of the energy needs of households. As an example, the Heating network of the City of Paris, operated by ENGIE, is warming the equivalent of 500.000 housings.

To decarbonise the energy production of Heating & Cooling networks allows to quickly decarbonise the whole city. In 2017, those ENGIE activities are targeting more than 50% of energy mix (compared to 37% in 2012).





Cooling Network of the City of Paris (Climespace), operated by ENGIE

SIRADEL: A COMMUNICATION AND DECISION-MAKING TOOL

- In October 2016, ENGIE has acquired Siradel, a world leader of 3D city models and telecom networks simulation. With this acquisition, the Group is reinforcing its capabilities regarding:
 - Mapping, Siradel's capabilities allowing a geographical accuracy of less than 5 cm
 - **Visualisation** of the city's information, including real-time information (ex. video, smart meters...)
 - **Simulation of scenarios** (urban planning, mobility, PV potential, etc.)
 - Multi-support Communication, from tablet to augmented reality

Beyond simulation capabilities and data treatment, this acquisition allows ENGIE to interact in an easier way with all the city stakeholders: 3D platforms facilitate discussion and decision making, whatever the business.





POWERZEE : THE COLLABORATIVE ENERGY TRANSITION

- In partnership with the University of Singapore (NTU), ENGIE has developed PowerZee, an app that encourages users of a building or a site to endorse a sustainable approach of energy savings. The turnover attached to any campus makes this kind of project more complicated than for private housing
- In addition to « simple » actions of energy savings, the community approach is fostered - through actions committed individually or in a group, with a scoring system enabling users to challenge other members of the community. Practical advices are given to users depending on their energy consumption level

This approach allows the Group to strengthen its presence in the local ecosystem. We are now considering a development in Cooling networks and services, including 3D simulation in the city.



GARDEN YOUR COMMUNITY POWERZEE by Engie

Thanks for your attention

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