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Expanding and upgrading the district heating system in Nantes

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May 16th, 2017

Organised by



Nantes Metropole, a territory and a local authority



- A Climate and Energy policy which has progressively gathered momentum until the adoption of a Climate Action Plan in 2007
- An international commitment



600,000 inhabitants

- (8th largest conurbation in France)
- The City of Nantes and the 23 surrounding cities
- Local authority created in 2001



CLIMATE CHANCE

CLIMATE ACTORS WORLD SUMMIT
 NANTES-FRANCE SEPT 26-28 2016

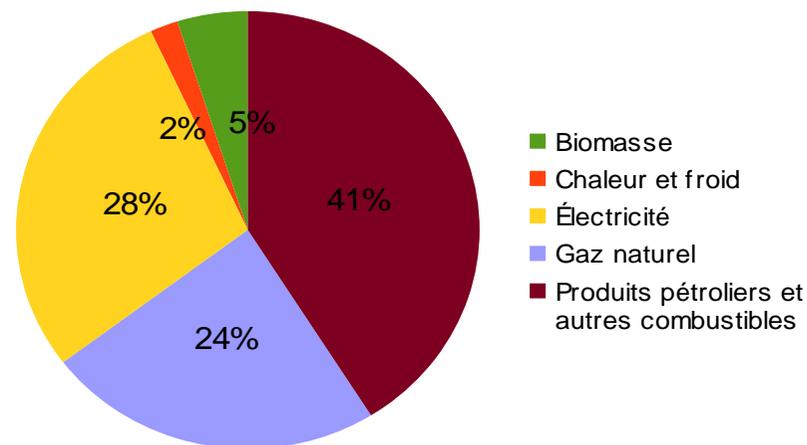
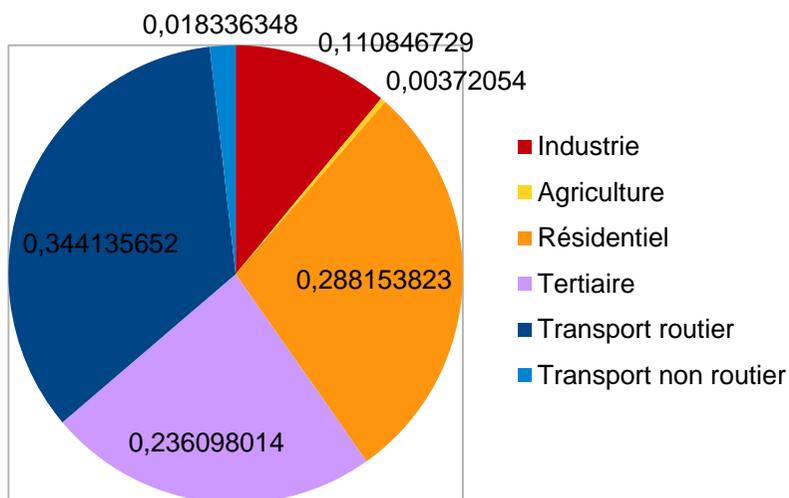
Energy on our territory in a few figures



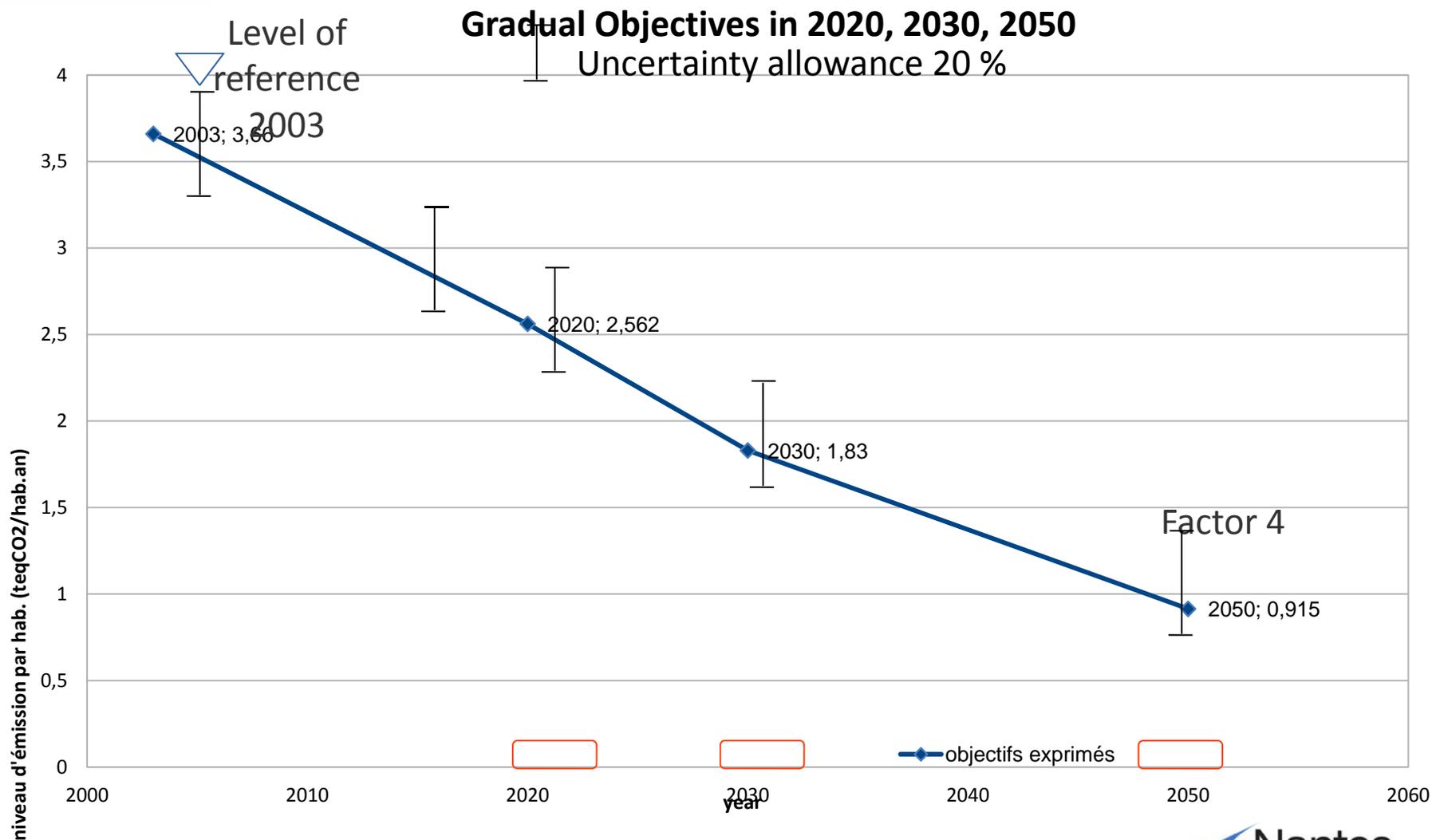
13 TWh/year of overall energy consumption

1,4 billions of € spent/year

0,65 TWh/year of local energy production (renewable or re-used)



Source Basemis 2012



Objectives of the territory on 3 sectors : residential (30%), tertiary (21%) & road transport (21%)

Extensive legal responsibilities for action



Nantes Métropole has for many years integrated a wide range of responsibilities to **implement concretely all aspects of energy transition** :

- Electricity Production and delivery, Gas delivery, Heat Production and delivery, Support to actions in favor of energy demand control
- Local transport, Waste, Housing, Urban development, Public areas..



ENERGY PLANNING

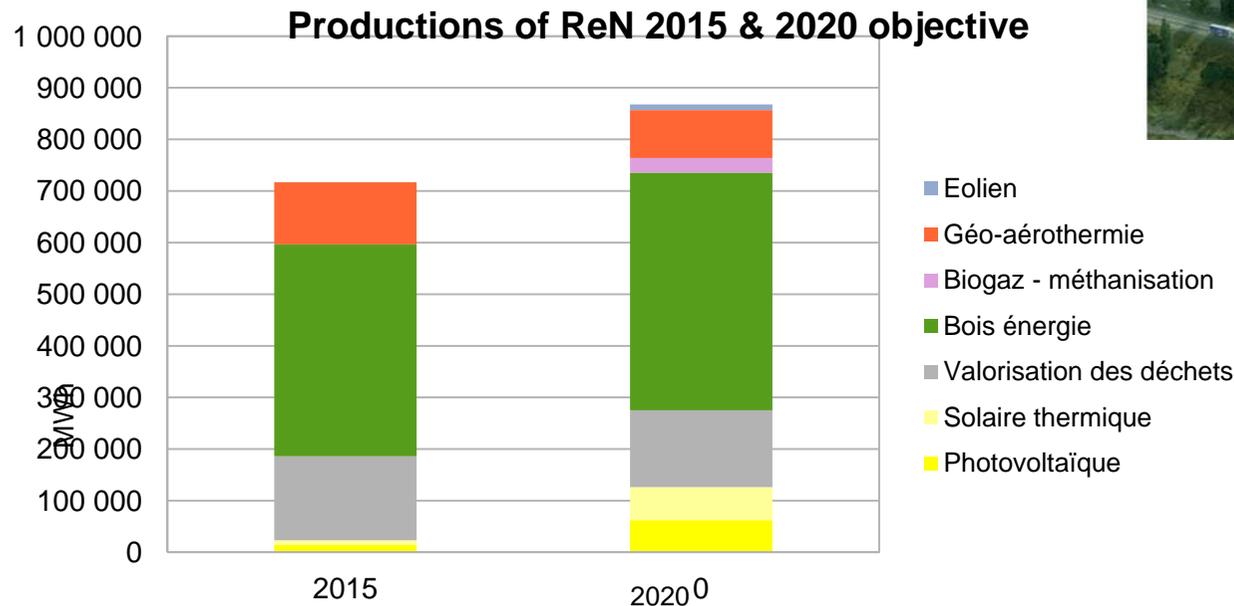


Objectives of local production of renewable energies

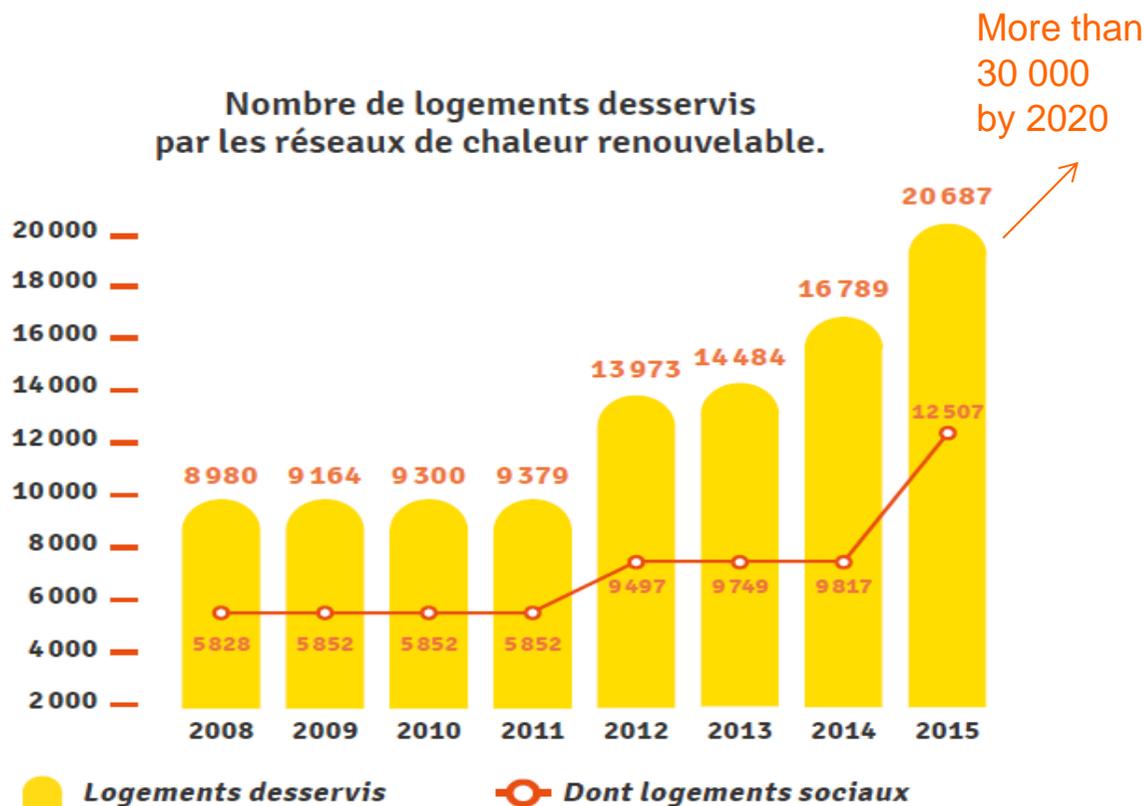


A limited and quantifiable local potential : **never more than**

- **20% of the current consumption of the territory**
- Objectives set : to double up the production by 2020
- and multiply it by 3 by 2030
- in comparison to 2008
- A mix of solutions



A major lever for action : Development of renewable heating networks with controlled price



AND IN FRANCE ?

- A national commitment : **Energy Transition for Green Growth Act** adopted in 2015
- **By 2030 :**
- Objective of 38 % of final heating consumption supplied by renewable energy (18 % today)
- Multiply by 5 the renewable energy delivered by heating and cooling networks

- Nantes : one of the most involved French cities in heating networks with a huge development program

Heating networks, a major lever for action



- **Environmental** issue: 65 000 tons of CO₂ saved/year in 2020, being about 11% of our Climate Plan's objective
- **Business development** issue: the development of heating networks creates employments and activities on the territory (120 M€ created to build networks and heating plants between 2014 and 2020)



Heating networks, a major lever for action

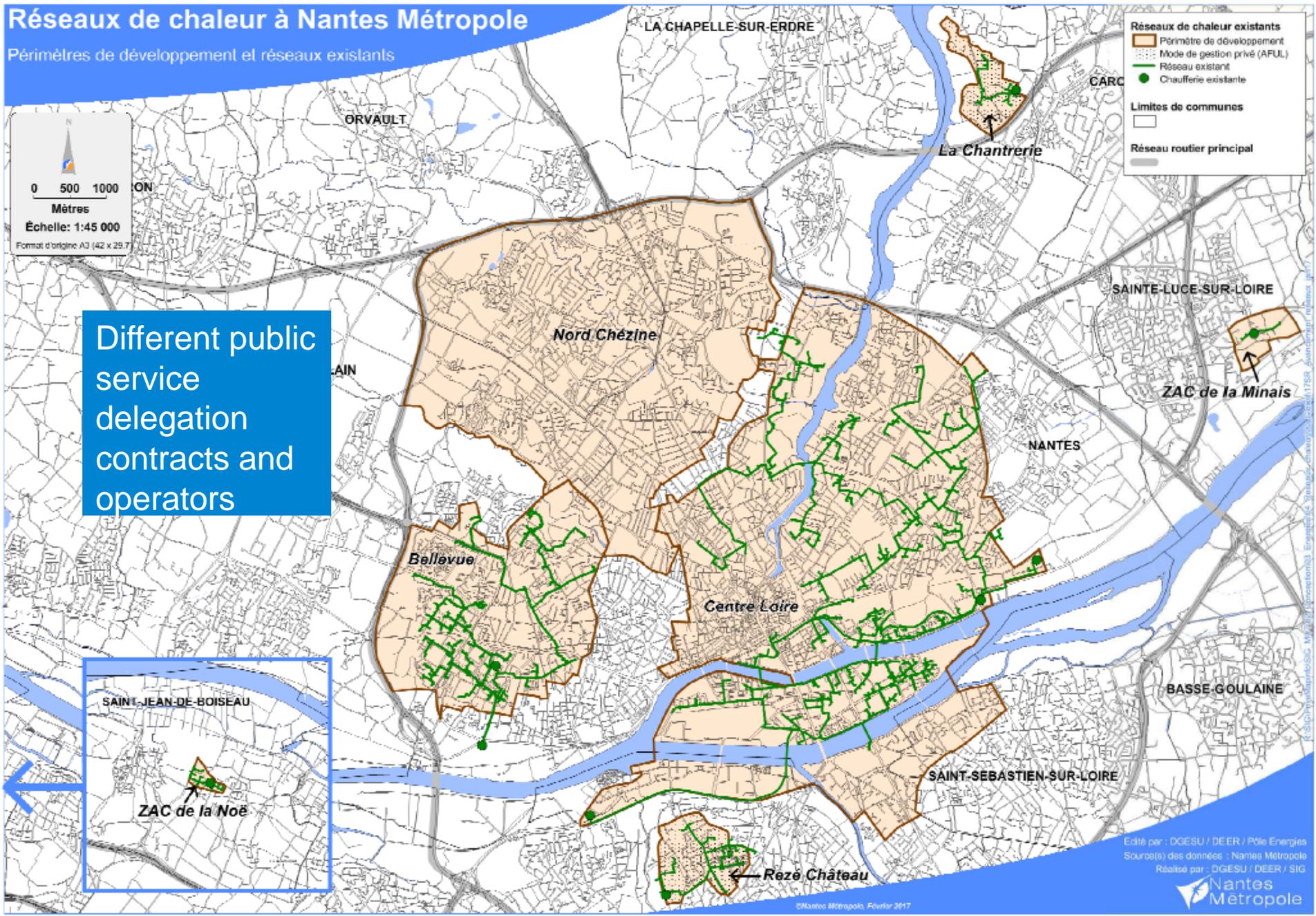


- Social** issue: at a time when energy prices
- are rising and highly volatile, control and reduce energy bills for users thanks to a price of heat which is
 - Competitive (lower or equal price to gas, reduced VAT)
 - Set during the Public Service Delegation Contract's period then structurally more stable
 - Less dependent on fossils fuels prices
 - Structural response to cope **with fuel poverty**



Réseaux de chaleur à Nantes Métropole

Périmètres de développement et réseaux existants



Different public service delegation contracts and operators

Edité par : DGESU / DEER / Pôle Energies
Source(s) des données : Nantes Métropole
Révisé par : DGESU / DEER / SIG



Key figures*

- 6 heating networks (4 managed by NM & 2 by private associations)
- 201 GWh delivered
- 85 kms of networks
- 47% of heat delivered to public facilities (hospitals, schools...)
- 7% of households (20 687 households) (France : 6 %)
- 20% of social housing supplied (12 507 households)
- Average price of 70 €TTC/MWh (France : 79 €TTC/MWh)
- Part of renewable energy :
- 73% (waste+wood) (France : 50%)
- 36 500 tCO₂ saved



And by 2020...



- 7 heating networks (5 managed by par NM
- & 2 by private associations)
 - **550 GWh** delivered - **120 km** of networks
 - 50% dedicated to public facilities (Public health facilities, schools , pools, Universities...)
 - More than **30 000 households supplied**
 - (10 % of total households – 20 000 social housing)
 - **50% of social housing in the city of Nantes** connected
 - Part of renewable energy : **75%**
 - 65 000 tCO₂ saved





Various terms of development put together with stakeholders :

- **Renewal of the contracts of** current PSD
- **Global study to** identify remaining potentials to be developed on actual buildings: no statistical approach, based on site datas enabling the partnership with future potential users
- Support from urban planners to assess potential development of heating networks on **new construction areas**
- **Support to private stakeholders' projects** such as AFUL

Heating networks : what role for the local authority?



- *During all the public service delegation contrat period*
- Define **strategy**, pricing
- **Control** of operators
- Committees of users

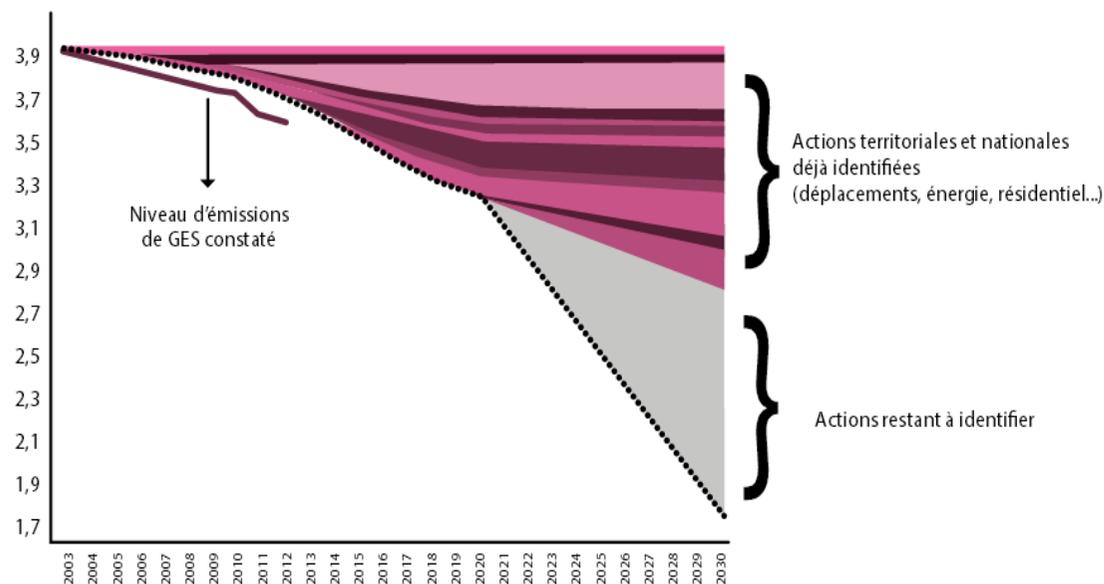
- *Especially during development*
- **Work coordination** : important and over the years coordination with other structuring works, facilitator and interface with stakeholders
- **Communication towards subscribers and users** : support to operator to key accounts, promotion to collective ownerships
- **Large-scale Communication Plan** with the operator for people affected by major works

Nantes Métropole and energy transition

A Great public Debate to go further...



Quelles nouvelles actions énergie climat pour tenir les engagements de la Métropole nantaise ? (Tonne équivalent CO₂/habitant)



SOURCE / Air Pays de la Loire 2015

> The Great Debate on Energy Transition (sept 16 - march 2017) allowed to collect a diversity of points of view and practices (inhabitants and stakeholders) to speed up energy transition and go further. It will lead to a **roadmap** shared with stakeholders (not only on local authority responsibilities and actions).