

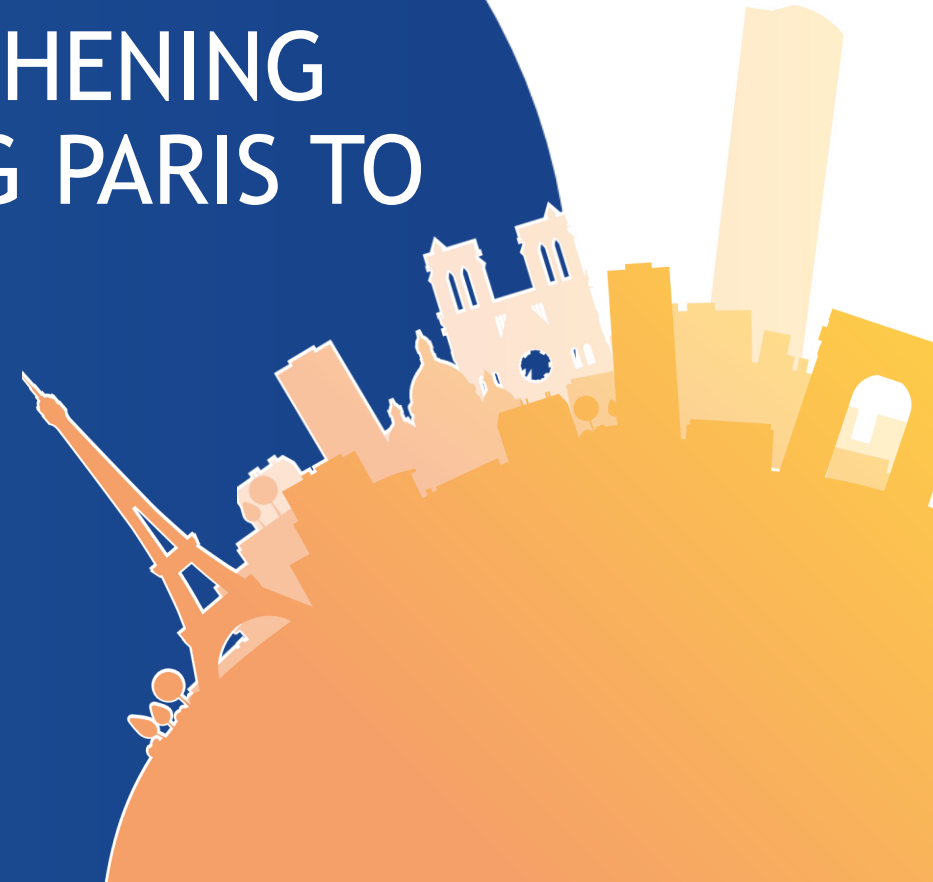


FRAÎCHEUR DE PARIS

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REFRESHING PARISIANS, STRENGTHENING  
THE CITY'S RESILIENCE, ADAPTING PARIS TO  
GLOBAL WARMING

*fraicheur de ville*



# THE COOLING PUBLIC SERVICE



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Fraîcheur de Paris develops and operates the district cooling network, the first in Europe and the 11th in the world, by integrating ambitious objectives to support the City in its decarbonization and climate change adaptation process.

Fraîcheur de Paris meets the cooling needs of hotels, department stores, offices and museums in the capital. 10 production sites and 4 storage sites supply nearly **400 GWh/year** of cooling to more than **730 buildings** via **90 kilometers** of networks.

Fraîcheur de Paris is the successor to CLIMESPACE, an ENGIE subsidiary and concessionaire since 1991, and is jointly owned by ENGIE (85%) and RATP Group (15%). With 30 years of experience, it offers a sustainable alternative to traditional air conditioning solutions.

The cooling utility is carbon neutral 2018 and the cooling network is **100% EnR&R certified since 2013**, thanks to the purchase of guaranteed origin electricity from existing renewable assets.

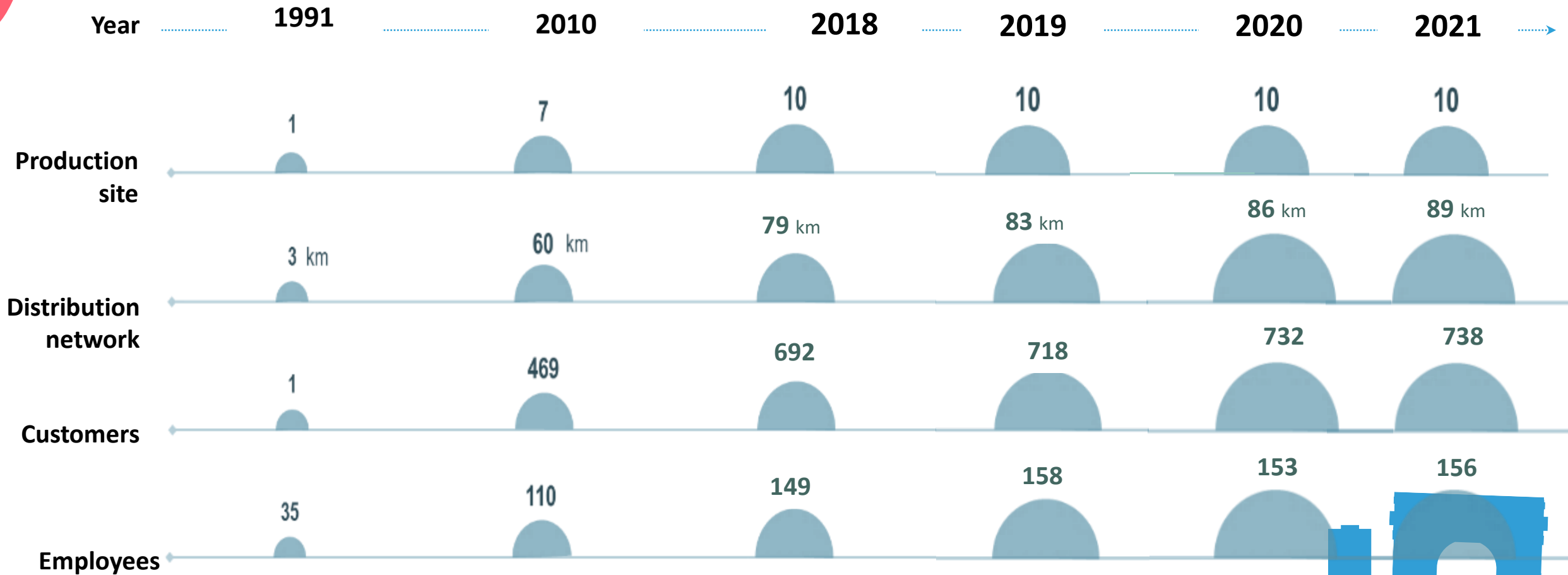
+ 50%  
energy  
efficiency

-35%  
electricity  
consumption

- 50%  
CO2  
emissions

*Paris district cooling network vs stand-alone systems*

# EVOLUTION OF THE DISTRICT COOLING NETWORK SINCE 1991



# Key Figures



**374,1 GWh/year** cooling energy sold



**467 MW** of power contracted



**738** customers



**6 millions** square meters of cooling in Paris



**89 km** round-trip underground network under your feet



**269 MW** of installed capacity



**3** Seine water power plants



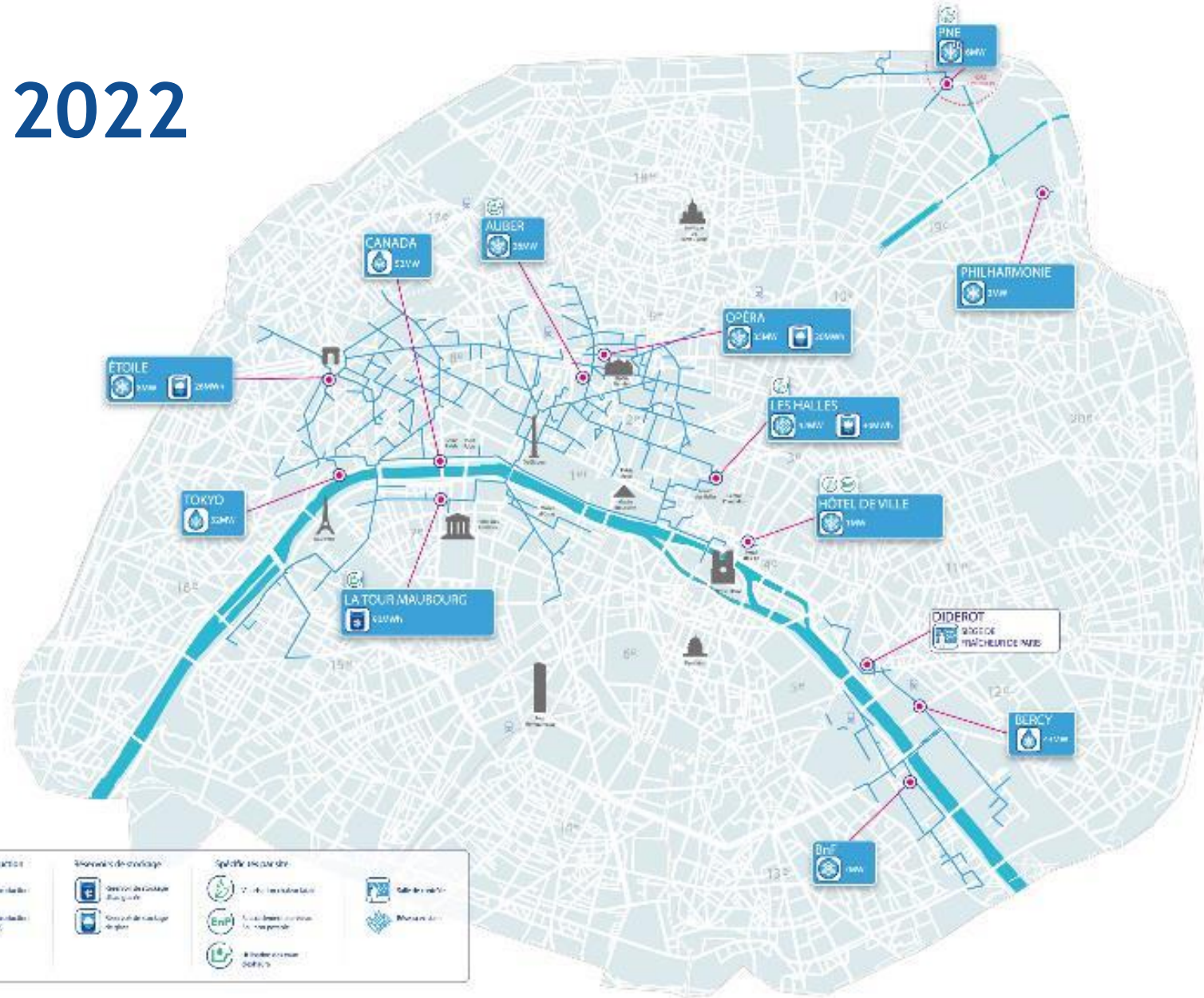
**7** cooling tower plants



**4** energy storage sites



# 2022



### Légende

#### Centrales de production

- Centrale de production
- Centrale de production (Dépense Gaz)
- Centrale de production (Géothermie)
- Centrale de production (Boucle eau chaude)
- Centrale de production (Eau de Seine)

#### Réservoirs de stockage

- Réservoir de stockage d'eau glacée
- Réservoir de stockage de glace

#### Spécificités par site

- Valorisation chaleur fatale
- Salle de contrôle
- Raccordement au réseau Eau non potable
- Réseau existant
- Réseau futur
- Utilisation des eaux d'exhaure
- Production locale électricité photovoltaïque
- 2022 Date de mise en service

**Légende**

<b>Centrales de production</b> Centrale de production Centrale de production (Dépense Gaz) Centrale de production (Géothermie) Centrale de production (Boucle eau chaude) Centrale de production (Eau de Seine)	<b>Réservoirs de stockage</b> Réservoir de stockage d'eau glacée Réservoir de stockage de glace	<b>Spécificités par site</b> Valorisation chaleur fatale Salle de contrôle Raccordement au réseau Eau non potable Réseau existant Réseau futur Utilisation des eaux d'exhaure Production locale électricité photovoltaïque
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# SUBSCRIBERS TO THE DISTRICT COOLING NETWORK



## Offices

Allianz  
Axa  
BNP Paribas REPM  
Constructa  
Crédit Lyonnais  
GECINA  
Generali  
Groupama immobilier  
Natixis  
SCOR

## Department stores

Beaugrenelle  
Carrousel du Louvre  
Forum des Halles  
Galeries Lafayette

## Museums, theaters

Le Louvre  
Musée du quai Branly  
Musée Grévin  
Cité de la Musique  
Salle Pleyel  
La Philharmonie

## Hotels

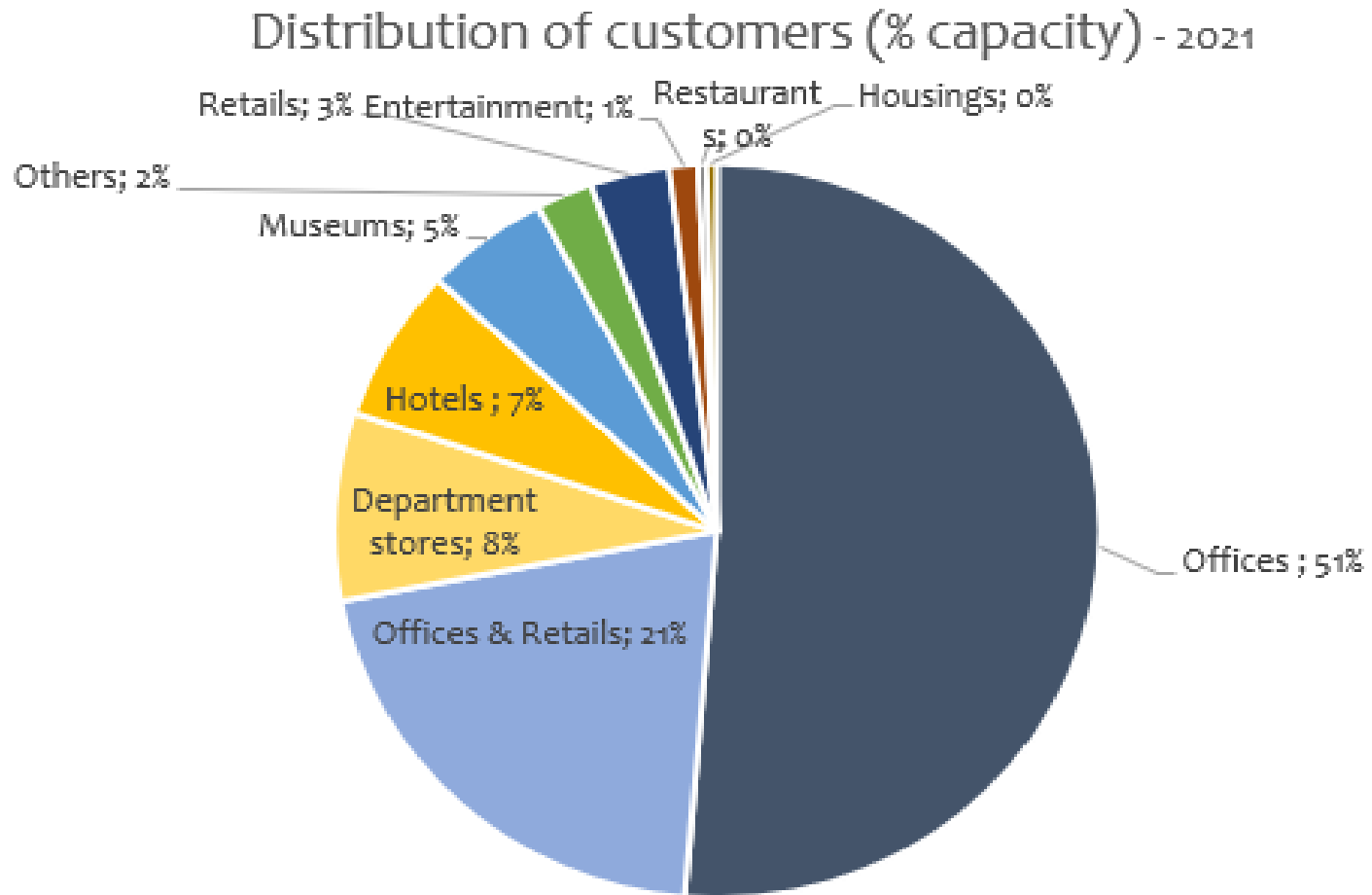
Le Bristol  
Le FourSeasons Georges V  
Le Peninsula  
Le Meurice  
Le Plaza Athénée

## Official buildings

Assemblée nationale  
Ministère de La Défense  
Ministère de l'Ecologie  
Hôtel de Ville de Paris



# DISTRIBUTION OF CUSTOMERS TO THE DISTRICT COOLING NETWORK





# THE OPERATING PRINCIPLES OF THE DISTRICT COOLING NETWORK



# THE CONTRACTUAL FRAMEWORK



**FRAÎCHEUR DE PARIS**

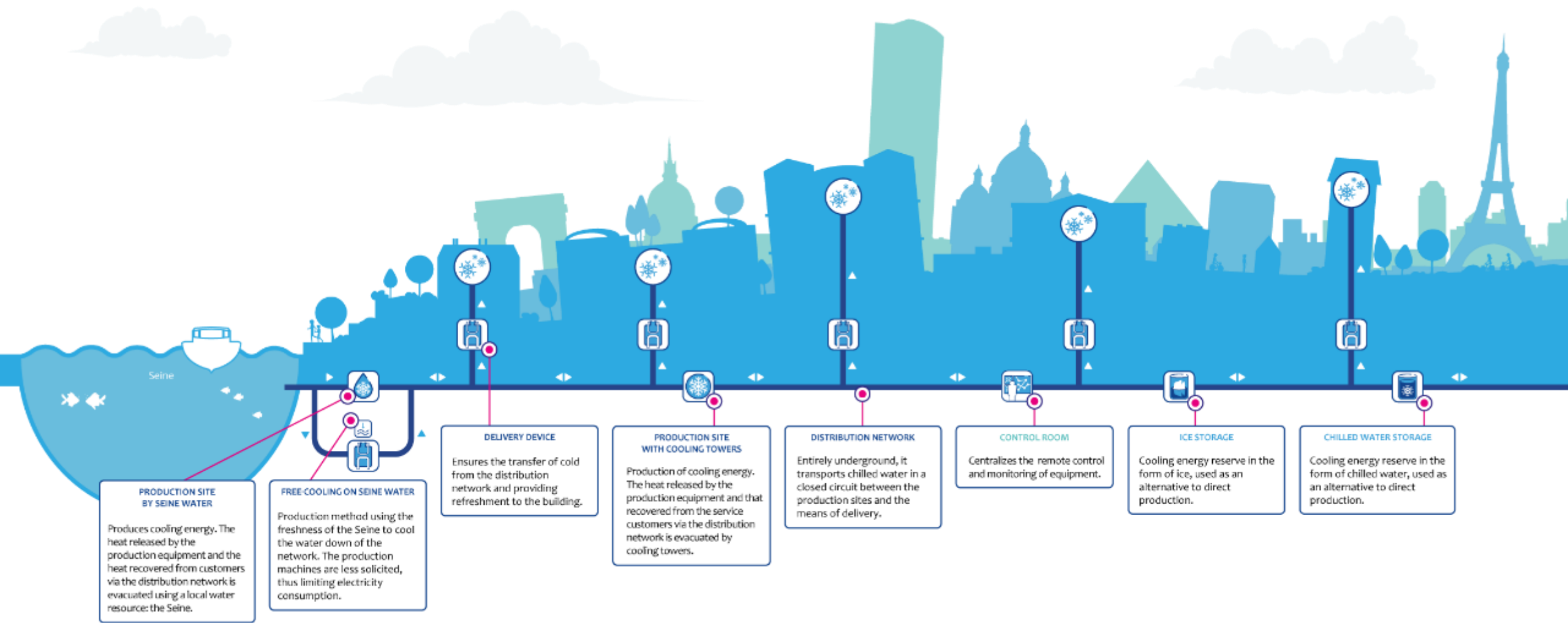


20-year contract  
FRDP invests, operates,  
develops the network

The city of Paris controls  
the execution of the  
contract

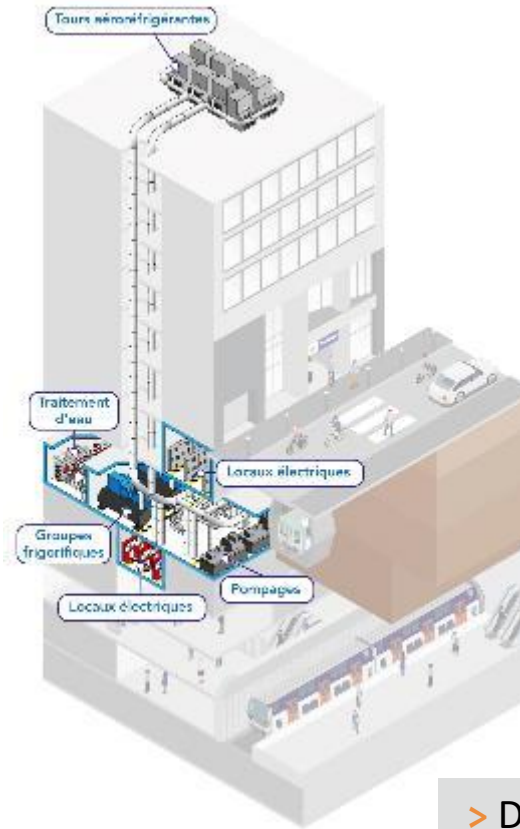
10-year contracts  
FRDP delivers cold water  
The customer is invoiced  
every month





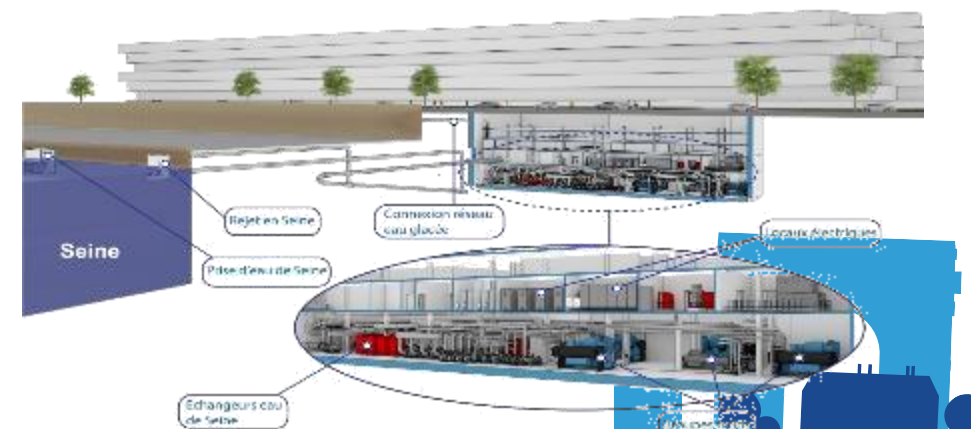
# THE PRODUCTION

- > Remotely controlled
- > Monitored 24/7



- > Discreet power plants (Auber RER station)

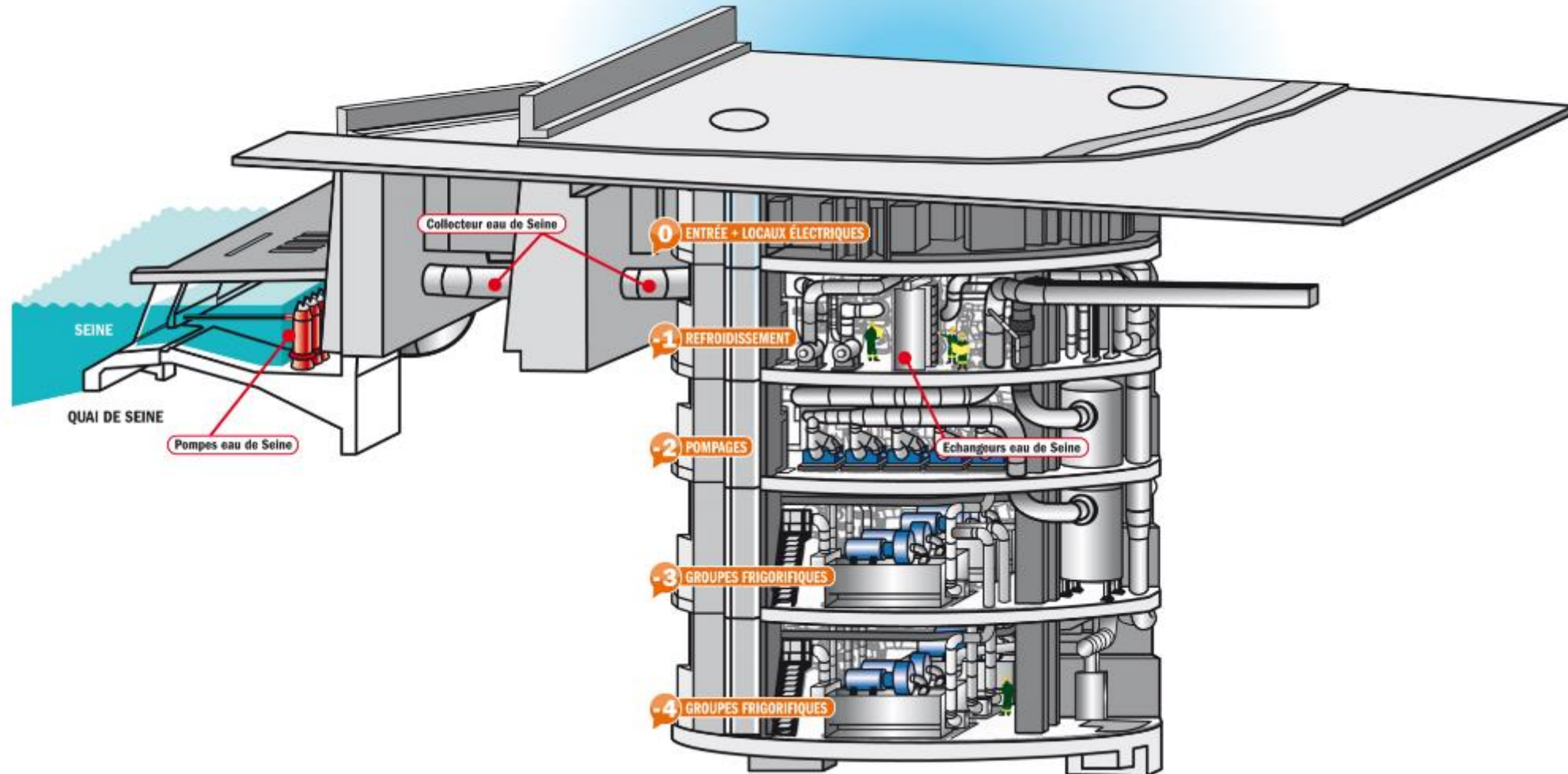
- > The Seine, the best ally of the cooling network





# FOCUS ON A SEINE WATER PLANT

## CANADA PLANT



# THE AMBITIONS OF FRAÎCHEUR DE PARIS



# NETWORK DEVELOPMENT - 2042 - projection plane

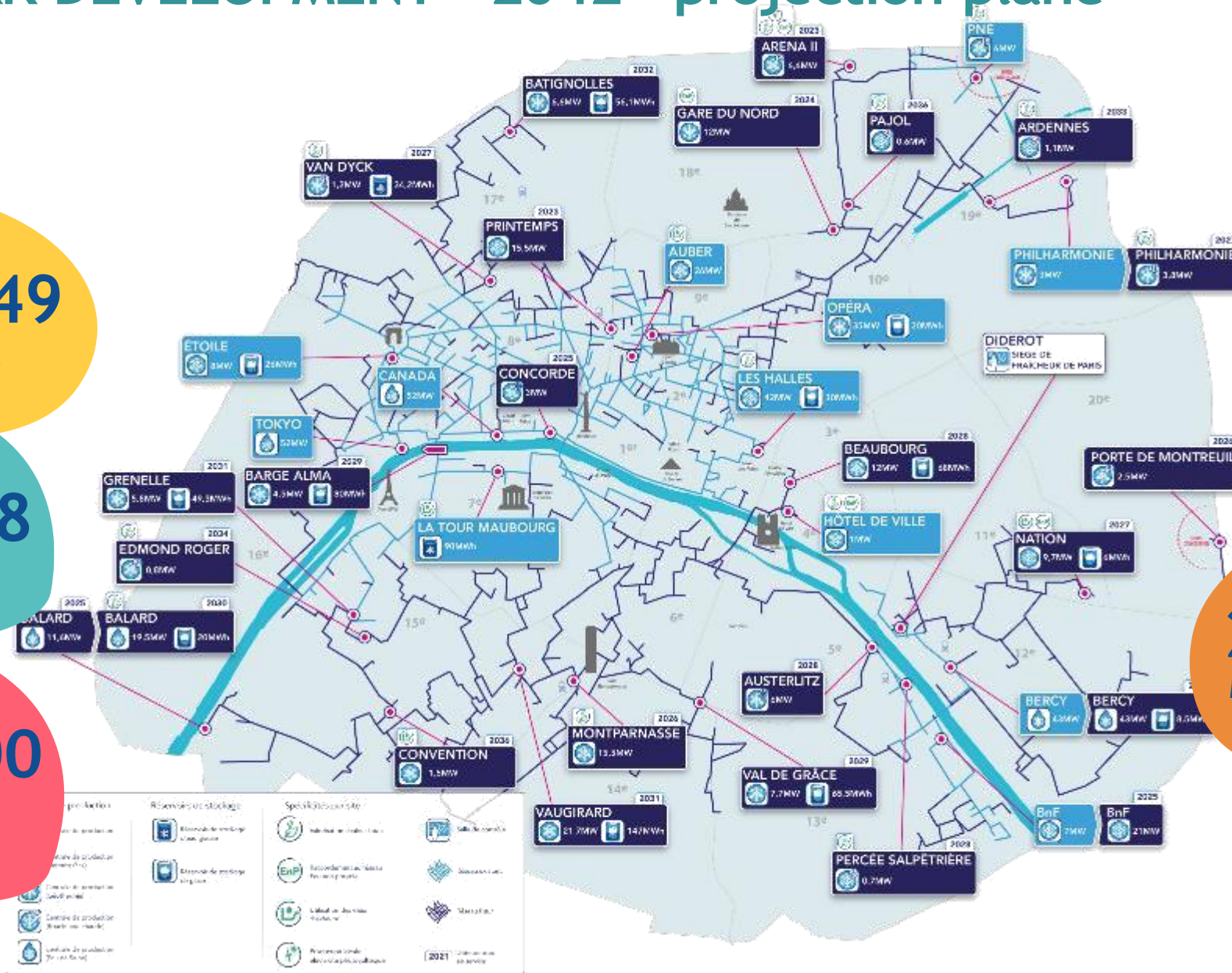
**89 → 249**  
km of network

**738 → 3058**  
Customers

**450 → 1000**  
GWh/year

**12 → 33**  
means of delivery

**269 → 553**  
MW of production installed





# THE COLD NETWORK IS A TOOL FOR THE CITY TO ADAPT TO GLOBAL WARMING

- ▶ **By cooling buildings with fragile people** (schools, care homes, hospitals, etc.)
- ▶ Because it is **more beneficial to the environment** than stand-alone installations
- ▶ Because it reduces **the urban heat island effect**
- ▶ Because the City **can mandate the use of green and local electricity**

