The French Federation of Energy and Environnement Services Industries

Federation of 6 industry Associations, including :

SNCU : District Heating and Cooling Association.

SNEC : Energy Efficiency Services Association.

SYPEMI : Professional Association of Building Multiservice and Facilities Management Companies.

S2TI : Association Of Remote Management, Teletransmission and Automated Building System.

500 member companies with 60 000 employees

I. District Heating and Cooling in France today.

II. The «New Deal» for District Heating in France.

III. Two examples :

- District Heating in Paris : CPCU.
- District Cooling in Paris : CLIMESPACE.

I. District Heating and Cooling in France

District Heating

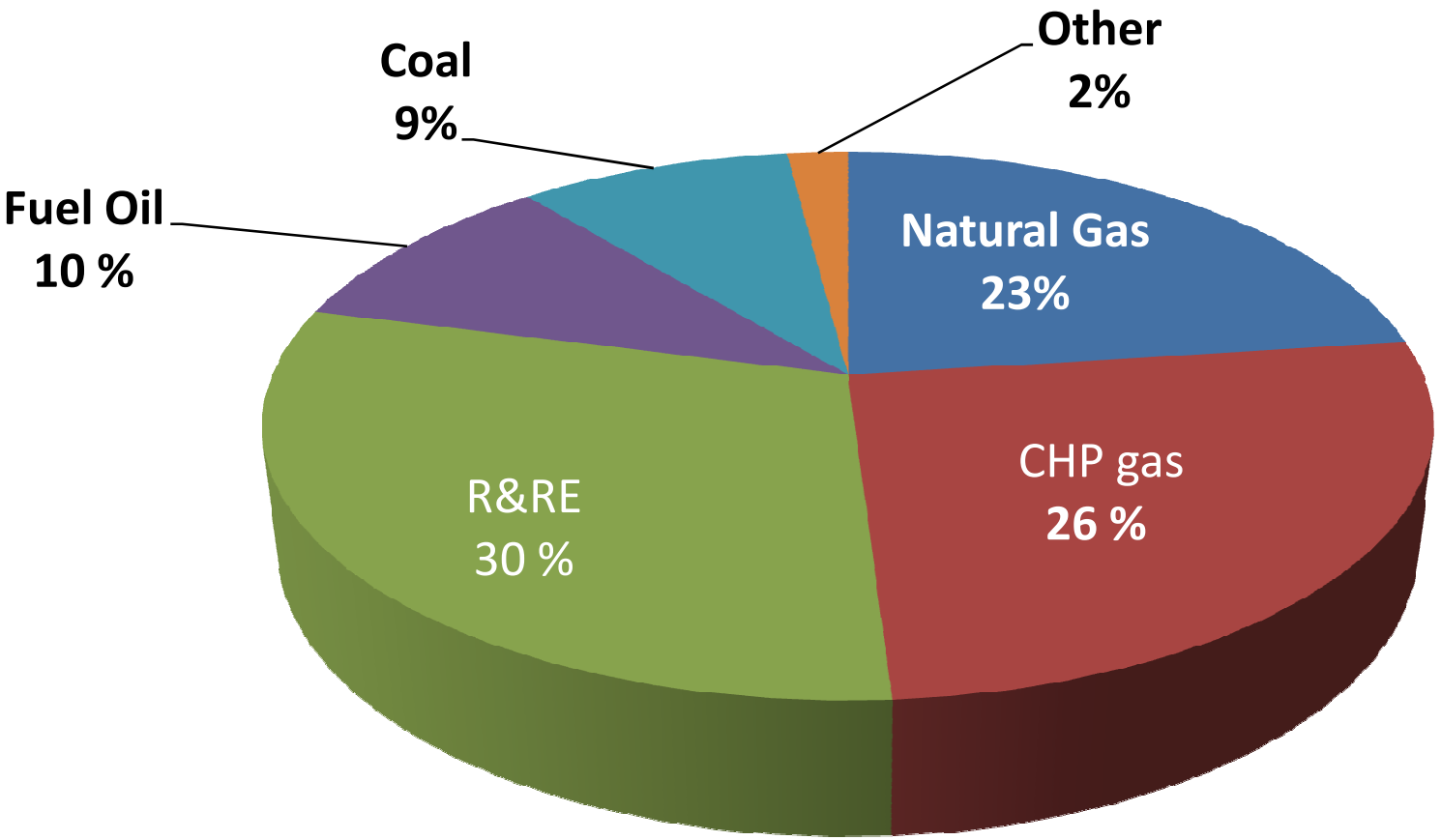
- 400 Networks
- 18 000 MW
- 3000 km
- Turnover : 1.5 billion euros
- Household connected :
  > 2 million (6 %)
- 180 g CO_2 / kWh

District Cooling

- 13 Networks
- 620 MW
- 140 km

District Heating energy

District Heating fuel mix in France (2009 temporary report)



II. The district Heating «New Deal»

After 20 years of stagnation and competition from electricity and individual gas heating, the «so-called» Grenelle Laws (2009 / 2010) on sustainable development defined :

a new policy for DH

- **growth** of District Heating with focus on the use of **renewable** and **recoverable energies** (biomass, waste to energy, geothermal, etc …).

Targets for District Heating in 2020 :

1. Renewable and recoverable energies > 50 % (30 % today)
2. Doubling the households connected (from 2 million to 4 million in 2020).

The Government decisions

1. Tax incentive : end users are eligible for a lower VAT rate (5.5 % instead of 19.6 %)

   if R&R energies account for over 50 %.

2. For investment : creation of a “Heat Fund”
   - for R&R energy heat production plants,
   - for extending networks and for new pipes,
   - total amount available : 1 billion euros over 4 years.

3. New or renovated buildings could be obliged to connect with the network if the municipality decides.

4. Local Energy and Climate Plans have to be prepared before 2012 by district authorities.

III. Two examples

10 central energy plants replace 6000 building boiler systems

CPCU
Notre réseau renouvelle vos énergies

COMPAGNIE PARISIENNE DE CHAUFFAGE URBAIN : PARIS

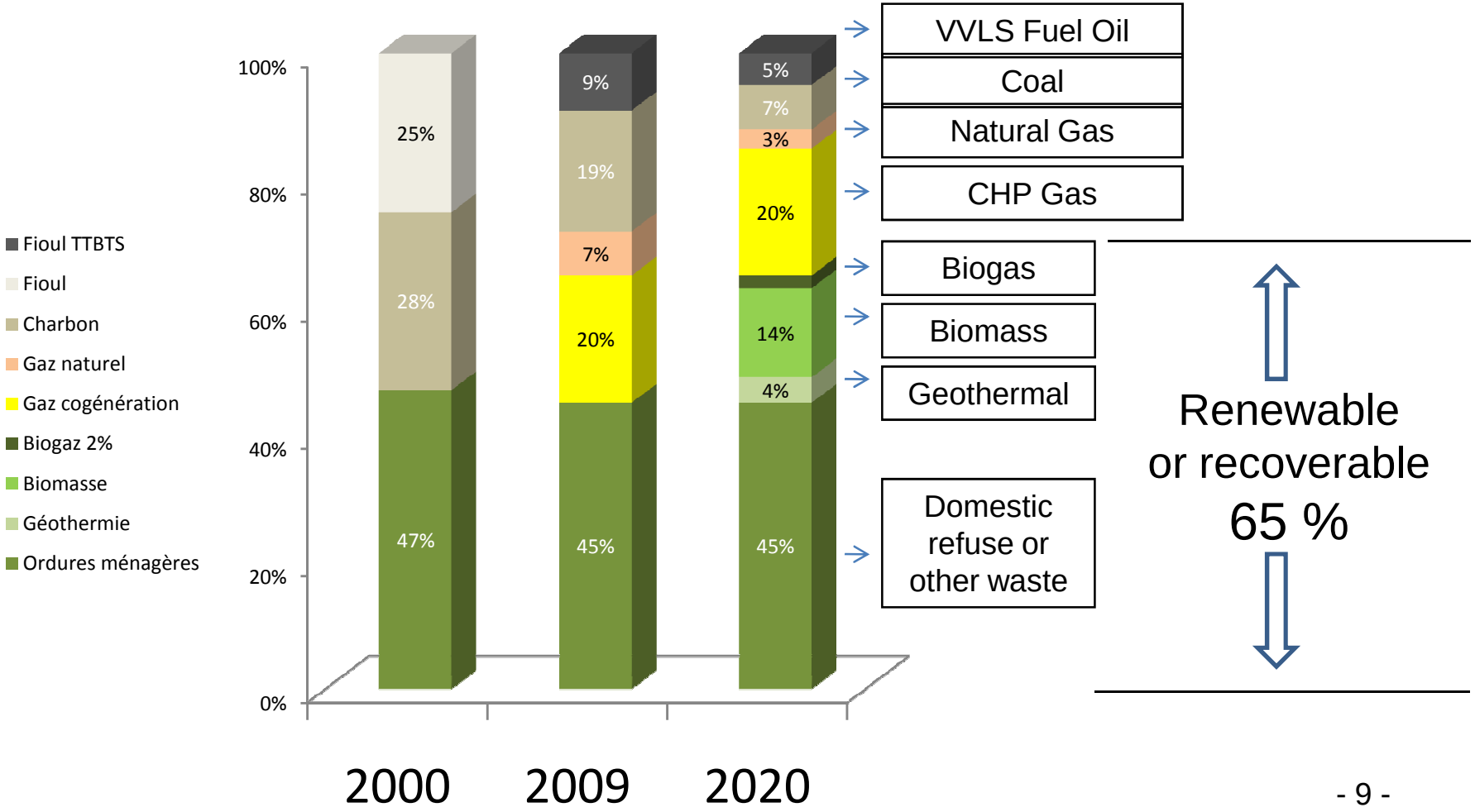
The number one district heating system in Europe

- **3000 MW installed (+430 MW incineration)**
  - **Heat : 6 000 GWh**
  - **Electricity : 900 GWh**
  - **460 000 housing unit equivalents (42 M sq.m.)**
  - **6 000 buildings**

Key to map of Paris
Red : CPCU production plant
Green : Domestic refus incineration
Blue : Geothermal
Brown : Biomass and biogas

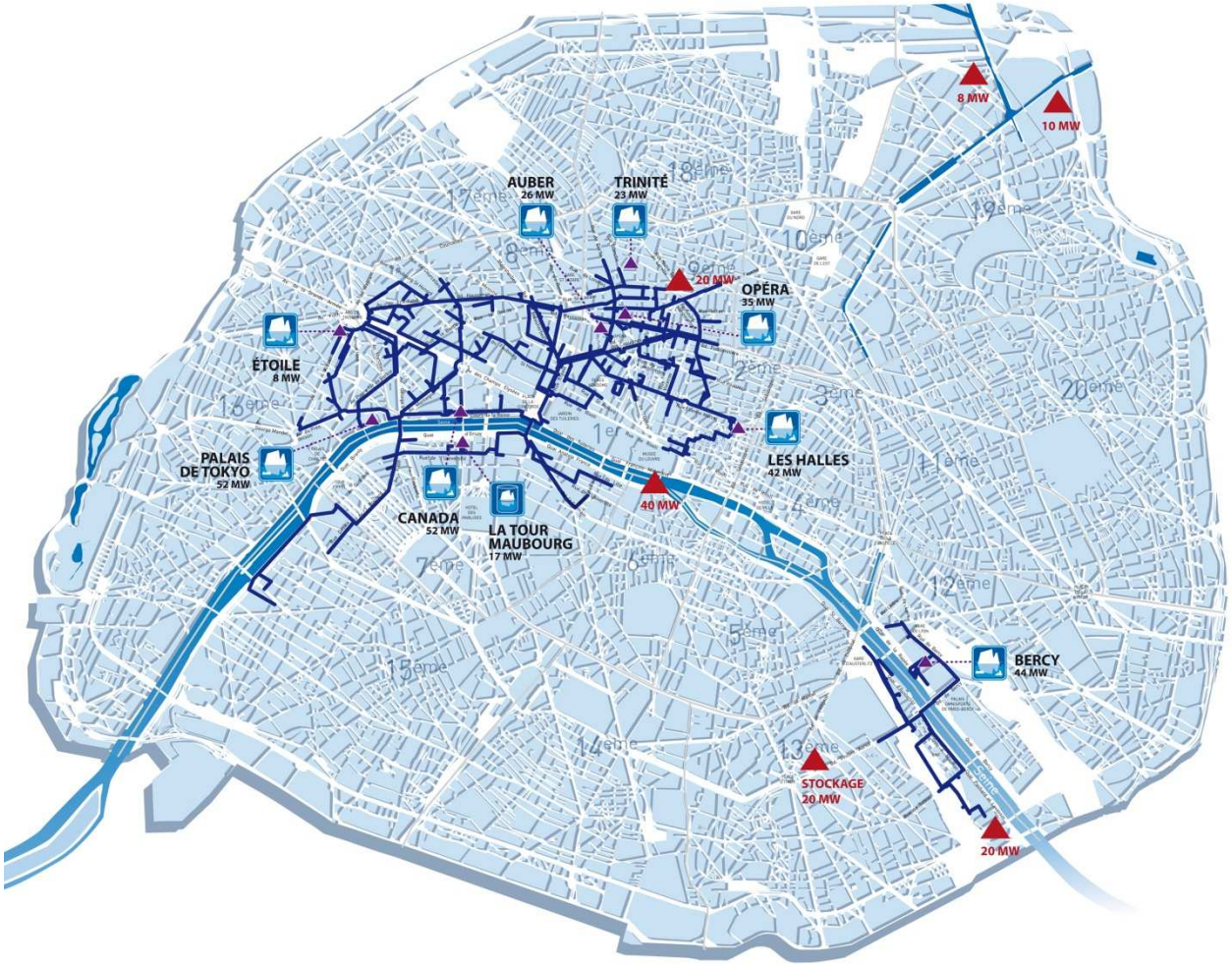
Energy Mix :
65 % renewable or recoverable in 2020

CPCU : Paris District Heating Energy Mix
2000 - 2020



Europe's largest District Cooling System

CLIMESPACE



- **5 million sq.m**
- **500 buildings connected**
- **Total distance : 70 km**
- **Installed power : 300 MW**
- **Energy sold : 440 GWh**
- **Clients :**
  - Department stores
  - Museums
  - Hospitals
  - Hotels
  - Offices

Environmental balance sheet of District Cooling System

8 cooling plants replace 500 separate building plants

1. Energy savings (electricity) > 40 %.
2. Renewable Cooling : The River Seine, 4 months in Winter.
3. Health risk (Legionnaires disease) virtually eliminated
   - eliminates the need for 600 humid cooling towers in Paris.
4. Other impacts :
   - TEWI (Total Equivalent Warming Impact : - 50 %).
   - Reduces water consumption by 65 %.
   - Reduces use of chemicals by 80 %.
   - Eliminates noise pollution.
   - Eliminates architectural eyesores.
   - Safe, reliable operation.

Conclusion

- District Heating Systems enable the large scale use of renewable energy sources that otherwise would be wasted.

- District Heating and Cooling Sytems :
  - Are adaptable and future-ready.
  - Allow storage, adjustment to demand peaks, and allow the use of efficient technologies such as

Cogeneration and Heating / Cooling pumps

Thank you for your attention