

ENERGYCITIES



CARBON NEUTRALITY ? WHERE ARE CITIES IN THE DEBATE ?

Manchester/ Urbact
Euroheat and Power
01/10/2019

ONE SIZE DOES NOT FIT ALL

Tartu, Estonia, 100,000 inhabitants; 80% of the energy demand covered by the district heating, biomass.

The more housing are refurbished, the more electricity is needed, and it is produced by shale oil (the worst)

Estonia energy resources are huge: shale oil



Zadar, Croatia, 75,000 inhabitants

Dalmatian cost

Low need for heat

Connected to gaz only few years ago

2050 LTS: WHAT ABOUT LOCAL ENERGY ?

Long Term Strategy Options								
	Electrification (ELEC)	Hydrogen (H2)	Power-to-X (P2X)	Energy Efficiency (EE)	Circular Economy (CIRC)	Combination (COMBO)	1.5°C Technical (1.5TECH)	1.5°C Sustainable Lifestyles (1.5LIFE)
Main Drivers	Electrification in all sectors	Hydrogen in industry, transport and buildings	E-fuels in industry, transport and buildings	Pursuing deep energy efficiency in all sectors	Increased resource and material efficiency	Cost-efficient combination of options from 2°C scenarios	Based on COMBO with more BECCS, CCS	Based on COMBO and CIRC with lifestyle changes
GHG target in 2050	-80% GHG (excluding sinks) ["well below 2°C" ambition]					-90% GHG (incl. sinks)	-100% GHG (incl. sinks) ["1.5°C" ambition]	
Major Common Assumptions	<ul style="list-style-type: none"> Higher energy efficiency post 2030 Deployment of sustainable, advanced biofuels Moderate circular economy measures Digitisation 				<ul style="list-style-type: none"> Market coordination for infrastructure deployment BECCS present only post-2050 in 2°C scenarios Significant learning by doing for low carbon technologies Significant improvements in the efficiency of the transport system. 			
Power sector	Power is nearly decarbonised by 2050. Strong penetration of RES facilitated by system optimization (demand-side response, storage, interconnections, role of prosumers). Nuclear still plays a role in the power sector and CCS deployment faces limitations.							
Industry	Electrification of processes	Use of H2 in targeted applications	Use of e-gas in targeted applications	Reducing energy demand via Energy Efficiency	Higher recycling rates, material substitution, circular measures	Combination of most Cost-efficient options from "well below 2°C" scenarios with targeted application (excluding CIRC)	COMBO but stronger	CIRC+COMBO but stronger
Buildings	Increased deployment of heat pumps	Deployment of H2 for heating	Deployment of e-gas for heating	Increased renovation rates and depth	Sustainable buildings			CIRC+COMBO but stronger
Transport sector	Faster electrification for all transport modes	H2 deployment for HDVs and some for LDVs	E-fuels deployment for all modes	Increased modal shift	Mobility as a service			<ul style="list-style-type: none"> CIRC+COMBO but stronger Alternatives to air travel
Other Drivers		H2 in gas distribution grid	E-gas in gas distribution grid					Limited enhancement natural sink

LOCAL POTENTIAL UNTAPPED



SOME STRICKING NATIONAL COMMITMENTS WITH CONCRETE LOCAL TRANSLATION

« Out of gas » government agreement in the Netherlands by 2040



Source: Netherland government; 1 20 millions support to 27 district to get out of gas

HELSINKI CLIMATE NEUTRAL BY 2035

NET ZERO ECONOMY BY 2045 IN FINLAND ; OUT OF COAL AND REDUCTION OF 50% OF FOSSIL FUEL BY 2030

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Mitigating climate change

The mitigation or prevention of climate change refers to the actions that decrease the greenhouse gas emissions. The key factors in climate change mitigation are conserving energy, using it more efficiently and replacing fossil fuels with forms of renewable energy (such as wood fuel, water power, wind power and solar energy).

The role of municipalities in the mitigation of climate change remains essential, as all operations causing emissions are carried out in the municipalities and within their borders. However, Helsinki, for example, is only able to directly affect about 15 percent of the emissions in its region. Land use planning and traffic planning provide ways to decrease carbon dioxide emissions of not just city organization but the whole urban area.



Energy company Helen
towards a climate-neutral future



The Harakka Island and Viikki Environment house – small-scale energy production



mySMARTLife – smart and energy efficient living in Merihaka and Kalasatama



Climate Street – new energy and small miracles



Climate-smart Helsinki – towards more sustainable city planning



Streetcars and metro utilising green electricity



City bikes are the best way to move in the downtown



Parking advantages for low-emission cars



Environmental management in the city administration



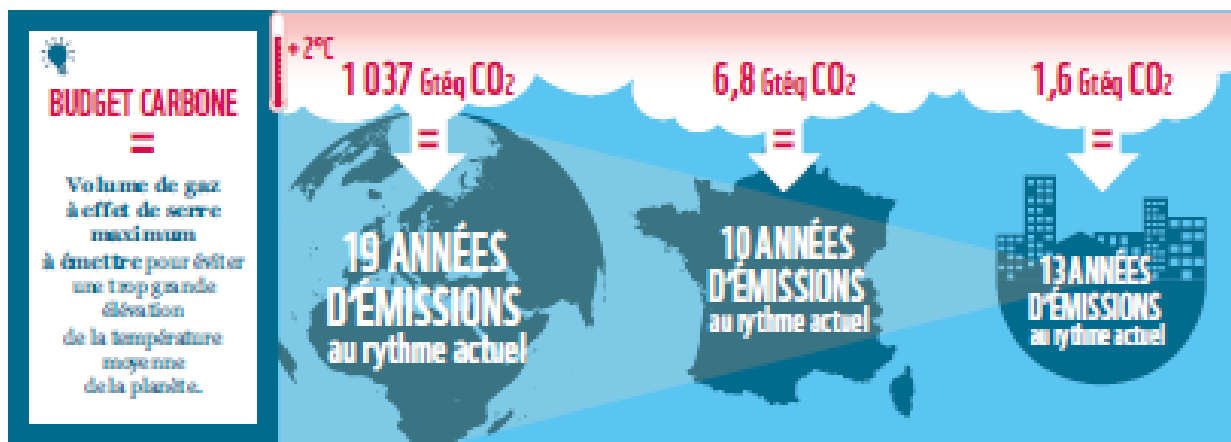
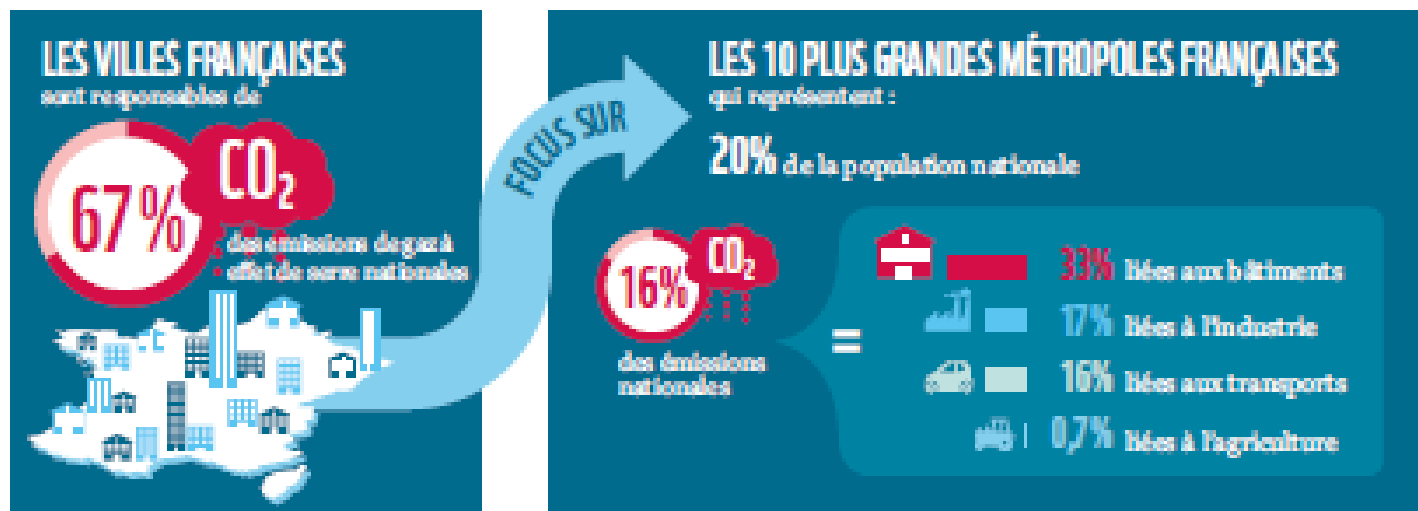
Partnership through Climate Partners network



Waste reduction and recycling conserve natural resources

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THE SIZE OF THE CHALLENGE



LE DÉFI CLIMATIQUE DES VILLES



Vers des métropoles françaises alignées avec l'Accord de Paris

EMMISSIONS YEARS LEFT ?

	SCÉNARIO 1,5°C (PROBABILITÉS DE 50%)		SCÉNARIO 2°C (PROBABILITÉS DE 66%)	
	BUDGET CARBONE (MtéqCO2) 2016-2100	NOMBRE D'ANNÉES D'ÉMISSIONS AU RYTHME ANNUEL CORRESPONDANT*	BUDGET CARBONE (MtéqCO2) 2016-2100	NOMBRE D'ANNÉES D'ÉMISSIONS AU RYTHME ANNUEL CORRESPONDANT
MÉTROPOLE DU GRAND PARIS	250	3	682	9
MÉTROPOLE AIX MARSEILLE PROVENCE	72	2	197	5
MÉTROPOLE DE LYON	51	5	139	14
MÉTROPOLE EUROPÉENNE DE LILLE	47	5	128	13
BORDEAUX MÉTROPOLE	37	7	101	18
TOULOUSE MÉTROPOLE	34	8	94	21
NANTES MÉTROPOLE	26	7	70	20
MÉTROPOLE NICE CÔTE D'AZUR	20	6	55	16
EUROMÉTROPOLE DE STRASBOURG	19	6	53	16
MÉTROPOLE ROUEN NORMANDIE	19	4	52	11
TOTAL DES 10 MÉTROPOLES	577	5	1571	13

NEW BUZZ WORDS ? OR REAL SHIFT ?

- ❖ **Climate positive City** > at the R&D Innovation summit in Brussels yesterday, said as a new mantra by the Mayor of Stockholm > we should not fight on concept though but know why we are doing it
- ❖ **VP letter of Mission** “I want you to focus on instilling a new climate culture in Europe. The umbrella for this should be a new **European Climate Pact**— bringing together regions, local communities, civil society, industry and schools. Together they will design and commit to a set of pledges to change behaviours across our society.”
- ❖ The thermo-industrial civilization....
- ❖ The decarbonisation package, the infrastructure package ?

Policy
enabler

Project
partner

Local authority

Infrastructure
operator

or facilitator

POLICY & REGULATORY ENABLER

- ❖ « Community involvement » key axis of **Steinfurt District** strategy to become 100% self-sufficient by 2050
- ❖ By 2025, **London** commits to supply $\frac{1}{4}$ of the city's energy from decentralised sources
- ❖ By 2019, **Ghent** aims for 15% local RE in domestic consumption + calling on developers to open 50% of project capital to citizens



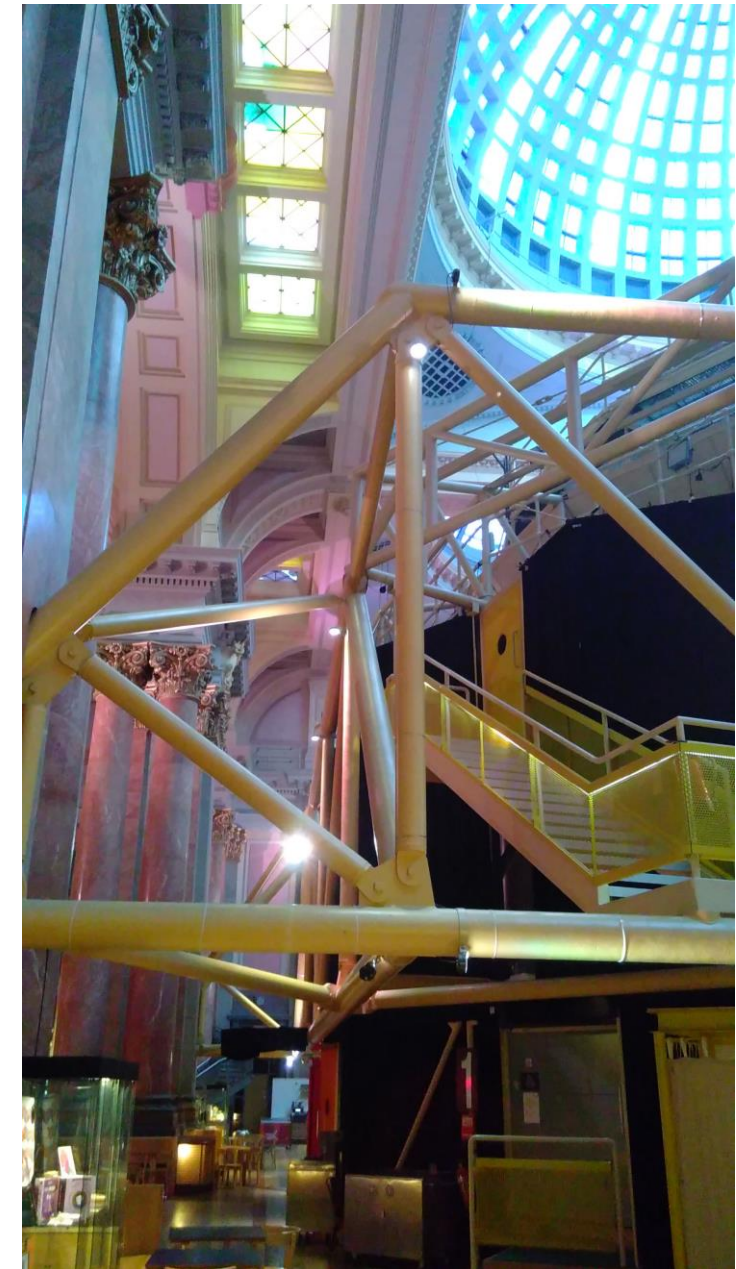
COMMUNITY-FUNDED DISTRICT HEATING IN EEKLO, BELGIUM



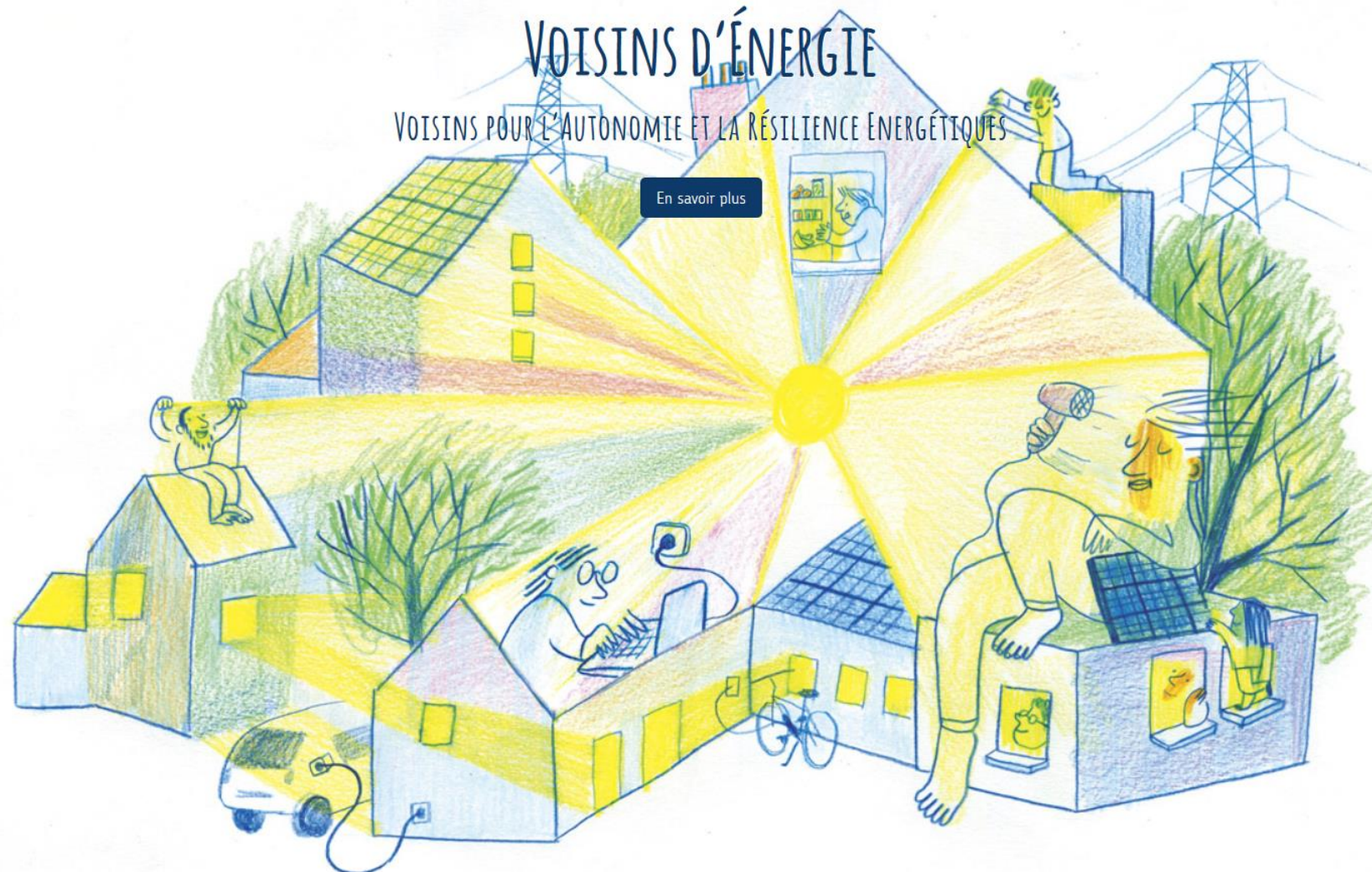
- ❖ Min. 30% financial participation by citizens
- ❖ 100% green heat requirement by 2036
- ❖ Heat price should not exceed that of fossil fuels

NO MORE STRANDED ASSEST

- > Is the debate supply or demand-side oriented ?
- > will the future Gaz package bring real geopolitical stability by investing in local infrastructures ?
- > how will it reinforce local actors ?
- > More than a sector's revolution, a system's change (from national to local, from PPP to CCC)



MOVES FROM THE GROUND « ENERGY NEIGHBORS » IN BRUSSELS



MORE INFORMATION

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