



The Energy Challenges for Porto 2020

- A Vision for the Energy of Proximity -

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AdEPorto – Porto Energy Agency

- 2006 - Porto Municipality submitted a joint application to the IEE to create 5 energy agencies (Bordeaux, Latina, Murcia, Porto and Riga).
- 2007 - AdEPorto was created by 20 institutions
- 2008 - 5 more joined in 2008 and
- 2010 - 8 more (7 Municipalities!) in 2010



1 Mio inhabitants
300 km²



Energy in Porto

Milestones 2007 -2010

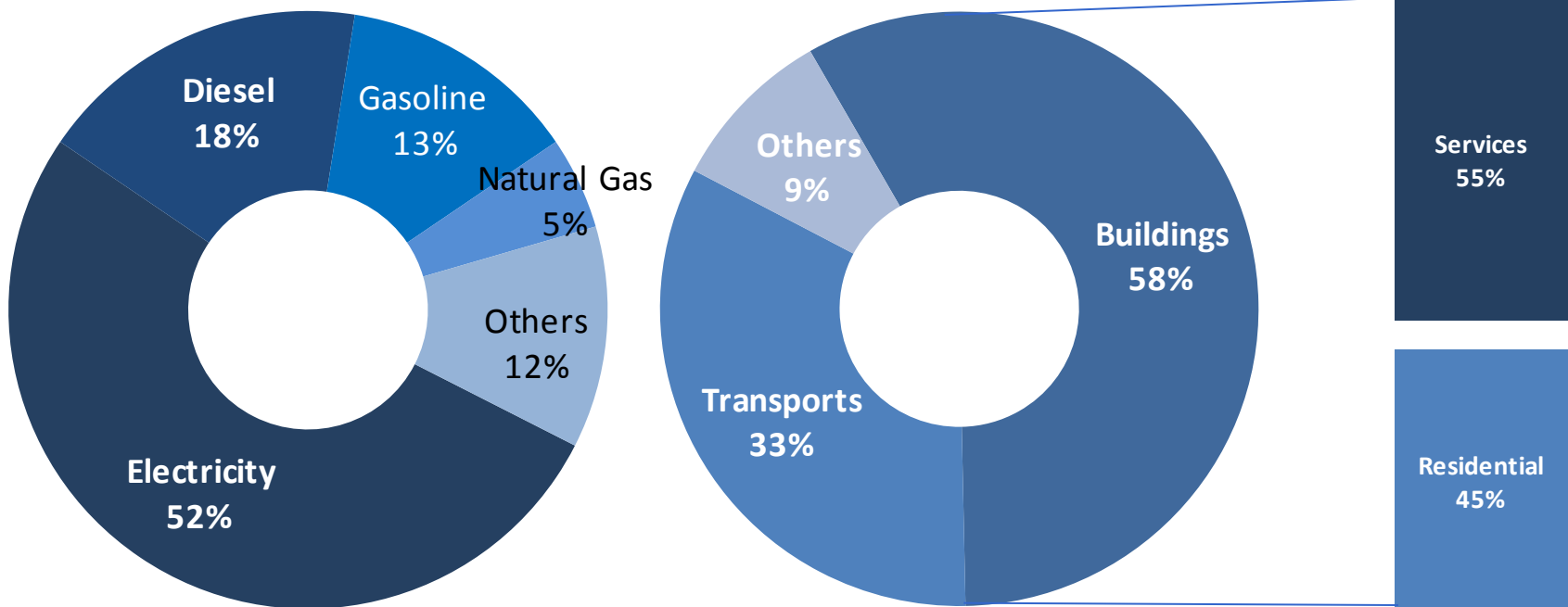
- (1) Energy Matrix – The diagnosis of the energy fluxes.
The Porto's energy profile
- (2) Porto's Strategy for Sustainability
- (3) Porto and The Covenant of Mayors
- (4) Porto's SEAP
 - Actions and CO₂ impact
 - Strategic measures regarding buildings (historic and new)
 - RUTE – Urban heating and cooling network
 - Solar Domestic Hot Water in the Social Housing
- (5) Agency's Expansion to 8 Municipalities

(1) Porto Energy Matrix

Porto Profile: 5.661 GWh primary energy (2004)



(edited in 2008)



(2) Sustainability Strategy of Porto

8 AXIS 'PLUS'

- **'Porto' Brand** – Porto as a community with a history, a will and a responsibility
- **Urban rehabilitation** – Building a urban bridge towards the future
- **Mobility** – A centrality and a metropolis
- **Environmental resources** – As they cannot be sustainable, cities owe solidarity to the territory on which they are dependent
- **Education** – Preparing the next generation
- **Tourism, culture and leisure** – Welcoming and exchanging
- **Competitive edge** – Affirming and developing its skills
- **Governance** - Citizens and not consumers



(3) Porto and the Covenant of Mayors



- Decision by the city executive in November 2008
- Signature by the Mayor in Brussels, February 2009
- SEAP approval by the executive in October 2010 and submission to the Covenant of Mayors
 - 45% reduction of CO₂
 - 21% - National electricity mix
 - 24% - Local City Action
 - 29% - Mobility & transport
 - 55% - Building retrofit (incl. renewable)
 - 16% - Other
 - Energy reduction local: 20%
 - Renewable penetration: 35% (6% local + 29% national)



Brussels, February 10, 2009



(4) Porto's SEAP

Main Actions and CO₂ Impact

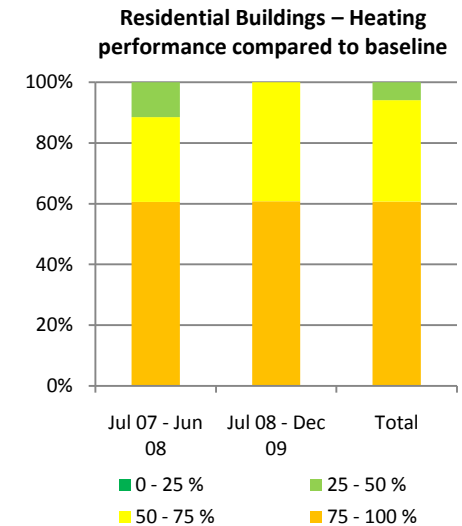
		Final energy Reduction [MWh]	Reduction of CO ₂ emissions	
			National [t CO ₂ /year]	Local [t CO ₂ /year]
Supply	Shift from electricity to natural gas for heat uses (cogeneration incl.)	75 400	-	49 700
	Solar DHW	38 300	-	17 400
	Valorisation of urban waste		-	46 000
Demand	Buildings	265 980	243 770	124 950
	Mobility and Transports (biofuel included)	520 900	49 700	99 020
	Other	21 000	9 260	10 280
	Energy use growth for the period	-121	-	-24 740
Total		800 240	302 730	322 610



Observatory for Energy and Environment

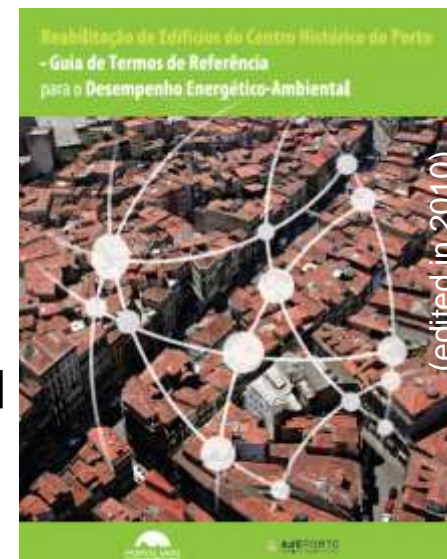
Sustainability of Porto's building

- Following online the energy performance of every new/rehabilitated building in Porto
- Analysing the implementation of EPBD related national regulations at the permitting stage
- Leading to a new set of Porto Municipal policies/rules to promote and incentivise voluntary actions and good practices by developers and designers in the new and rehabilitated buildings

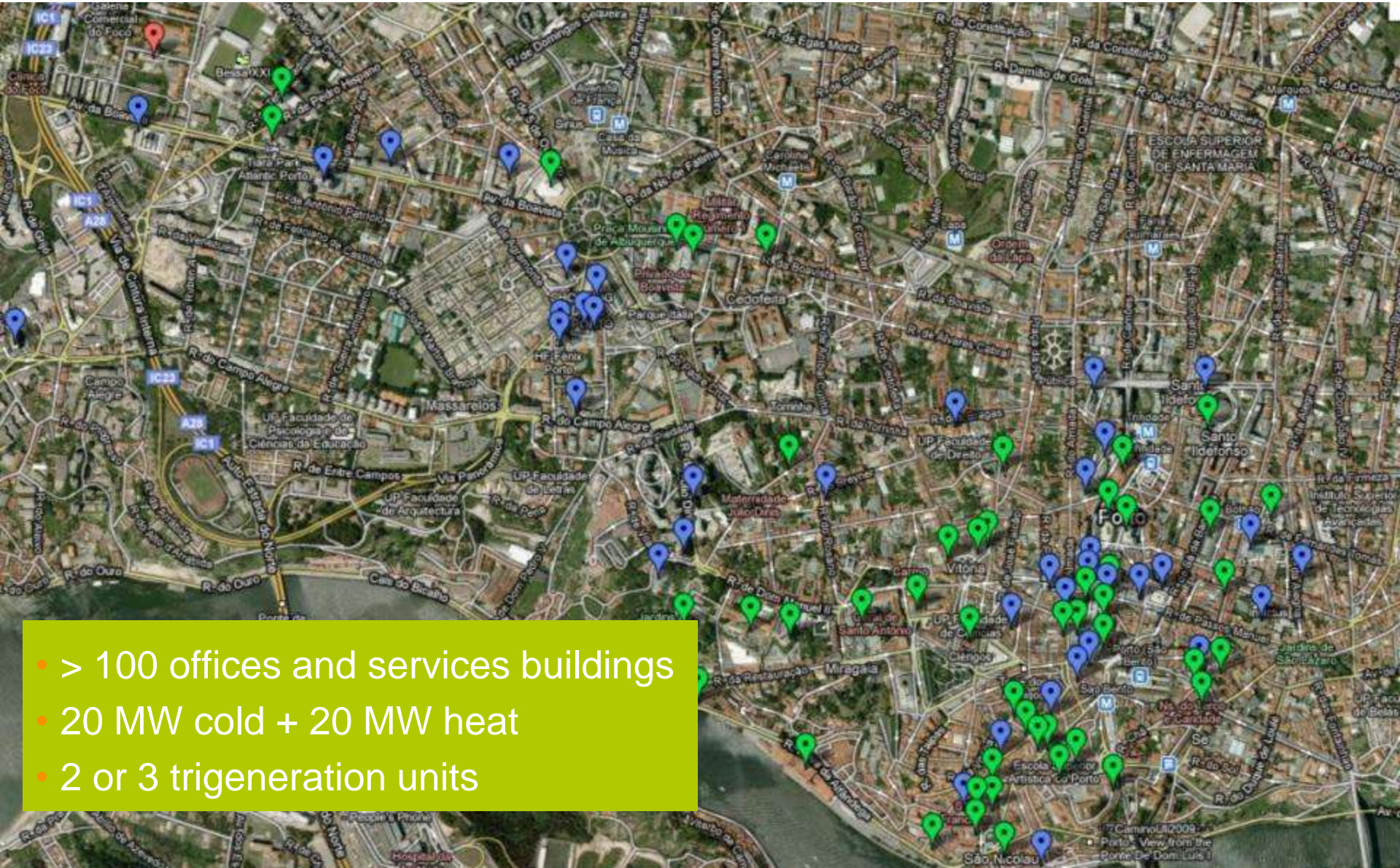


Guidelines for the Energy Efficient Rehabilitation of the Porto's Historical Centre (World Heritage)

The rehabilitation of buildings in historical centres, condition of their vitality, faces two challenges: adequacy to the nowadays standards of comfort and habitability while preserving the architectural and cultural identity and values



RUTE – Urban Heating and Cooling Network



- > 100 offices and services buildings
- 20 MW cold + 20 MW heat
- 2 or 3 trigeneration units

Solar thermal systems in social housing

- 3 neighbourhoods
- 1242 families
- 4.000 m² of solar panels
- > 60% of DHW needs from the Sun





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