



Energy Wise
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How an urban district can act as a carbon sink?



6Aika

Vipuvoimaa
EU:lta
2014–2020



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Energy Wise Cities project is looking for new ways to improve **buildings'** energy efficiency and **regional** energy systems



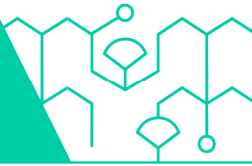
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VALONIA 

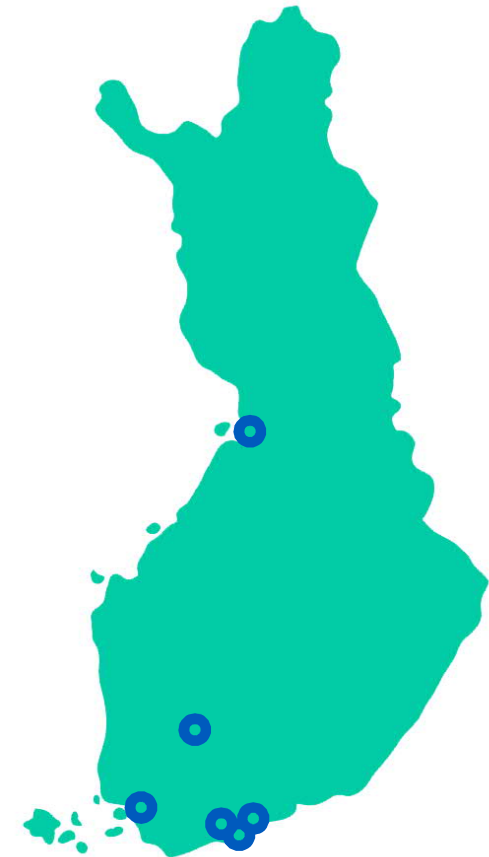


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Six largest cities of Finland
working closely together:
Oulu, Tampere, Turku,
Vantaa, Espoo, Helsinki

Accompanied by Valonia
and Ecofellows Ltd.





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Euroopan unioni
Euroopan aluekehitysrahasto



Uudenmaan liitto
Nylands förbund

Budget 3,3 million euros

Funded by ERDF (European
Regional Development Fund)



Six largest cities of Finland – Service Buildings

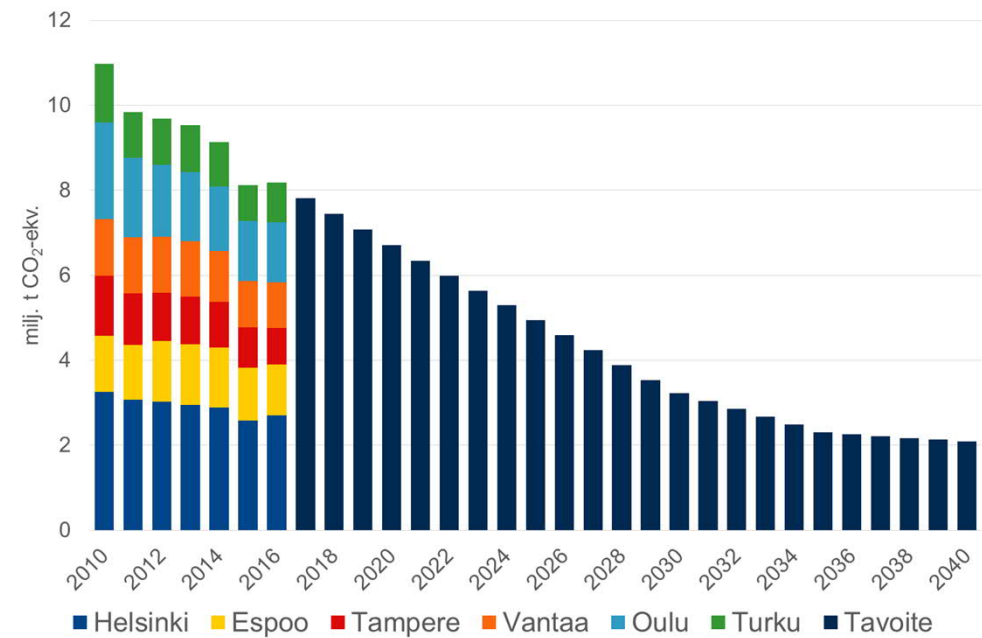
5200
buildings

7 million
m2 (gross)

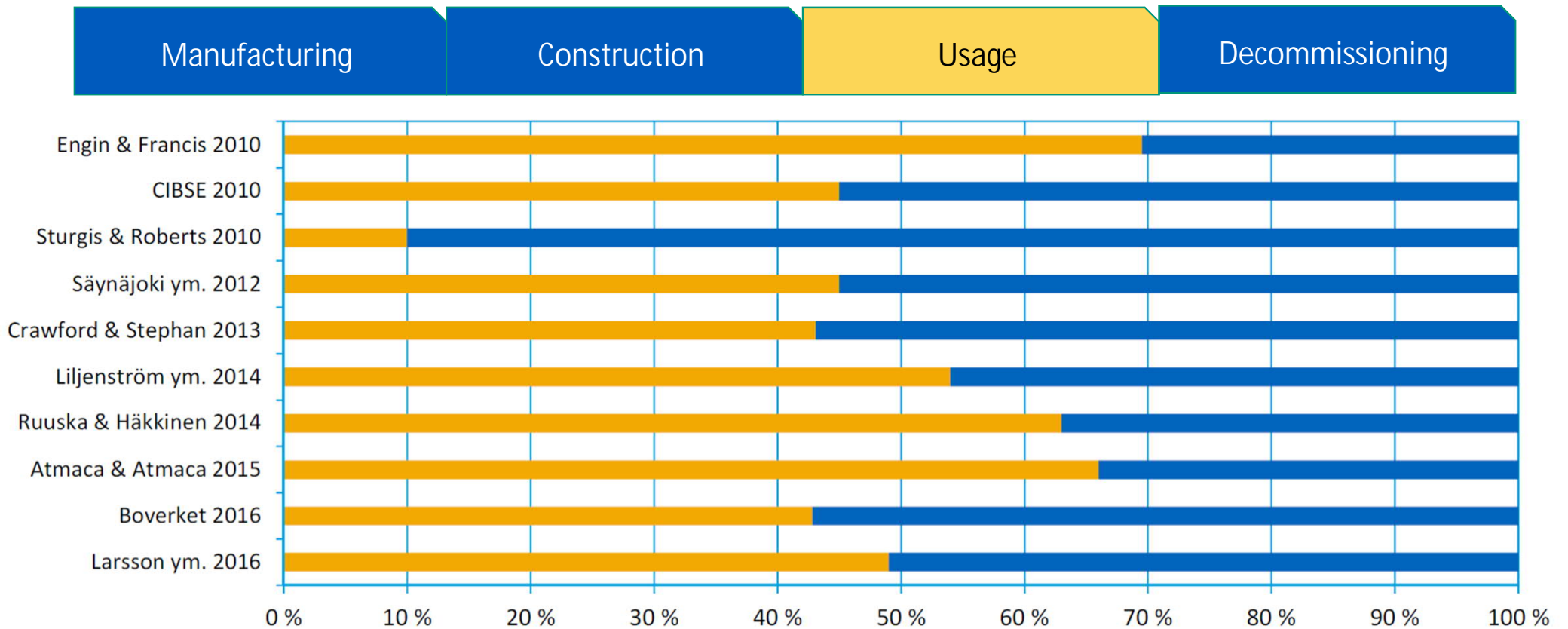
100
M€/a
for energy &
water

500
M€/a
for
investments

- CO2 targets
- Municipal service buildings
- 30 % emissions energy related



Research outcomes for emission distribution



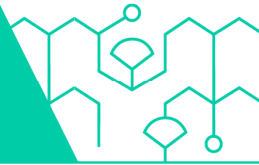


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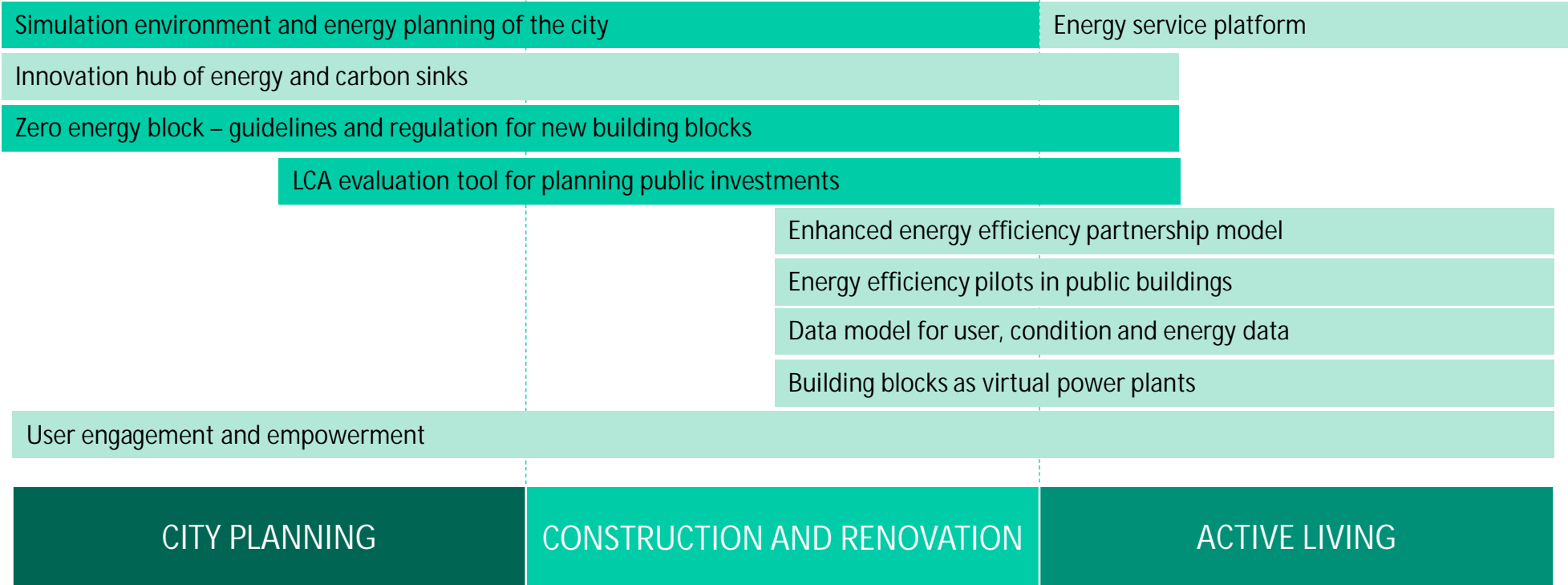
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Energy Wise Cities is part of city development from A to Z



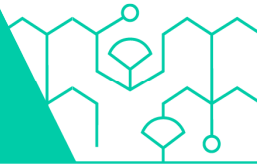


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Energy Wise Cities is part of city development from A to Z

Simulation environment and energy planning of the city

Energy service platform

Innovation hub of energy and carbon sinks

Zero energy block – guidelines and regulation for new building blocks

LCA evaluation tool for planning public investments

Enhanced energy efficiency partnership model

Energy efficiency pilots in public buildings

Data model for user, condition and energy data

Building blocks as virtual power plants

User engagement and empowerment

CITY PLANNING

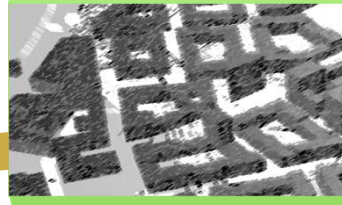
CONSTRUCTION AND RENOVATION

ACTIVE LIVING



1) Block of Buildings

City 3D-model



Block level
dynamic
modelling

Block-level
data of
energy,
emissions and
costs

2) Energy system

Hourly data
of block-level
energy
prosumers

District-level
dynamic
energy system
modelling

District-level
data of
energy,
emissions and
costs

3) Visualisation

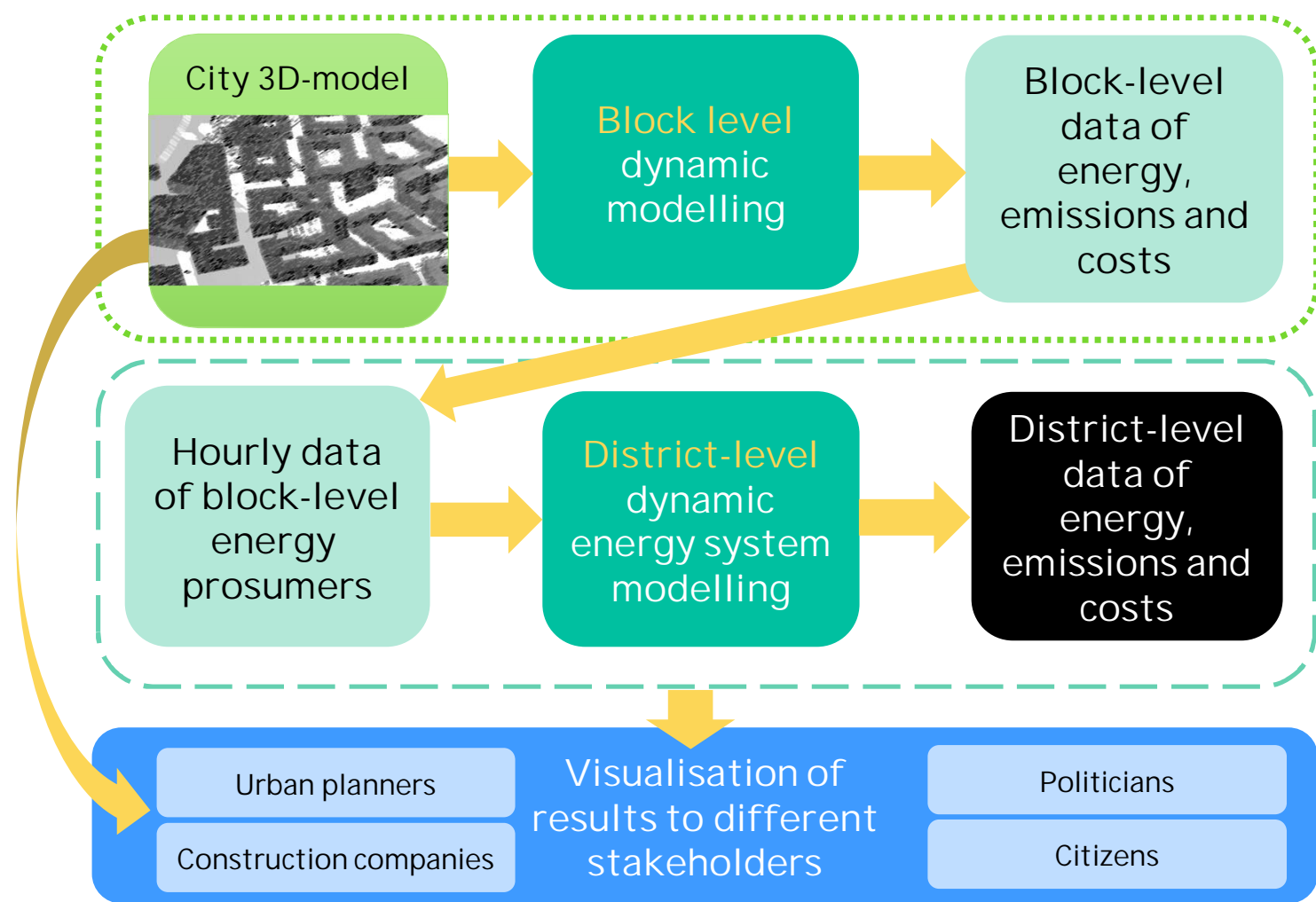
Urban planners

Construction companies

Visualisation of
results to different
stakeholders

Politicians

Citizens



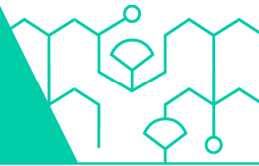


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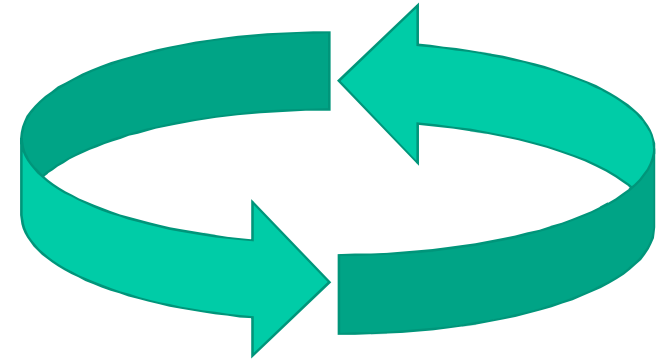


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Carbon footprint and life cycle thinking

To build new or to renovate?

(When buildings and blocks are turned more energy efficient, the carbon footprint and life cycle thinking during the planning and building phase becomes emphasized.)





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The best solutions do not need to be costly

Energy efficiency as a service

Adaptive spatial planning

Energy efficient design



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Results

The results of the Energy Wise Cities project will have an impact in the development of intelligent solutions and global business possibilities.





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The actions taken in the project will have a **significant impact** on the achievement of **global climate goals**

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