

IEA-EBC Annex 63: Implementation of Energy Strategies in Communities
 IEA-EBC Working Group on Cities and Communities

IEA EBC communities related activities



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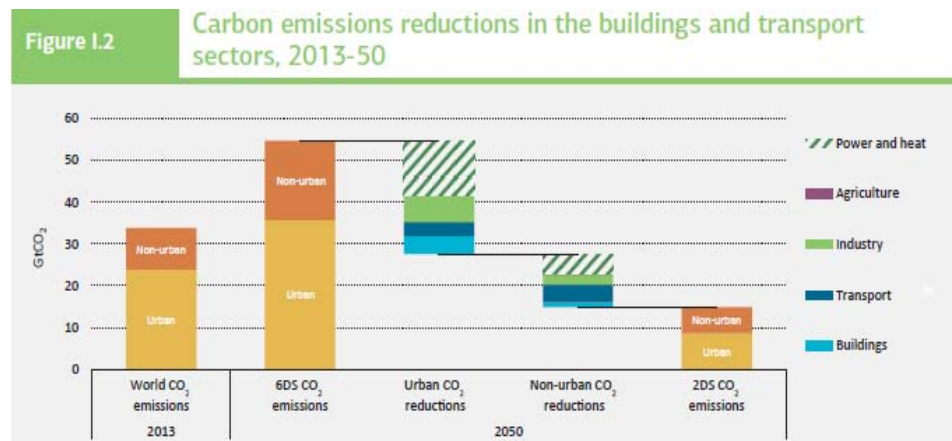
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1

“Cities are at the heart of the decarbonisation effort”

(IEA Energy Technology Perspectives, 2017)



- Power&Heat
- Agriculture
- Industry
- Mobility
- Buildings

2/3 Urban:

→ Tasks of Urban Planning

→ Community Approach

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2

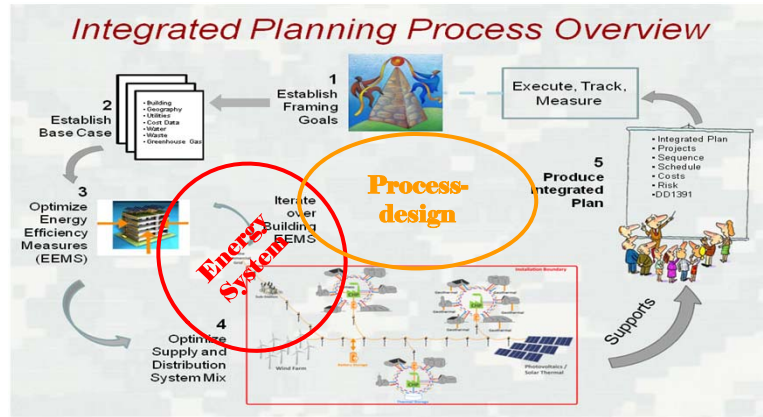
Community Approach

Community:

- Scale for investment (buildings, energy system, ...)
- Scale for decision making

Integrated Energy Planning
 EBC Annex 51: Guidebook on Successful Urban Energy Planning
 ISBN: 978-3-8167-9122-5

Energy Planning & Urban Planning
 EBC Annex 63: Implementation of Energy Strategies in Communities



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3

Annex 63 Objectives

“Give recommendations on procedures for implementation of optimized energy strategies at the scale of communities”

1. Develop recommendations for effective translation of a city’s energy / CO2 goals to the community scale
2. Develop recommendations for optimization of policy instruments for the integration of energy / CO2 goals into common urban planning processes
3. Develop new techniques for stakeholder cooperation along with holistic business models involving a wide range of stakeholders
4. Devise methods for the monitoring and evaluation
5. Involve cities / urban planners in order to integrate energy planning in urban planning procedures

→ More energy in urban planning!

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4

Annex63: Implementation of energy strategies in communities



www.annex63.org

2014-2018 / 22 supporting cities, 19 organisations, 11 countries:

Salzburg, Vienna, Burlington, Guelph, London (Ontario), Toronto, Egedal, Middelfart, Roskilde, Skive, Lille, Strasbourg, Aachen, Ludwigsburg, Karlsruhe, Bottrop, Kitakyushu, Yokohama, Maastricht, Oslo, Bergen, Basel, Minneapolis

SIR, NRCan, Aalborg University, Cenergia, DTU, EIFER, B.&S.U., DV, Fraunhofer Institut, IREES, RWTH Aachen, SEAI, Osaka University, ZUYD University, NTNU, SINTEF, ENCO, Intep, University of Minnesota

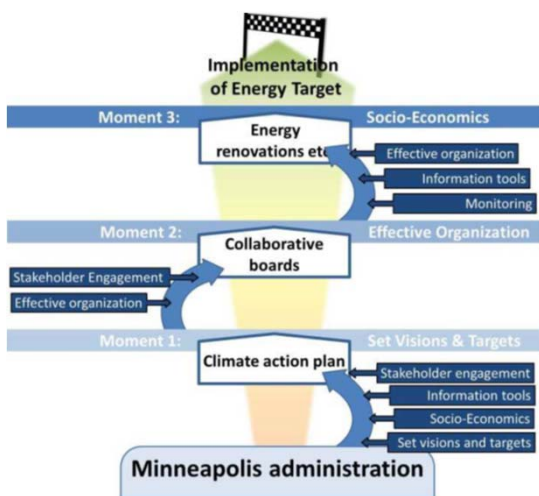
Austria, Canada, Denmark, France, Germany, Ireland, Japan, Netherlands, Norway, Switzerland, USA

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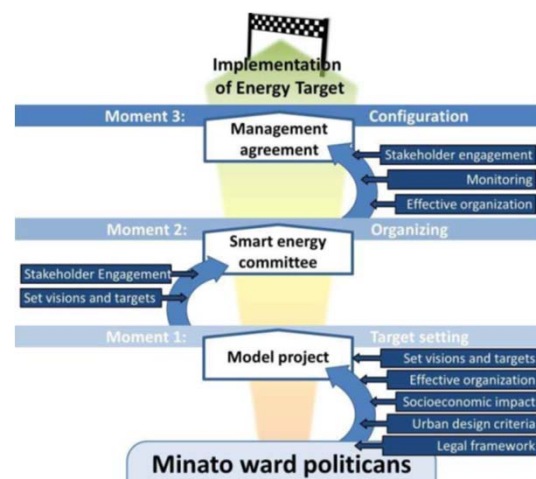


5

Case studies



Process diagram Minneapolis, USA (DTU & AAU, 2017)



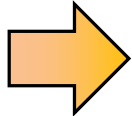
Process diagram Minato Ward, Tokyo, JP (DTU & AAU, 2017)

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6

Strategic measures



| | |
|---------------------------|--|
| Strategic Measures | Set Vision and Targets |
| | Develop Renewable Energy Strategies |
| | Make Full Use of Legal Frameworks |
| | Design of Urban Competition Processes |
| | Make Use of Tools Supporting the Decision Making Process |
| | Implement Monitoring of Energy Consumption and GHG Emissions |
| | Stakeholder Engagement & Involvement |
| | Include Socio Economic Criteria |
| | Implement Effective and Efficient Organisational Processes |

Regarding

- Entry point of planning process
- Different scales
- Function (Enable, Encourage, Enforce)

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7

Self-Assessment

| City x | | | | | | | | | |
|--------------------------------------|------------------------|-------------------------------------|-----------------------------------|---------------------------------------|--|--|--------------------------------------|---------------------------------|--|
| 16.10.2017 | | | | | | | | | |
| 2 Experts | | | | | | | | | |
| Status-Quo | Set Vision and Targets | Develop Renewable Energy Strategies | Make Full use of Legal Frameworks | Design of Urban Competition Processes | Make Use of Tools Supporting the Decision Making Process | Implement Monitoring of Energy Consumption and GHG Emissions | Stakeholder Engagement & Involvement | Include Socio Economic Criteria | Implement Effective and efficient Organizational Processes |
| Awareness | 3 | 3 | 2 | 3 | 2 | 3 | 2 | 1 | 1 |
| Available skills/knowledge/resources | 2 | 3 | 1 | 2 | 1 | 3 | 1 | 1 | 2 |
| Regular application | 1 | 3 | 1 | 2 | 1 | 3 | 3 | 1 | 1 |
| Quality of application | 1 | 2 | 1 | 2 | 1 | 3 | 1 | 1 | 1 |
| Efficiency of application | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 |
| Barriers and success factors | NA | NA | NA | NA | 2 | NA | NA | NA | NA |

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8

Develop renewable energy strategies

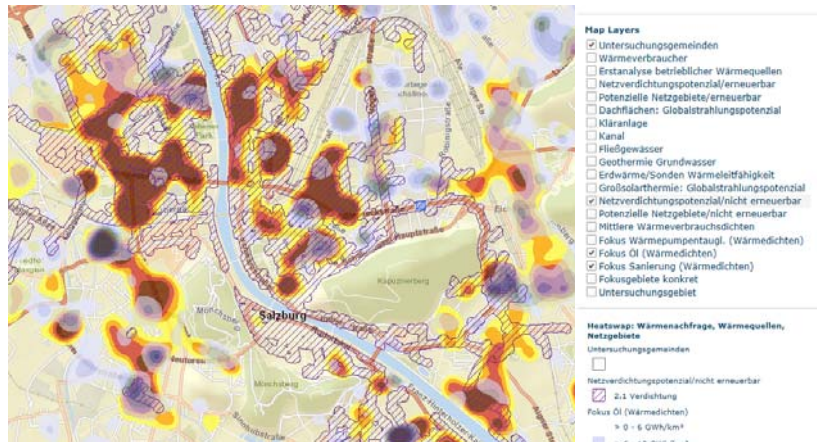
Heat maps build the ...

basis for legal binding regulations / spatial planning

basis for specific fundings

basis for urban heat-planning

basis for community-scale energy planning






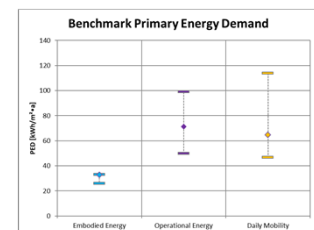
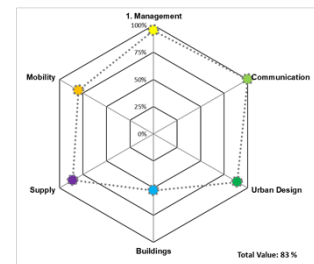
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9

Make use of Tools

| | | |
|---|---|--|
| City | Site | Building |
|  |  |  |
| QM for Cities | Site Certification | Building Labels |

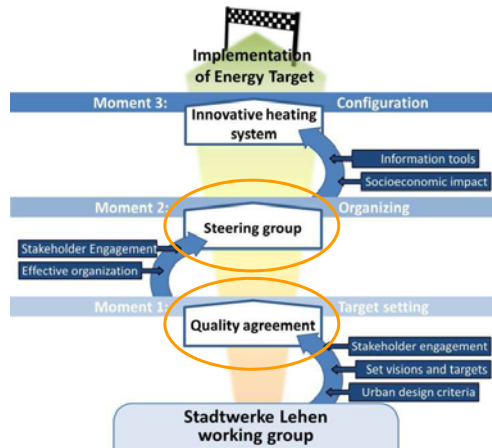


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10

Implement effective and efficient organizational processes



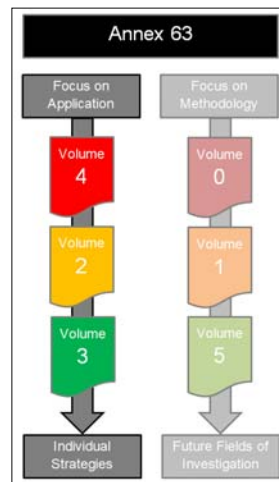
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11

Available Reports

Stakeholder support materials
Development of strategic measures
Application of strategic measures



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Documentation of workshops
Inventory of measures
Recommendations

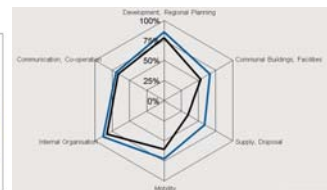
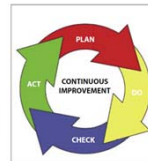
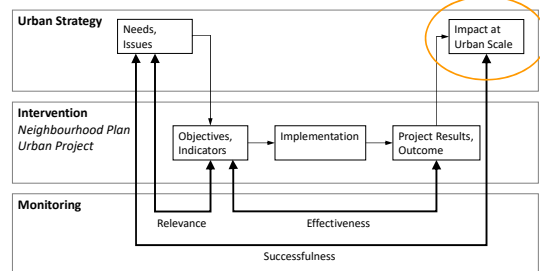
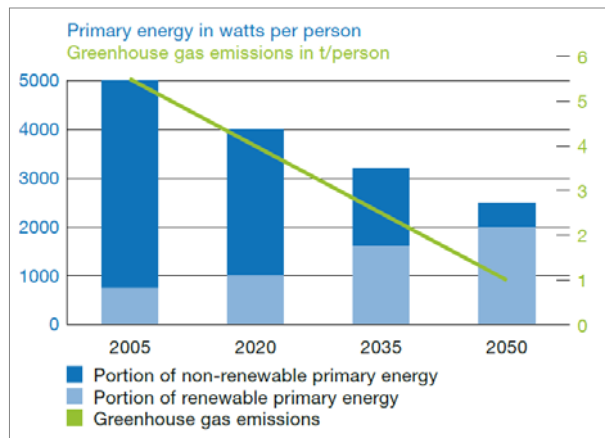


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12

Implement monitoring of Energy Consumption and GHG Emissions



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13

Conclusions

- Transformation of Energy System is a Challenge: Urban Planning & Energy Planning
- It's not only a technological issue, it's about the whole range of local policy
- A wide range of skills and knowledge is needed + a "common language" for better understanding each other
- "Mobilizing the urban sustainable energy potential requires strong support from national governments to local policy makers"
- Let's have a look on Cities' needs as an input for future research

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14

Working Group on Cities and Communities

- Idea to establish “Urban Issues” projects within existing IEA structure
- inspired by the work of the EBC TCP Annex 63
- identified need to assist cities bridge the gap between technical aspects such as efficiency of buildings, energy supply, storage and transport systems and non-technological aspects of the community

- ... create a **forum for exchange** on

technologies

- buildings
- renewable energy
- grids (heat, electricity)
- energy storage
- mobility - systems



but also

- smart cities
- (urban) planning processes
- urban governance
- organizational structures
- role of intermediaries
- social aspects
- co-benefits
- ...

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15

Objectives

- (1) assess and identify the needs of cities, their actors and associated stakeholders
- (2) generate appropriate non-technical ‘on demand’ input and service ideas for cities
- (3) identify and discuss bottlenecks and barriers for the transformation of cities’ energy and transport systems
- (4) discuss and provide results and (policy) recommendations on energy and transport systems
- (5) close the gap between cities and research

Facts

- 2018-2020
- > 10 countries
- > 20 experts (technology – planning)
- 5 TCPs

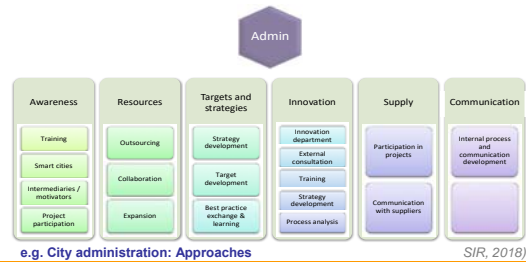
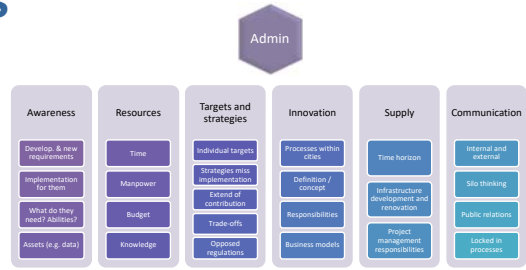
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16

Activities

- Cities' needs (Report)
- Subgroup 1: Decarbonisation Technologies
- Subgroup 2: Implementation Strategies
- Subgroup 3: Data



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17

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18