

POSSIBILITIES OF RENEWABLE ENERGIES APPLICATIONS ON THE BASE OF HUNGARIAN SAMPLES

IDEAS ON RENEWABLES IN CLIMATE-STRATEGIES OF MEDIUM-SIZED TOWNS

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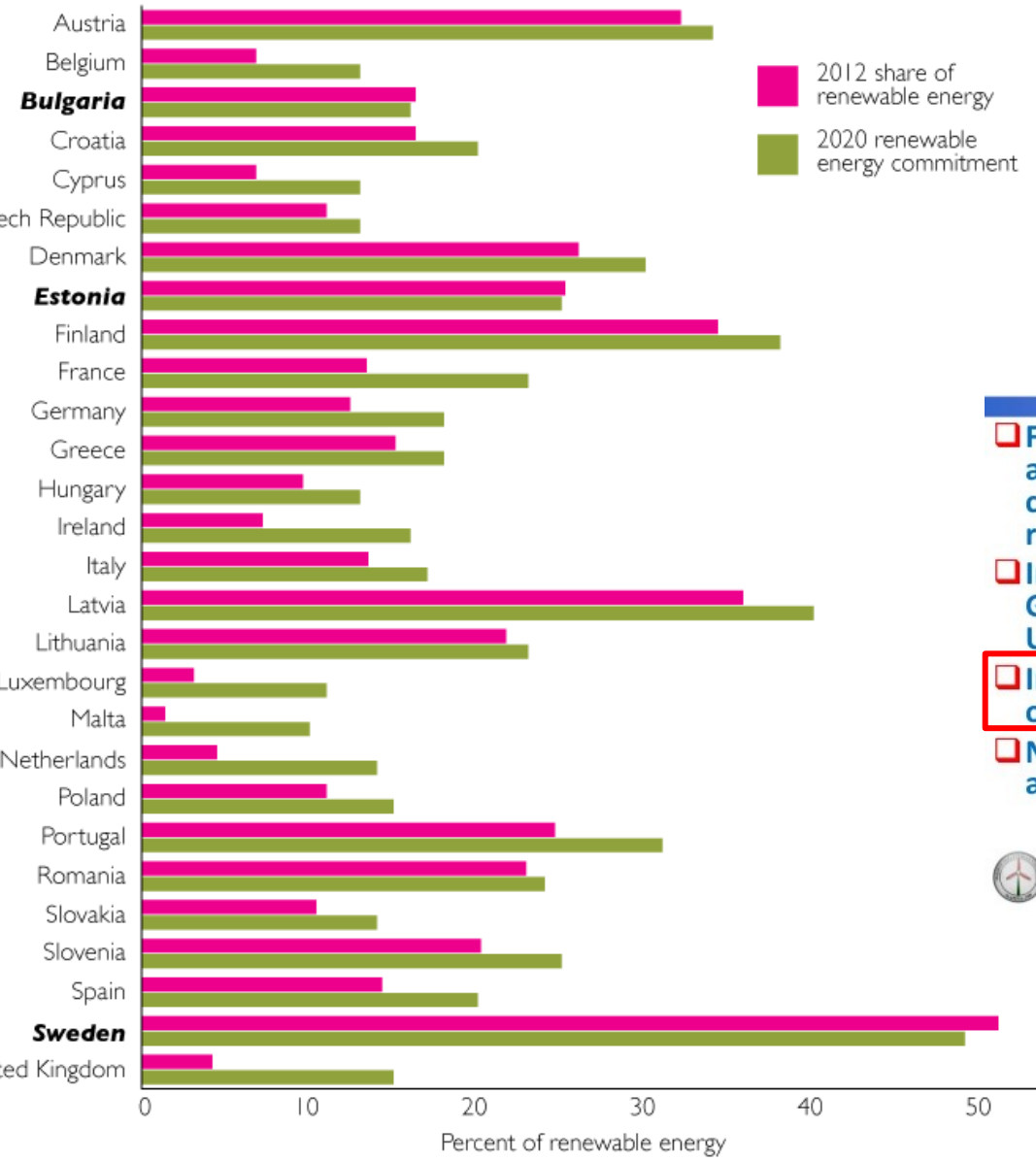
Starting points

- New environmental paradigm
- Impacts of climate change
- Adaptation and mitigation
- Local answers
- Renewable energy as a solution

Aims and methods

- Review the international results
- Analyse and compare the climate strategies of medium size cities in EU and Hungary
- Interviews with prominents
- Explore the possibilities of local climate protection focus on renewable energies

EUROPEAN UNION MEMBERS RENEWABLE ENERGY IN 2012 vs. 2020 COMMITMENTS



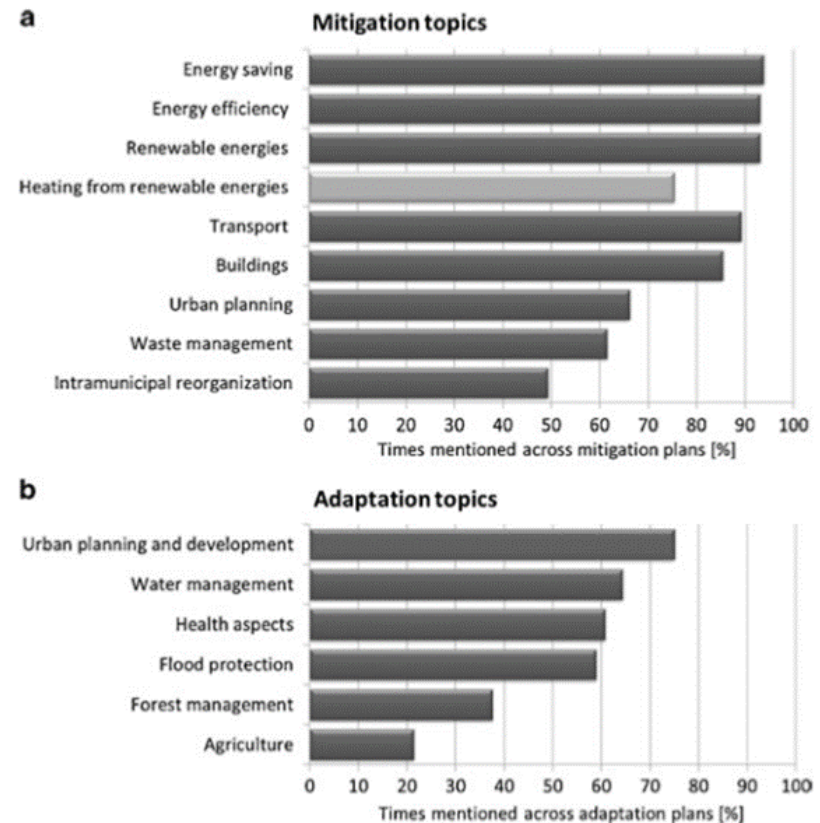
National Renewable Action Plan (NREAP) 2020

- ❑ For 2020 the European Union set the objective to achieve 20% of renewable energy in the total energy consumption; 20% energy efficiency increase and 20% reduction in greenhouse gases compared to 1990.
- ❑ In line with EU Directive 2009/28/EC Hungarian Government has approved the National Renewable Utilization Action Plan in 2010.
- ❑ In the NREAP Hungary undertook that **14,65% of its overall energy consumption will be produced by RES.**
- ❑ NREAP foresees **750 MW** inbuilt wind capacity and an annual electricity generation of 1,545 GWh within 2020.



Survey about local climate strategies in European cities by Reckien and his colleagues (2014).

- 200 cities - 11 countries...
- Have the cities got climate strategies?
- Aspects of mitigation
- Elements of adaptation



Topics of the mitigation and adaptation plans across Europe (%)



Main questions and answers

- Have the examined cities got climate strategies?
 - Are the strategies include mitigation plan or contain elements of adaptation?
 - What measures are mentioned and what commitments are present in these documents?
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- 65 % of 200 cities have mitigation plan.
 - All adaptation plans connected to mitigation documents.
 - There are significant differences between the countries.
 - Most of the plans can be found in the UK.
 - Settlement size is an important differentiating factor !

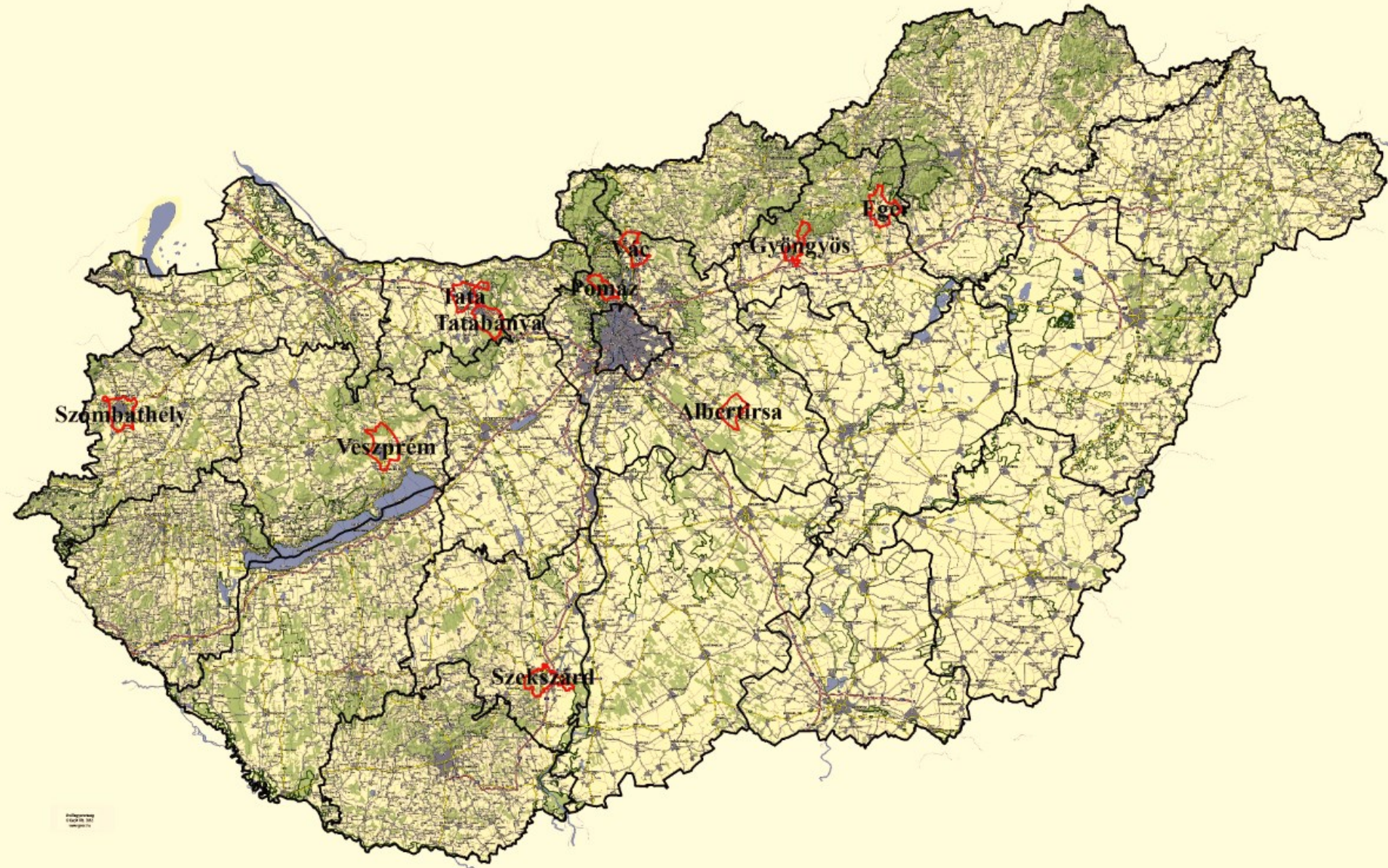
Parenthetic theory about the medium-sized cities

The medium-sized European cities with a population 50 000 - 250 000 are less dynamic and less innovative in the process of climate protection than larger cities!

- These settlements are closely located to the idyllic rural landscapes
- The typical settlement-environmental conflicts like traffic jams are not so dramatic.
- The available financial support for green development are generally more limited in the medium size cities.

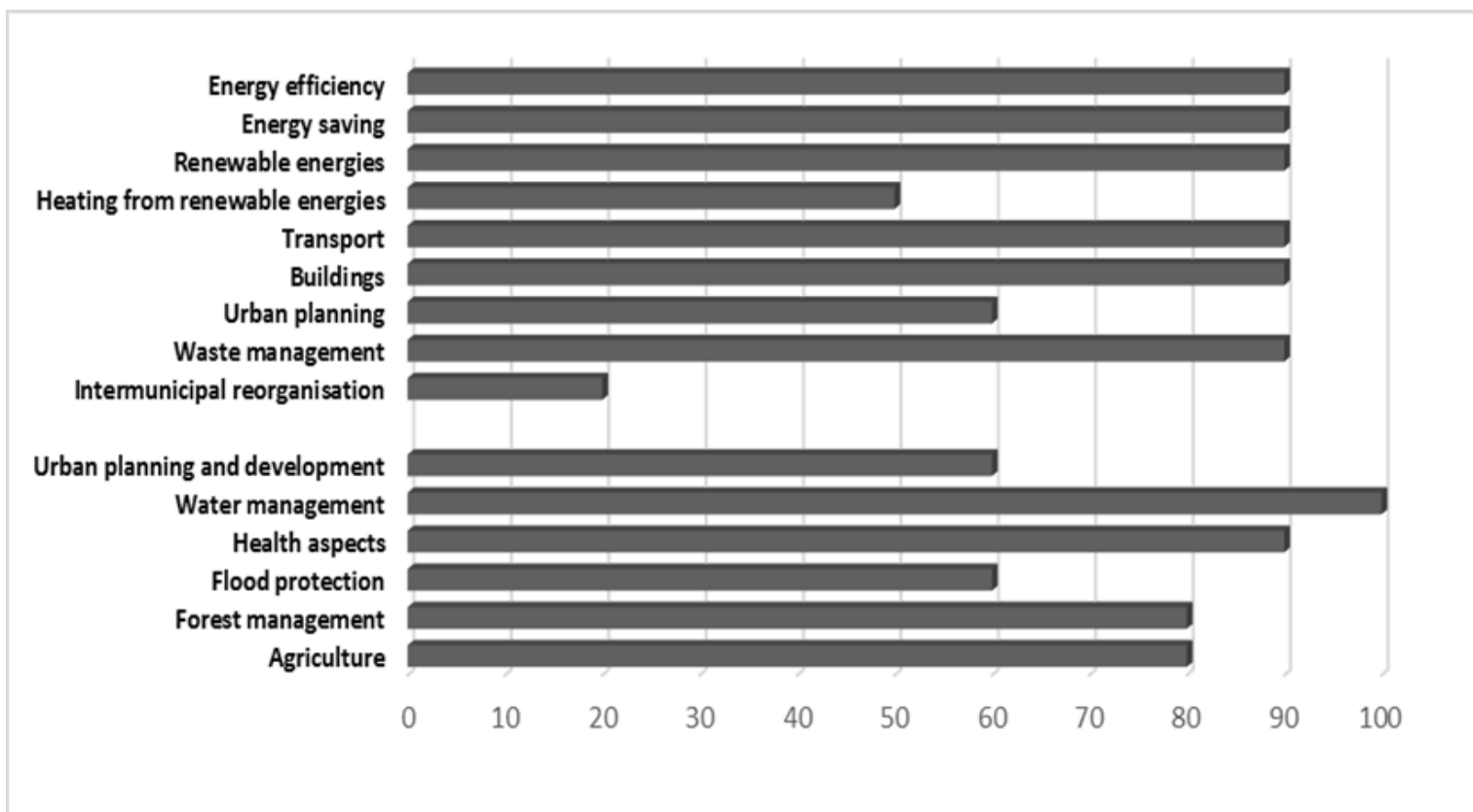


Studied settlements with climate strategies in Hungary



Climate strategies and issues of renewable energy in Hungarian cities

Topics of mitigation and adaptation (%) in the examined Hungarian climate strategies



Climate strategies and issues of renewable energy in Hungarian cities

The local climate protection efforts in Hungary are mainly embodied in the climate protection organizations:

- Climate Friendly Municipalities Association (18 members)
 - Energy Efficient Governments Association (24 members)
 - Hungarian Climate Alliance (13 NGO and 7 municipalities)
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- Until this time, only 10 medium size cities prepared public climate strategy.
 - Generally the strategies focus on energy management and efficiency.
 - Every strategy includes mitigation and adaptation topics.
 - The prevention is more important than adaptation.
 - The renewables are very important in theory, but the practice is still much weaker in Hungarian settlements.
 - Energy efficiency will have the most important role in climate protection in the future.



Interviews experiences

- „Renewables should be incorporated into the local development”
- „The most important keyfactors are is the responsibility and climate-consciousness”
- The medium sized cities have to implement a more innovative communication to generate climate-friendly local economy and lifestyle
- „Renewable energy has become more affordable in recent years. But! There is no consensus yet...
- „Rapid spread or prestige investments?”
- „The safest, cheapest and most environmentally friendly energy is the non-used energy”.
- „District-heating is a great possibility”

Final thoughts

- Nuclear power
- Lack of financial resources
- The renewables are suffering from a competitive disadvantage.
- Renewable energy use is a slower progress
- Energy saving may lead to financial saving.
- The renewables can play an important role in this process, but use of renewable depends on local conditions, because the opportunities are spatial-specific.
- Use of renewables is a pillar of climate protection, and also lead to economic benefits in local scale.

Thank you for your attention!



TATABÁNYA,

EGER,



SZOMBATHELY