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IN2RURAL

Connection between Green Energy and Rural Development

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ENERGY POLICY OBJECTIVES IN THE EUROPEAN UNION

Energy Strategy 2020	Energy Strategy 2030	Energy Strategy 2050
<ul style="list-style-type: none"> • Creating an energy-efficient Europe • Developing a Pan-European integrated energy market • Increasing energy safety • Extending the leading role of Europe in energy technologies and innovations • Strengthening the external connections of EU energy market 	<ul style="list-style-type: none"> • Decreasing the level of greenhouse gas emission • Disseminating the utilization of renewable energy • Energy efficiency • Reforming emission trade • Ensuring competition on integrated markets • Increasing the safety of energy supply 	<ul style="list-style-type: none"> • Re-structuring the energy system (savings, renewables, fossil fuels and nuclear energy in a new role, intelligent technologies, alternative fuels) • Re-planning energy markets (integrating local resources and centralized systems) • Mobilizing investors • Involving citizens • Extending partnerships
Sustainables: 20%	Sustainables: 27%	Sustainables: 75% ???

THE SUPPORT OF GREEN ENERGY PROJECTS IN RURAL POLICY

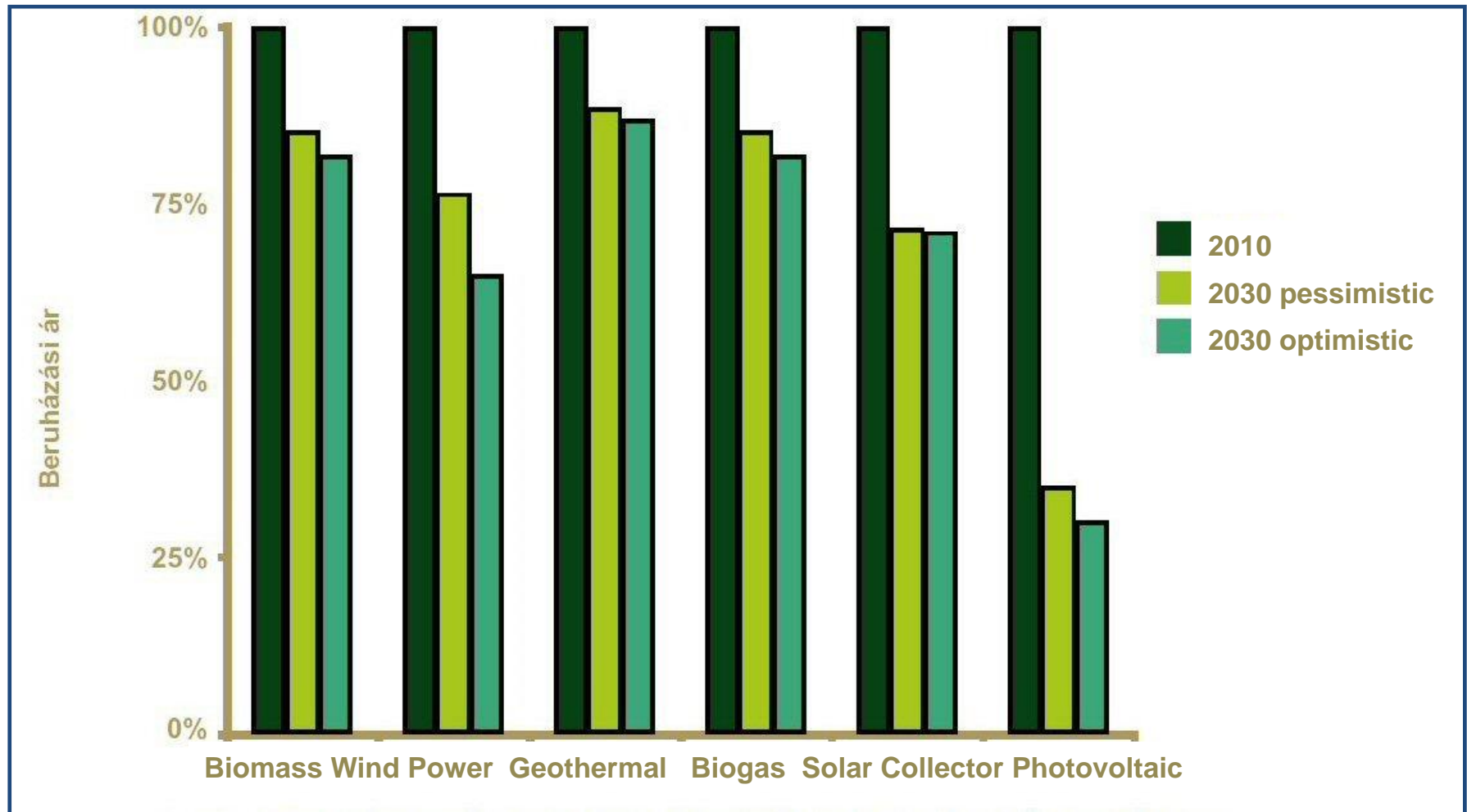
Rural Development Programme (RDP) 2014-2020

- **Focus area 5C:** Facilitating the use of renewable energy resources, by-products, wastes, residues and other non-food raw material for bio economic purposes
 - Low-capacity biomass power plants, biogas plants, composting plants.
- **Focus areas 6A & 6B:** Diversification, facilitating the establishment and development of SMEs, job creation, promoting local developments in rural areas
 - Business development based on local needs, economic diversification (common developments related to renewable energy supply based on biomass)

THE IMPORTANCE OF GREEN ENERGY PROJECTS IN RURAL AREAS WITH DIVERSE CONDITIONS

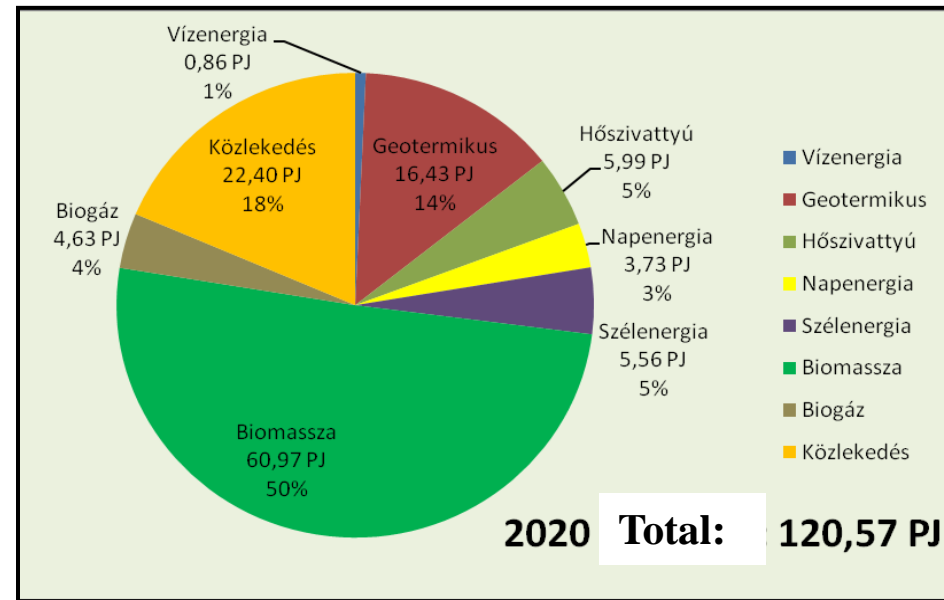
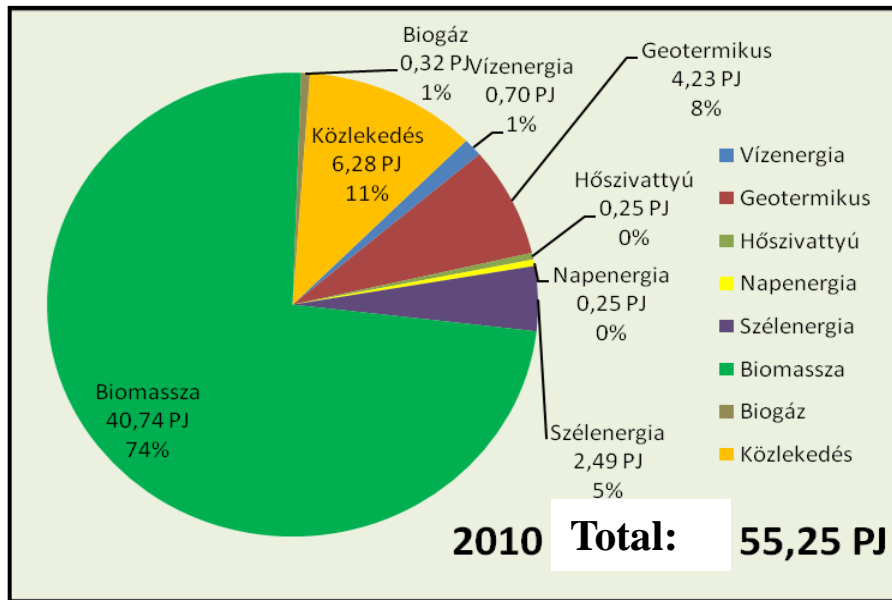
- **Geographic position** (the distance from settlement centres, interrelations, climatic conditions)
- **Natural resources** (the competitiveness of various renewable energy resources in the area)
- **Population and structure**(population density, the size of settlements, settlement arrangement)
- **Level of development in the area** (expertise, public utilities, the presence of potential investors, the role of governments)
- **Social background** (tradition, administration, adaptation capacity, cooperation tendency)

DECREASE IN INVESTMENT COST OF ALTERNATIVE ENERGY PRODUCING TECHNOLOGIES



Source: IEA és Energy Watch Group

RENEWABLE ENERGY CONSUMPTION IN HUNGARY (2010 & 2020 PLANNED)



Source: Renewable energy action plan of Hungary 2010-2020.

POSSIBLE REGIONAL DEVELOPMENT EFFECTS

- New source of income
- New job and project opportunities
- Innovation in products, processes and politics in rural areas
- Affordable energy
- Capacity building and community reinforcement

NEW SOURCE OF INCOME IN RURAL AREAS

- **Emergence in case of non-EU funded developments as well**
- **Increasing tax base**→ increasing standard of living in rural areas
- Rent for land owners
- Temporary and indirect job creation

NEW JOB AND PROJECT OPPORTUNITIES I.

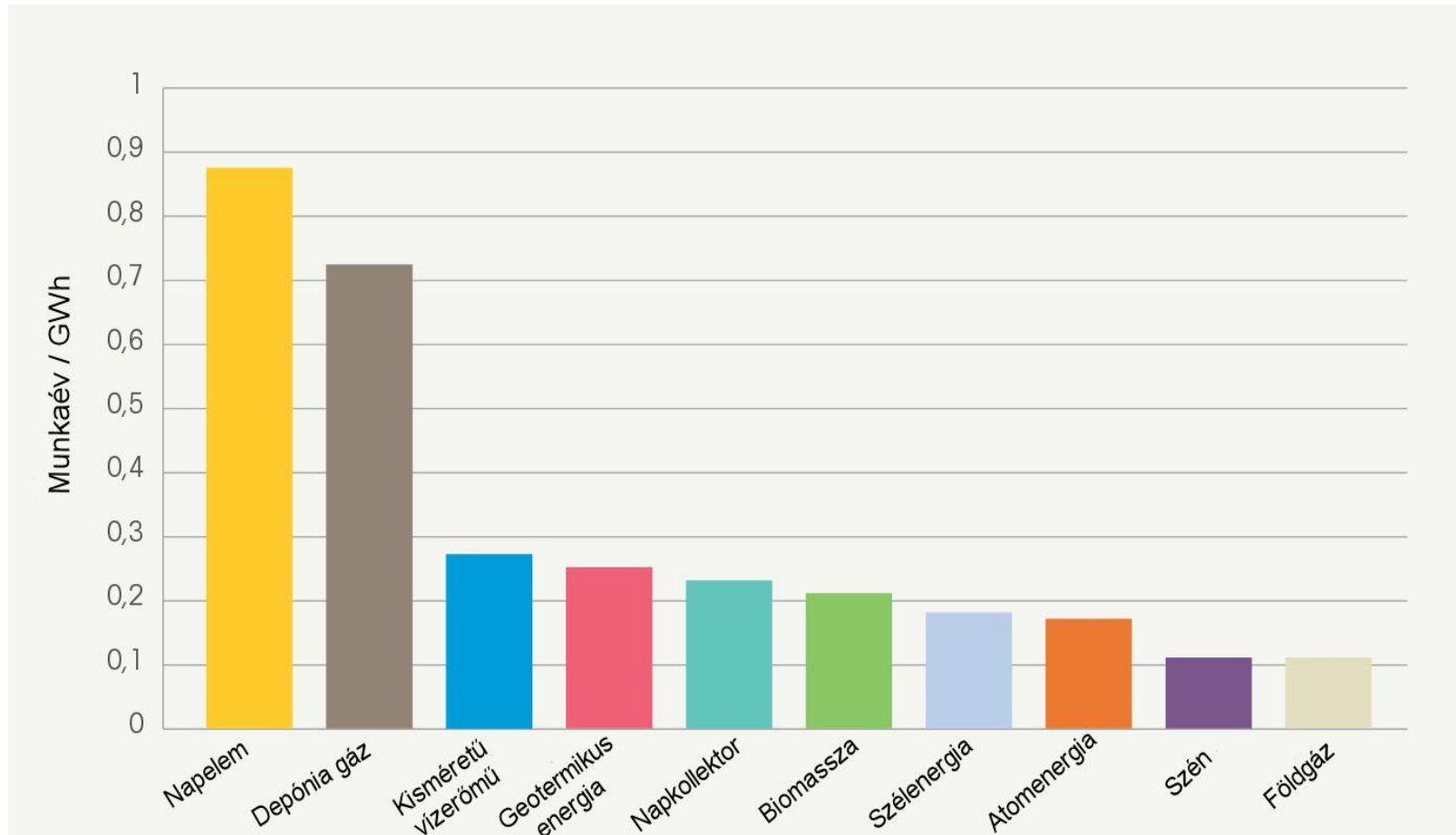
The importance of employment in the renewable energy sectors in the European Union and Hungary

Sectors	European Union (per capita)	Hungary (%, EU ratio)
Solid biomass	314 800	1,40
Wind energy	302 450	0,03
Solar energy	158 900	0,03
Bio-fuel	98 900	0,61
Heat pumps	96 200	0,10
Biogas	65 400	0,23
Low-capacity water power plants	42 850	1,05
Solar collectors	41 650	0,36
Waste	15 450	0,65
Geothermal energy	11 450	8,73
Total	1 148 050	0,61

Source: Eurobserv'er – The state of renewable energies in Europe 2014.

NEW JOB AND PROJECT OPPORTUNITIES II.

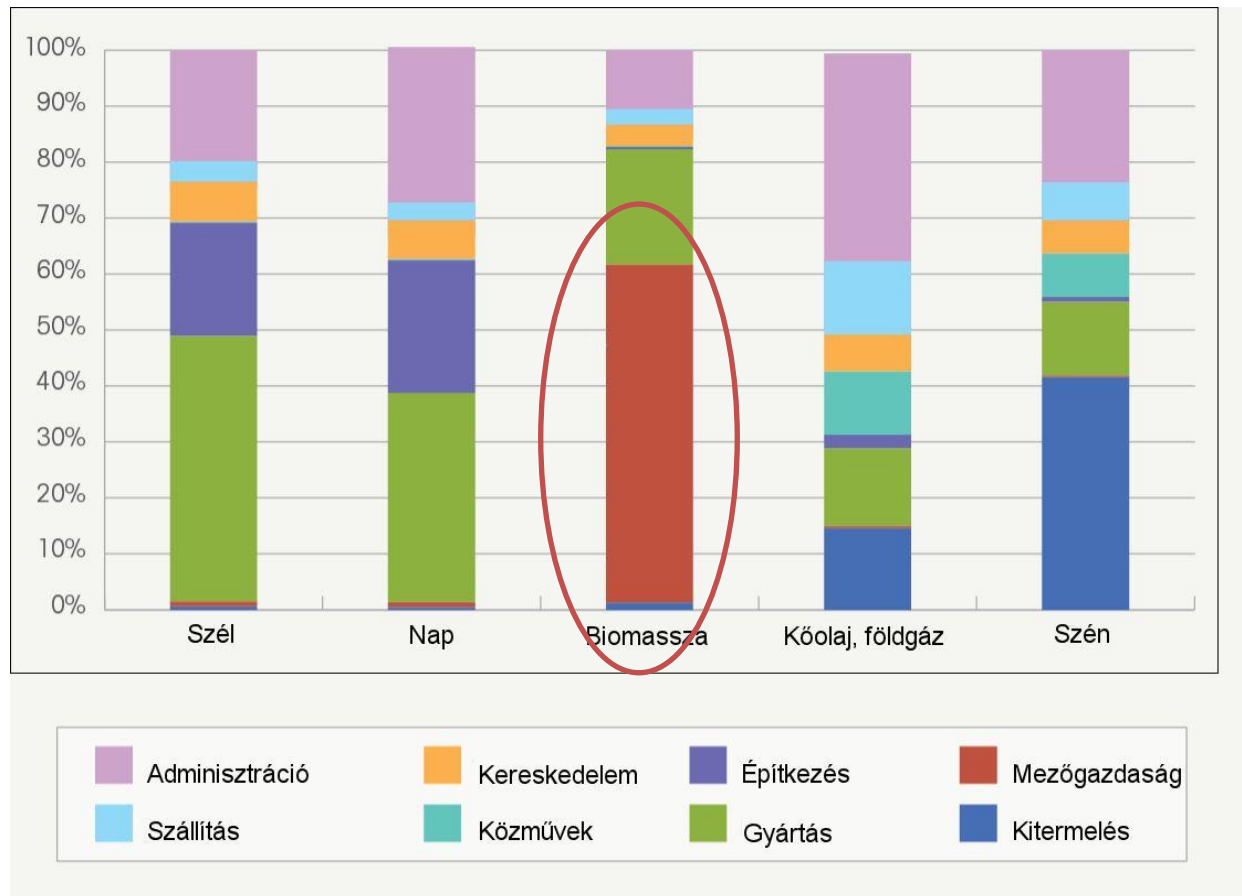
The specific effect of various energy resources on job creation



Source: IRENA 2011.

NEW JOB AND PROJECT OPPORTUNITIES III.

The job creating effect of resources related to different activities



Source: IRENA 2011.

INNOVATION IN PRODUCTS, METHODS AND POLITICS IN RURAL AREAS

- Recognition and dissemination of **new utilization forms, facilities**
- **Testing new technologies** in rural areas→ opportunity to join the innovation chain
- Formation of **new partnerships** (between local communities, local authorities, universities, research institutes, trading companies)
- **New solutions for new types of problems** by rural development professionals

CHEAPER OBTAINABLE ENERGY

- Investments achieved in **isolated systems**:
 - Developing countries
 - Remote areas
- **Benefits** for local actors
- Local actors as **producers**, not only as consumers

EFFECTS ON COMMUNITY DEVELOPMENT

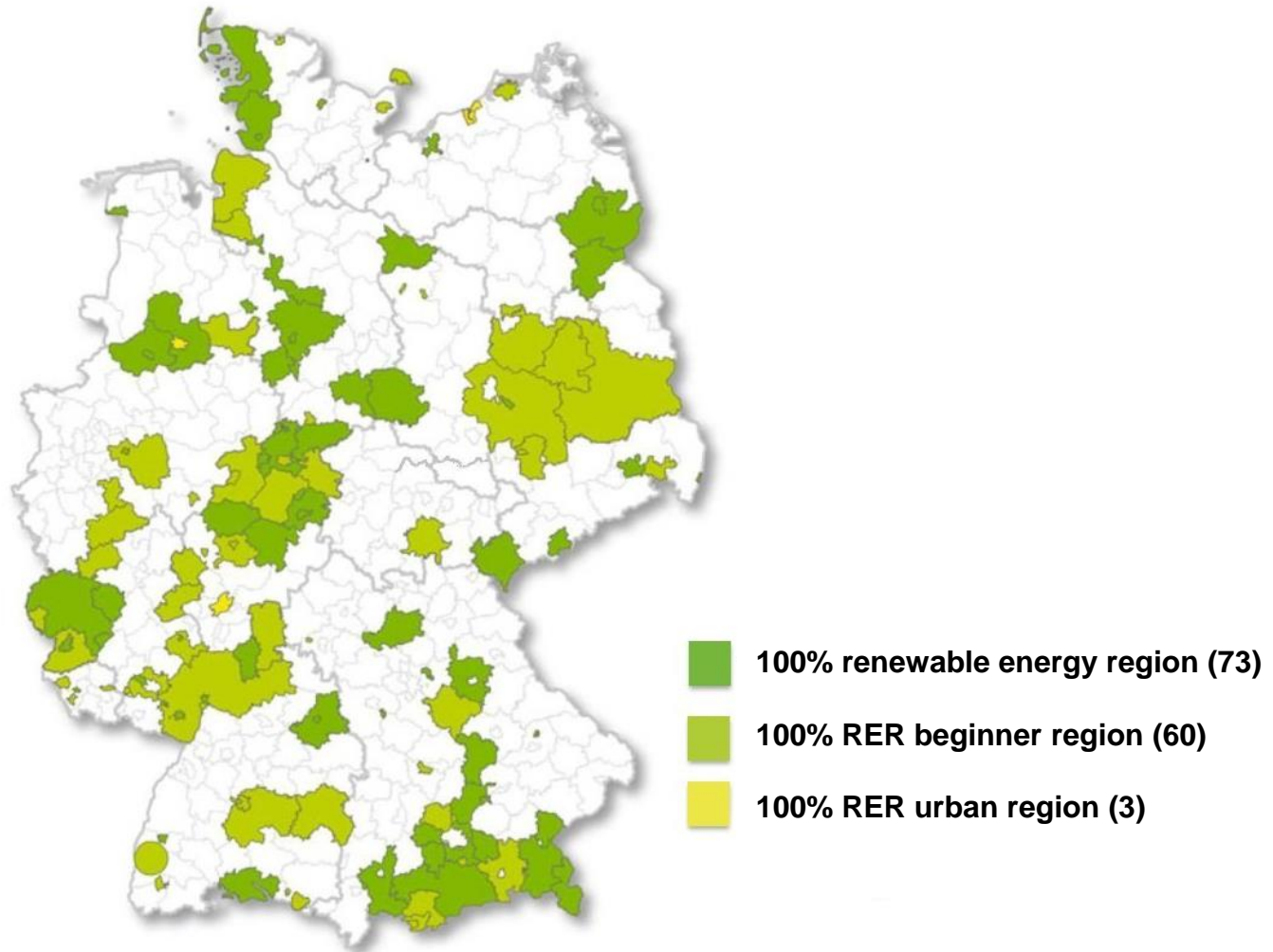
- **Energy management solutions** (heat supply, electricity production)
- Qualitative measures of **social utility** expressed in money terms
- **Decrease of energy addiction** of the community
- **The adaptation of traditional sustainability models** in modern rural environment
- **The role of civil societies** in the dissemination of renewable energy utilization

ASSUMED ROLES AND USED METHODOLOGY BY RENEWABLE ENERGY COMMUNITIES

Assumed roles	Used methodology
Economics development	Renewable energy projects and added value of knowledge
Sustainable land use	Investment planning
Sustainable agriculture, forestry and food industry	Meet the demand of bio energetic investments
Environmental protection	Decreasing local environmental effects
Territorial cohesion	Urban-rural solidarity
Flexibility	Üzemanyaghiány és –sebezhetőség elleni küzdelem
Local democracy	Increasing the competences of local democracy in energy matter4s
Local dynamics of sustainable energy production	Projects for communities and individuals

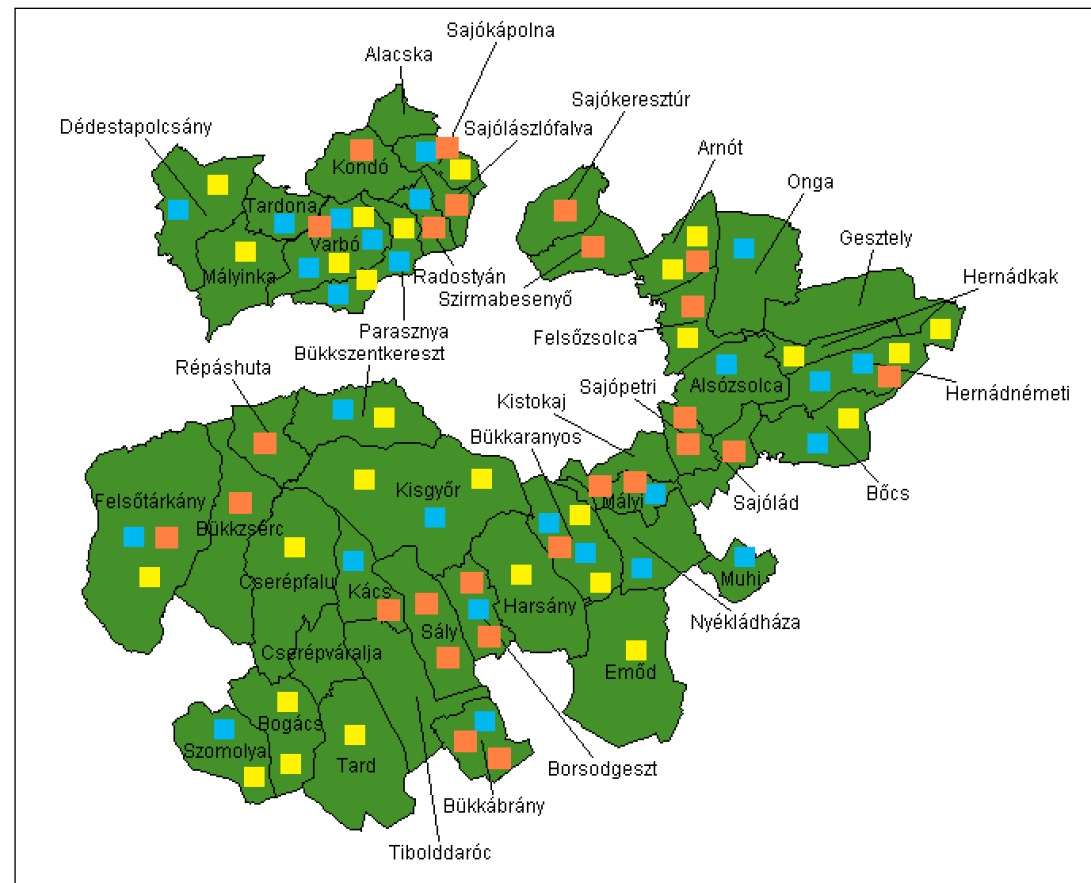
Source: www.100-res-communities.eu (2015)

100% SUSTAINABLE ENERGY REGIONS IN GERMANY



Source: Moser 2013.

THE SUPPORT OF SUSTAINABLE ENERGY RELATED PROJECTS IN LEADER PROGRAMMES



Source: Bükk-Társégi LEADER HACS, HVS – 2012.

CONCLUSIONS

- The **role of renewable energy utilization** is not yet key part of rural development, but will likely **to increase** in the near future
- **Higher-level** (EU, national) **targets** (energy poiltics, environment politics) often overshadow local commun interest
- Taking into account a wider range of **social-economic effects** for the sake of effective use of public funds
- **Long-term and complex** developments could be achieved (unflavourable effect of unsuccessful projects).
- A **extended role for local actors** in the implementation of investments, increasing the community building consequences of the sector

**Thank you for your
attention!**