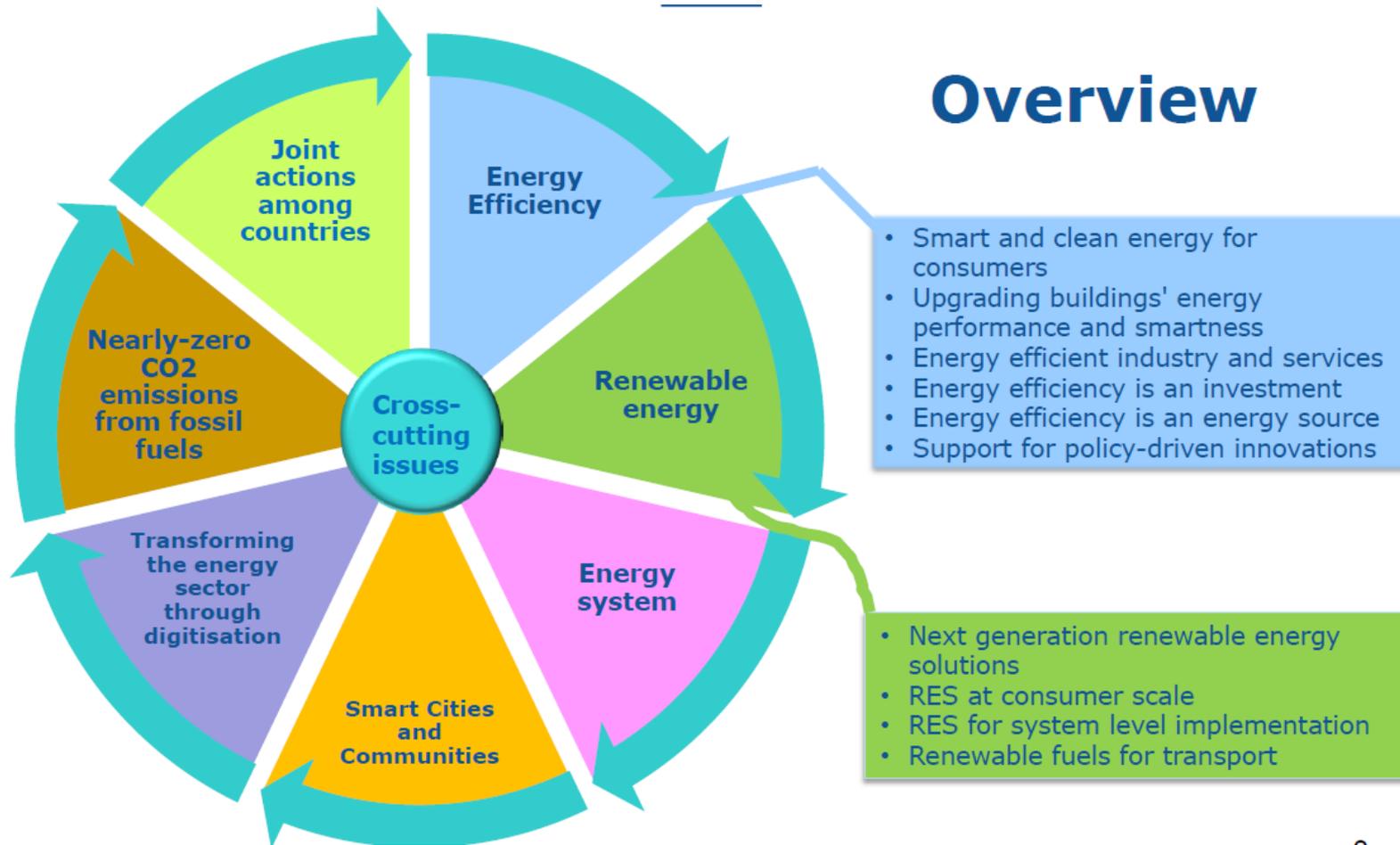
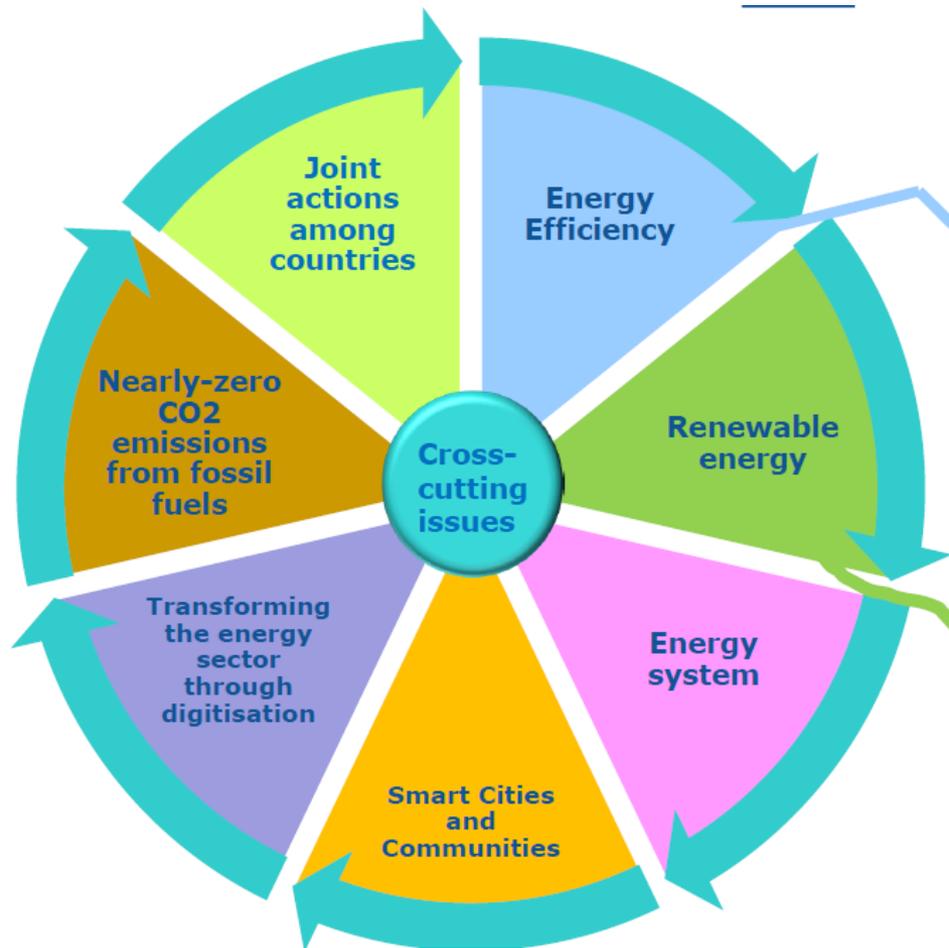


WP 2018-2020 – Future opportunities for geothermal and energy system integrated

Horizon 2020 WP 2018-2020



Horizon 2020 WP 2018-2020

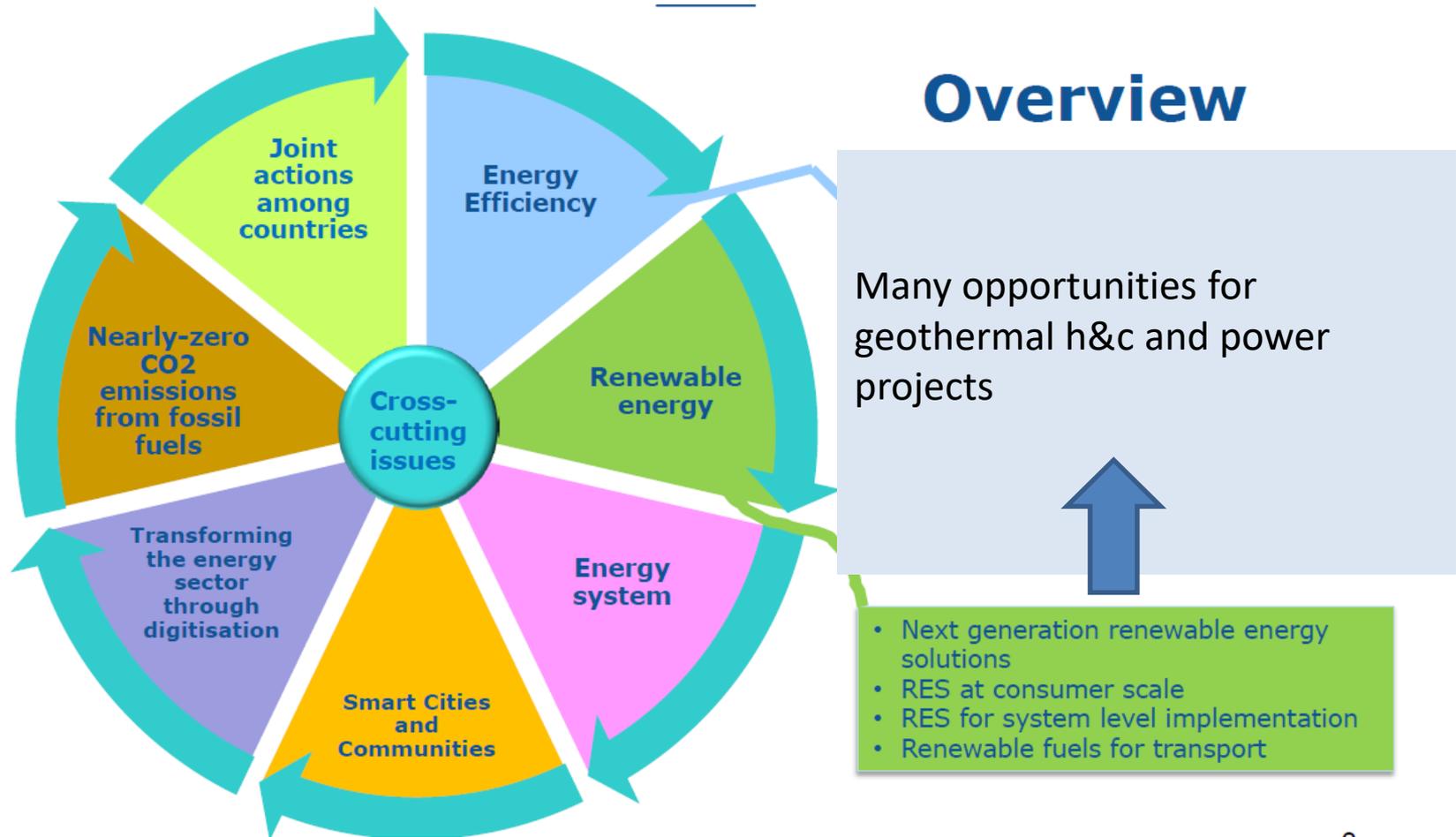


Overview

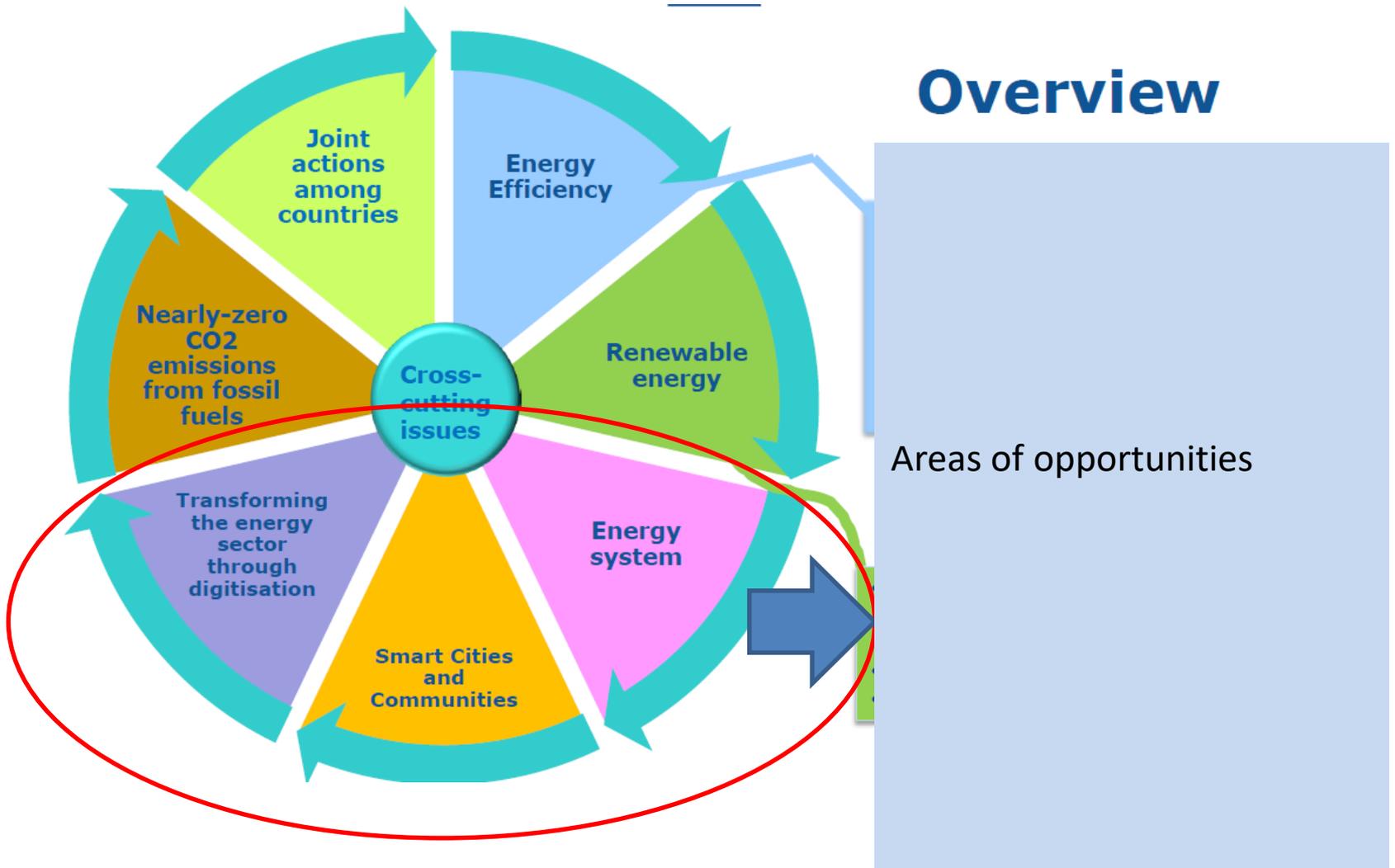
- Smart and clean energy for consumers
- Upgrading buildings' energy performance and smartness
- Energy efficient industry and services
- Energy efficiency is an investment
- Energy efficiency is an energy source
- Support for policy-driven innovations

Many opportunities for geothermal h&c projects

Horizon 2020 WP 2018-2020



Horizon 2020 WP 2018-2020



Draft WP 2018-2019-2020

- **ENERGY EFFICIENCY**

Upgrading buildings' energy performance and smartness

- **LC-SC3-EE-1-2018-2019-2020: Decarbonisation of the EU building stock: innovative approaches and affordable solutions changing the market for buildings renovation**
- LC-SC3-EE-2-2018-2019: Integrated home renovation services
- LC-SC3-EE-3-2019-2020: Stimulating demand for sustainable energy skills in the construction sector
- LC-SC3-EE-4-2019-2020: Upgrading smartness of existing buildings through innovations for legacy equipment
- LC-SC3-EE-5-2018-2019-2020: Next-generation of Energy Performance Assessment and Certification

Energy efficient industry and services

- LC-SC3-EE-6-2018-2019-2020: Business case for industrial waste heat/cold recovery
- LC-SC3-EE-8-2018-2019: Capacity building programmes to support implementation of energy audits
- Energy efficiency is an investment
- LC-SC3-EE-9-2018-2019: Innovative financing for energy efficiency investments
- LC-SC3-EE-10-2018-2019-2020: Mainstreaming energy efficiency finance
- LC-SC3-EE-11-2018-2019-2020: Aggregation - Project Development Assistance
- LC-SC3-EE-12-2019-2020: Innovation procurement for energy efficiency

Energy efficiency is an energy source

- LC-SC3-EE-13-2018-2019-2020: Enabling next-generation of smart energy services valorising energy efficiency as energy resource
- LC-SC3-EE-14-2018-2019-2020: Socio-economic research conceptualising and modelling energy efficiency and energy demand
- Support for policy-driven innovations
- LC-SC3-EE-15-2018: New energy label driving and boosting innovation in products energy efficiency
- LC-SC3-EE-16-2018-2019-2020: Supporting public authorities to implement the Energy Union

GLOBAL LEADERSHIP IN RENEWABLES

Next Renewable energy solutions

LC-SC3-RES-1-2019-2020: Developing the next generation of renewable energy technologies > Innovative materials for geothermal heat exchangers to maximize energy transfer and improve the overall conversion efficiency of a geothermal system

LC-SC3-RES-2-2018: Disruptive innovation in clean energy technologies

Renewable energy solutions for implementation at consumer scale

LC-SC3-RES-4-2018: Renewable energy system integrated at the building scale

LC-SC3-RES-5-2018: Increased performance of technologies for local heating and cooling solutions

LC-SC3-RES-6-2018: Demonstrate significant cost reduction for Building Integrated PV (BIPV) solutions

LC-SC3-RES-7-2019: Solar Energy in Industrial Processes

LC-SC3-RES-8-2019: Combining Renewable Technologies for a Renewable District Heating System

Renewable energy solutions for energy system level implementation

LC-SC3-RES-11-2018: Developing solutions to reduce the cost and increase performance of renewable technologies > d. Geothermal: Novel drilling technologies need to be developed to reach cost-effectively depths in the order of 5km and/or temperatures higher than 250°C

LC-SC3-RES-12-2018: Demonstrate highly performant renewable technologies for combined heat and power (CHP) generation and their integration in the EU's energy system > b. Geothermal: Allowing geothermal plants to respond cost-effectively to the heat and to the power demand of the network would facilitate the integration of RES in the energy system

LC-SC3-RES-13-2018: Demonstrate solutions that significantly reduce the cost of renewable power generation > b. Deep geothermal: Depending on the geological conditions, CO₂ and other gases (e.g. H₂S) emissions can be significant, current technologies for limitation of emission production and/or for gas condensation and re-injection have to be improved to reduce costs. In addition, turning emissions into commercial products would also contribute to cost reduction.

LC-SC3-RES-14-2019: Optimising manufacturing and system operation > • Geothermal fluids: Better understanding of the chemical and physical properties of these fluids, including super-hot and hot fluids, as transport media are necessary to optimize site development and operation.

LC-SC3-RES-15-2019: Increase the competitiveness of the EU PV manufacturing industry

LC-SC3-RES-16-2019: Development of solutions based on renewable sources that provide flexibility to the energy system

LC-SC3-RES-17-2019: Demonstration of solutions based on renewable sources that provide flexibility to the energy system

Market Uptake Support

LC-SC3-RES-28-2018-2019-2020: Market Uptake support > • Development of insurance schemes available in Europe and worldwide to mitigate risks, such as in geothermal drilling and offshore installation;

Horizon 2020 WP 2018-2020: Research priorities

A1 – Developing the next generation of renewable electricity and heating/cooling

Exploration	Enhanced exploration methods for deep geothermal reservoirs
Deep drilling	novel drilling technologies including non-mechanical methods
Production technologies	new materials and engineering of subsurface and surface equipment including mitigation and material selection for EGS and Super-hot Geothermal Systems.
Production & Engineering	Handling of natural geothermal fluids
EGS	Seismic monitoring and mapping of seismic events, stimulation indicators guidelines for preventing surface impacts
Generation & Operation	Efficiency of binary cycle power plants suitable for variable heat and electricity supply, including high temperatures and bottom cycle

Horizon 2020 WP 2018-2020: Research priorities

A2 – Close-to-market demonstration of competitive renewable electricity and heating/cooling technologies	
Operation & Production	Reliability of deep thermal loop technologies
Deep drilling	Optimized and reliable drilling and well completion
Production & Engineering	High temperature production pump, novel stimulation treatments and HT/HP tools
Generation & Operation	Flexible heat/cold and electricity supply from binary cycles including coupling of renewable energy sources
	Zero emission power plants and development of CO2 re-injection or sequestering-capturing in high CO2 content/systems.

Horizon 2020 WP 2018-2020: Research priorities

A3 – Support to market uptake of renewable electricity, heating and cooling technologies	
	Innovative Risk mitigation financial tools
	Integration of flexible generation from geothermal power in the energy sector
	Evaluate and mitigate socio-environmental impacts of geothermal operation with implementation of sustainability protocol for Geothermal utilization