



INNORENEW COE - Renewable Materials and Healthy Environments Research and Innovation Centre of Excellence - INNOVATIVE RENEWABLE MATERIAL USES LIVING LABORATORY (LL InnoRenew)

Funded by the Horizon 2020 Framework Programme of the European Union;
H2020 WIDESPREAD-1-2014 Teaming



Andreja Kutnar

University of Primorska

Andrej Marušič Institute

Faculty of Mathematics, Natural Sciences and Information Technologies

Faculty of Built Environment



H2020 Widespread - TEAMING instrument



Institution building!

- **Structural reform in research landscape** - New and strong knowledge institutions, able to become beacons in their own countries/ regions – at the heart of possible far-reaching reform processes
- **Centres of excellence able to** spur innovation and growth
- **New Institution, claiming a new position in the national and international science and innovation scene**
- **Ambitious long term ventures**



Coordinator: University of Primorska, Slovenia

Advanced partner: Fraunhofer Institute for Wood Research Wilhelm-Klauditz-Institut (WKI), Germany



Other partners:

- University of Maribor
- Institute for the Protection of Cultural Heritage of Slovenia
- Slovenian National Building and Civil Engineering Institute
- Pulp and Paper Institute
- EuroCloud Slovenia
- National Institute of Public Health
- Regional Development Agency of Ljubljana Urban Region



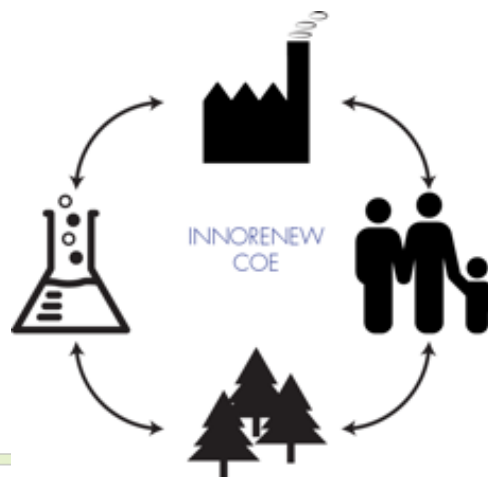
InnoRenew CoE - Main Objective



smart, sustainable, and modern built environments for all generations

Slovenia's transformation into a society focused on:

- **sustainability**
- **cyclical economy**
- **human well-being**
- **use of its renewable resources and assets**



InnoRenew CoE



Lead partner



ZAVOD ZA
GRADBENIŠTVO
SLOVENIJE
SLOVENIAN
NATIONAL BUILDING
AND CIVIL ENGINEERING
INSTITUTE



Inštitut za celulozo in papir
Pulp and paper Institute
Bogišičeva ul. 8, 1000 Ljubljana
tel.: +386 1 200 28 00
fax.: +386 1 426 56 39
email: info@icp-lj.si

Advanced partner



RRA LUR
regionalna razvojna agencija
ljubljanske urbane regije



Nacionalni inštitut
za javno zdravje



InnoRenew CoE

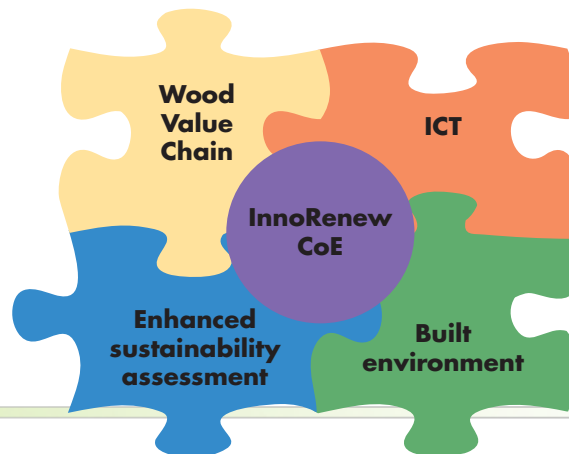


The InnoRenew CoE



will advance **scientific excellence in Slovenia** in wide range of fields related to renewable materials

wood materials, construction, **human health**, biology, polymers, **social sciences**, cultural heritage, **computing**, mathematics, psychology, kinesiology, modelling, simulation, **design**, logistics, deployment, risk-assessment, decision making, and **management**



Basic Objectives

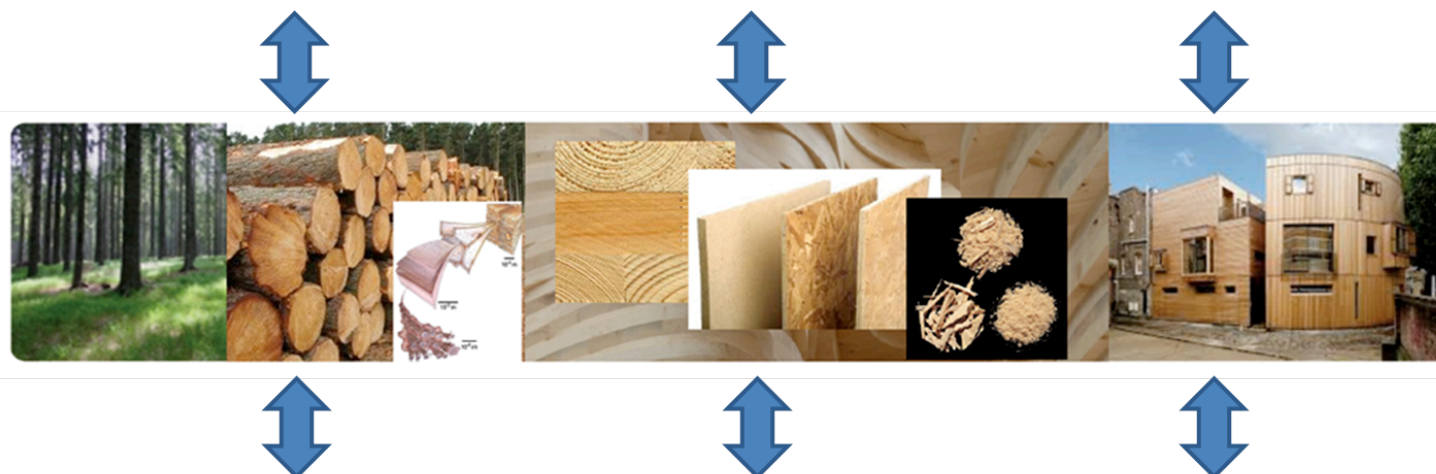


- Focus on improving the **quality and relevance** of scientific work related to *renewable materials*
- Work closely with **businesses and the public**
- Develop **new products, technologies, and services**
- Improve **industrial adoption of innovation**
- Improve the **acceptance and utilization** of fundamental and applied science in industry
- Provide **research, training**, and other support for professionals and the public
- Expand professional **expertise and public knowledge** about *renewable materials*
- To enhance **international cooperation and mobility**

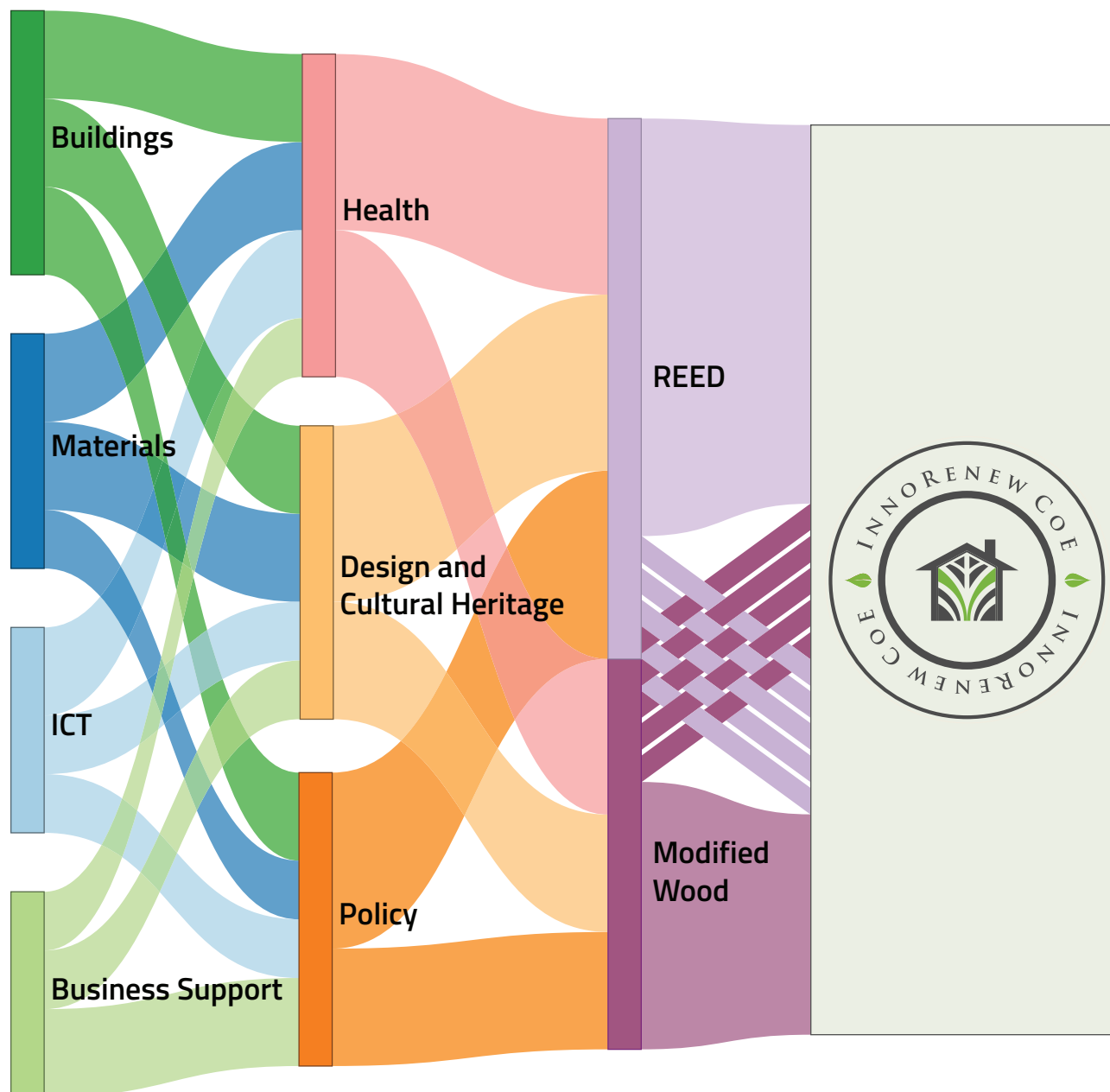
RIS3 – Slovenia and InnoRenew CoE



- Integration of the **wood chain in the design of homes and working environments of the future**
- **Sustainable biomass transformation and new bio-based materials, technologies for use of secondary and raw-materials, reuse of waste**



InnoRenew CoE RDI Plan



Interdependent research:
renewable materials,
sustainable building,
business support, and **ICT**

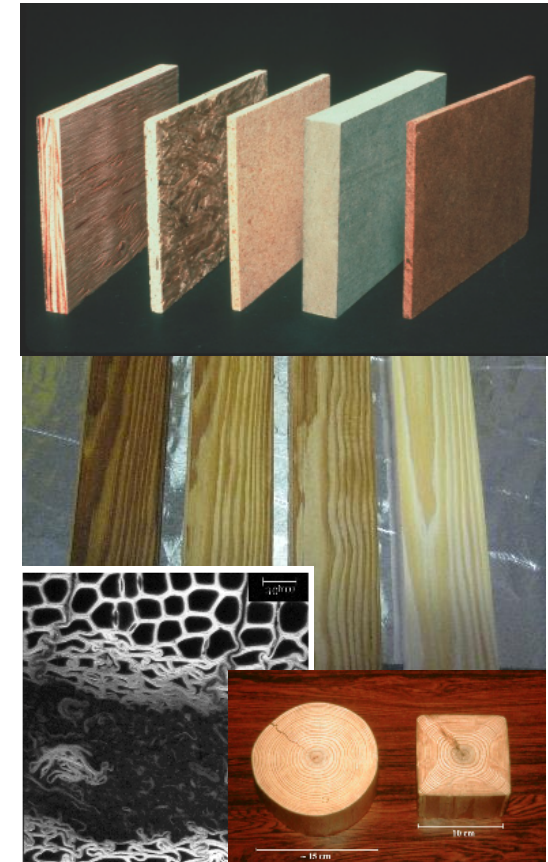
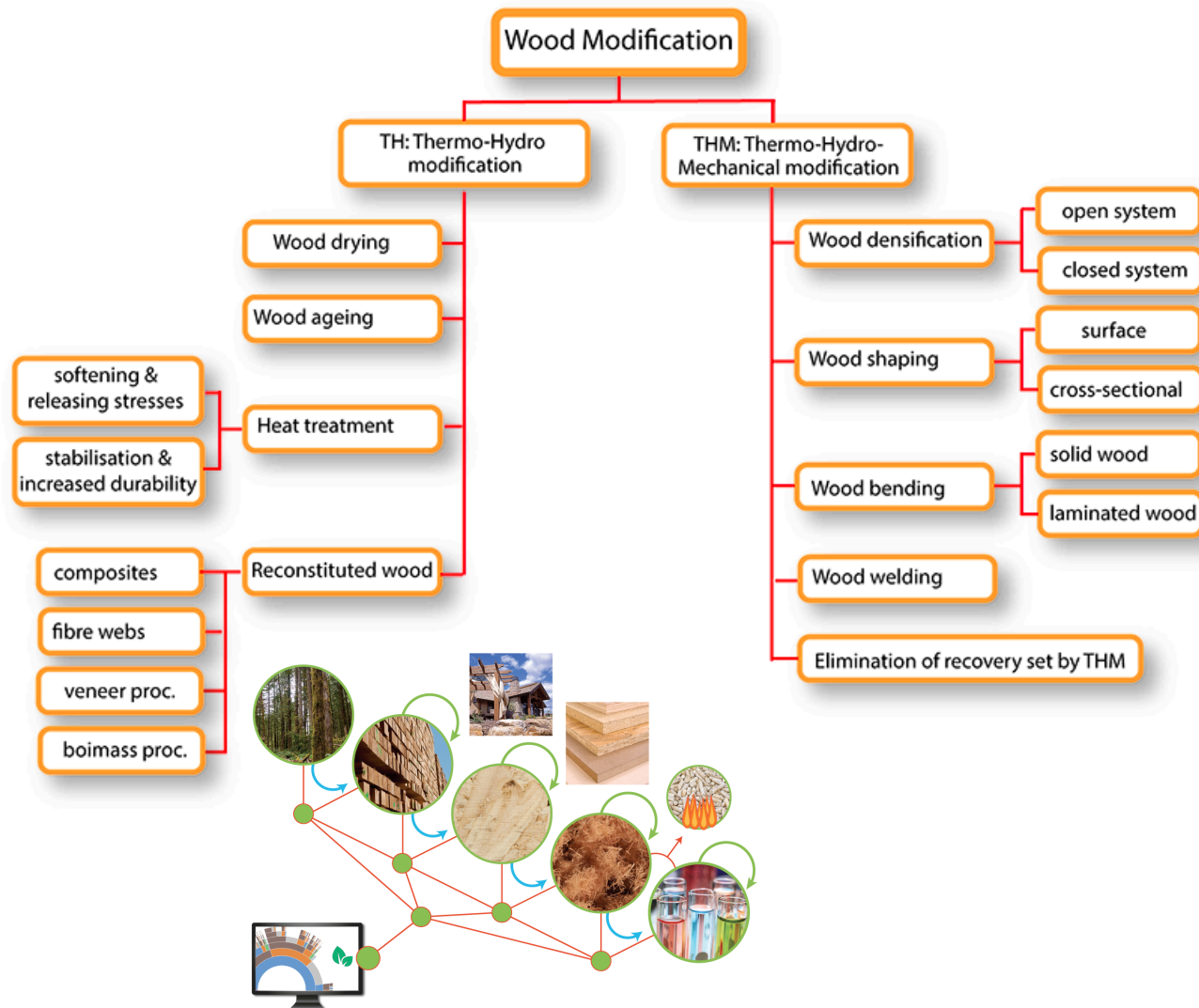
Core research themes
Health, Design and Cultural
Heritage, and **Policy**

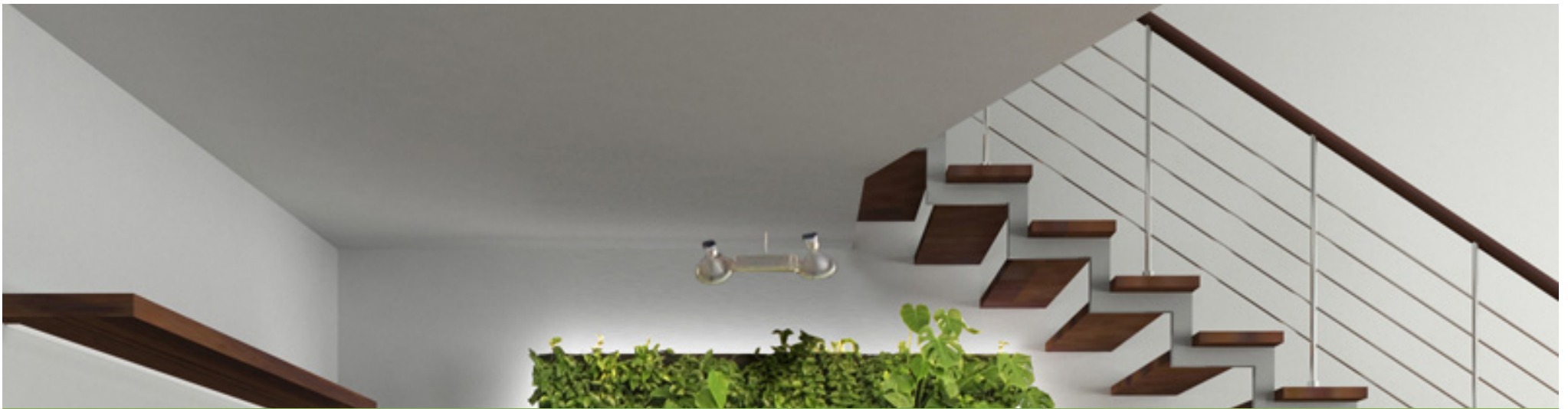
→ **new, advanced
knowledge in
REED and
modified wood**

Wood Modification



chemical, thermal, and impregnation/polymerization





REED combines restorative environmental design (RED) with ergonomic interventions in buildings and products.

RED is a combination of **expanded sustainable building methods** with building practices that **benefit occupant health**.



Economy - innovative transformation of the renewable resource industry (especially forest products) to a **competitive knowledge-based industry**

How?

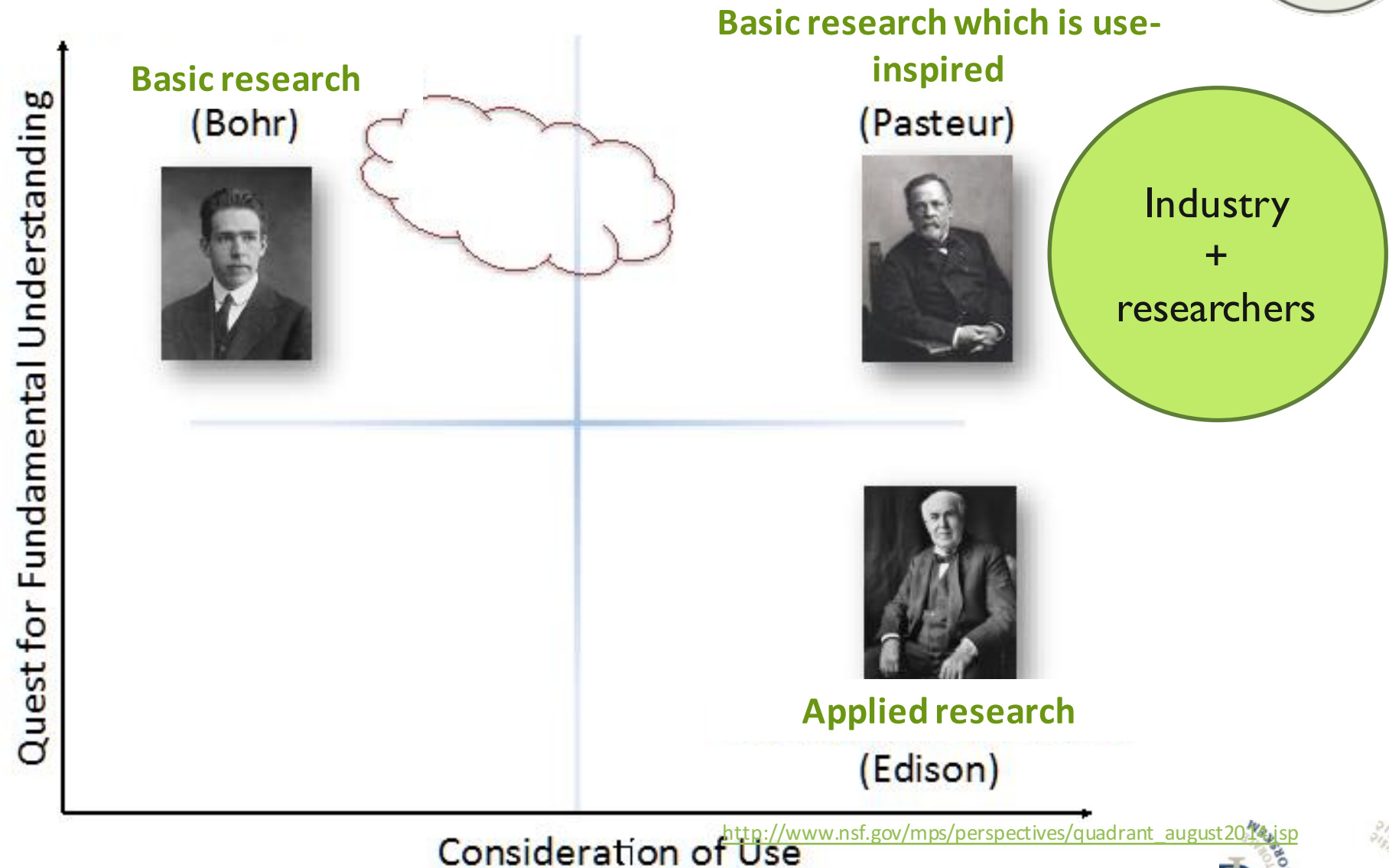


Partnership with
Fraunhofer WKI, an
institution of research and
innovation excellence
With networks of **excellent
scientists**

Facilitating collaboration with
**industry, research
organizations, scientific
institutes, stakeholder** groups
and the public



Science-industry: Pasteur quadrant



Living laboratory Innovative Renewable Material Uses Living Laboratory



Objective:

discuss the project, develop creative and innovative new ideas,
provide critical feedback

A **public-private-people** relationship with stakeholders:

- *R&D institutions*
- *Associations*
- *SMEs & Large companies*
- *Municipalities*
- *Government bodies*
- *Citizens*

LL InnoRenew Living lab



	#
National SMEs	26
National R&D	7
International R&R	14
International organizations	2
Regional development agencies	2
International SMEs	6
Skupaj	57



dekleva gregorič arhitekti



H2020 - Teaming



LL InnoRenew – Internacionalization – 16 countries

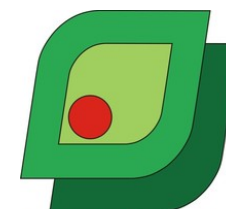


SOCIETY OF
WOOD SCIENCE &
TECHNOLOGY

Forest-based Sector
Technology Platform



Biotehnički fakultet
Biotechnical faculty



Institut za Šumarstvo
Institute of Forestry



H2020 - Teaming



IAM

ISTITUTO ANDREI MANARIS

LL InnoRenew – Interdisciplinarity



University of Ljubljana
Faculty of *Civil and Geodetic Engineering*

Univerza
v Ljubljani

Biotehniška fakulteta
Oddelek za lesarstvo



Šola s priobadnostjo



GEODETSKI INŠTITUT SLOVENIJE



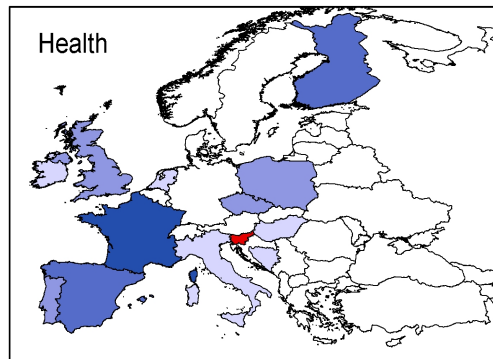
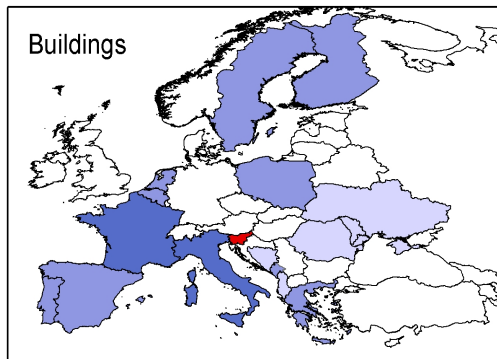
Regionalni razvojni center Koper
Centro regionale di sviluppo Capodistria



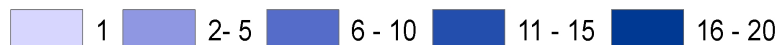
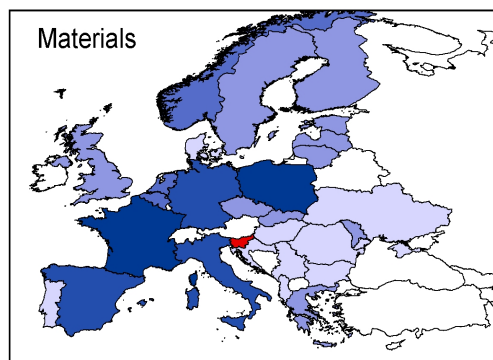
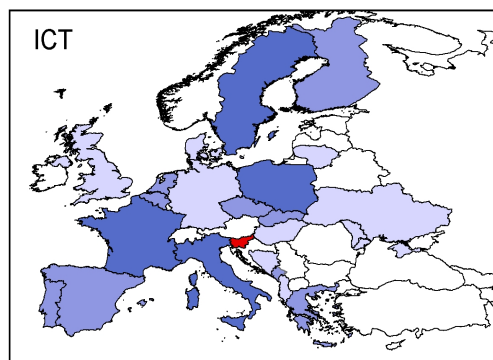
H2020 - Teaming



<http://a1office.com.au/advice/integrating-ict-considerations-for-the-modern-office>



LL InnoRenew – Trans-regional collaboration



Support



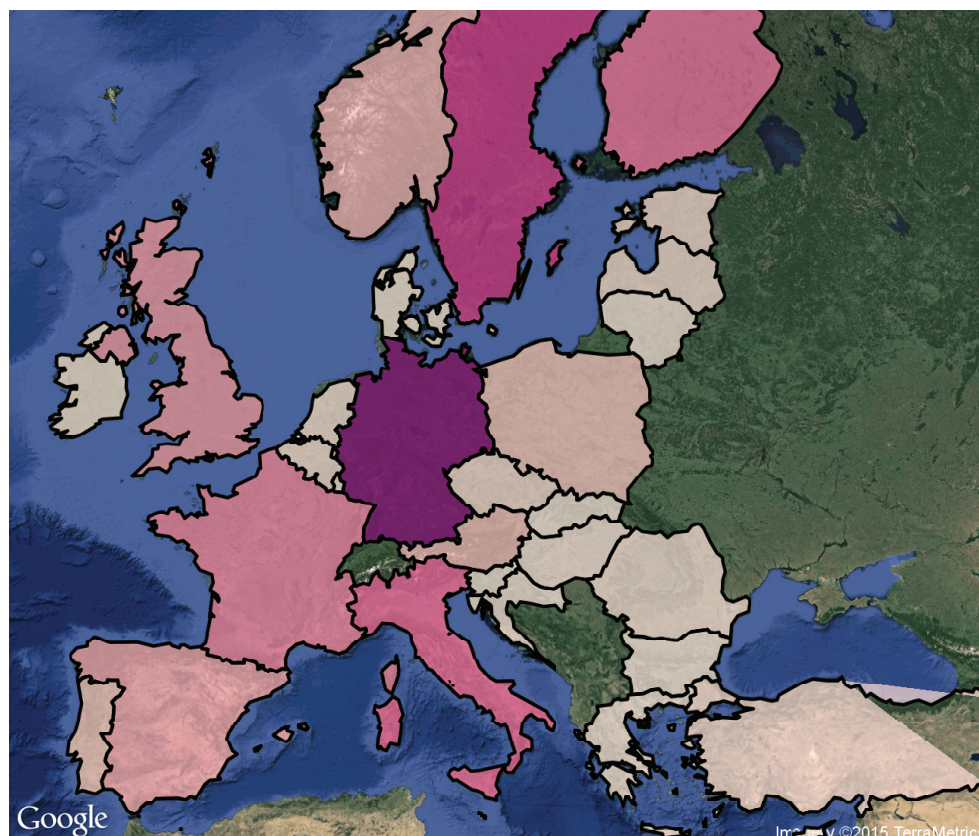
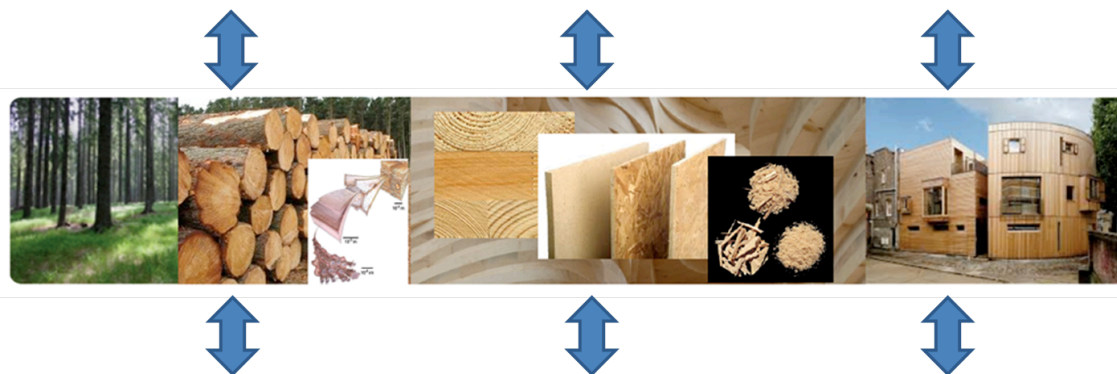
Slovene-German high-level delegation meeting with the representatives of the InnoRenew CoE at CoE's Advanced Partner, **Fraunhofer Institute for Wood Research Wilhelm-Klauditz-Institute**, **October 2015**

Prof. Dr. Maja Makovec Brenčič, the Minister of Education, Science and Sport of the RS
Ambassadors **Dr. Anna Prinz** and **Marta Kos Marko**;
Mag. Urban Krajcar - the Director General of the Science Directorate, MESS;
Prof. Dr. Dragan Marušič, the Rector of the University of Primorska

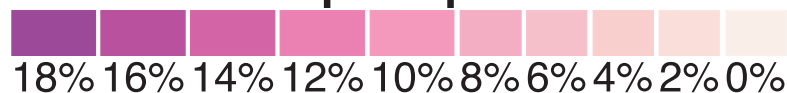


More: <http://innorenew.eu/en>

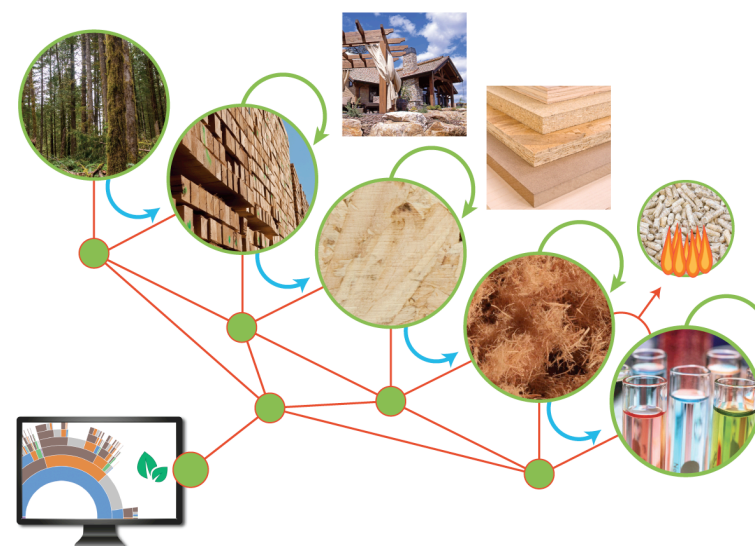
Why?



Share of European production volume



PRODCOM Dataset – 205 categories



Country's contribution to the European forest sector by volume of production. (average 2008-2013).



Benefits for Slovenia



Collaboration with Fraunhofer WKI brings to local research:

- **new possibilities for exploitation and value creation**
- **boosting the innovation potential**
 - International cooperation and **mobility of researchers** and professionals
 - Transfer of innovation excellence experience
 - Access to infrastructure

Smart – wood - ICT?



Environmental Impacts of Traditional and Innovative Forest-based Bioproducts

Editors: **Kutnar**, Andreja, **Muthu**, Subramanian Senthilkannan (Eds.)

Environmental Use of Wood Resources (Kutnar, A)

Wood-Plastic Composites—Performance and Environmental Impacts (Schwarzkopf, M & Burnard, M)

The Opportunities and Challenges for Re-use and Recycling of Timber and Wood Products Within the Construction Sector (Ormondroyd, GA et al.)

Additives in Wood Products—Today and Future Development (Sandberg, D)

Forest-Based Bioproducts Used for Construction and Its Impact on the Environmental Performance of a Building in the Whole Life Cycle (Kunič, R)

Business—Bioproducts in the Bioeconomy (Roos, A)

Responding to the Bioeconomy: Business Model Innovation in the Forest Sector (Hansen, E)

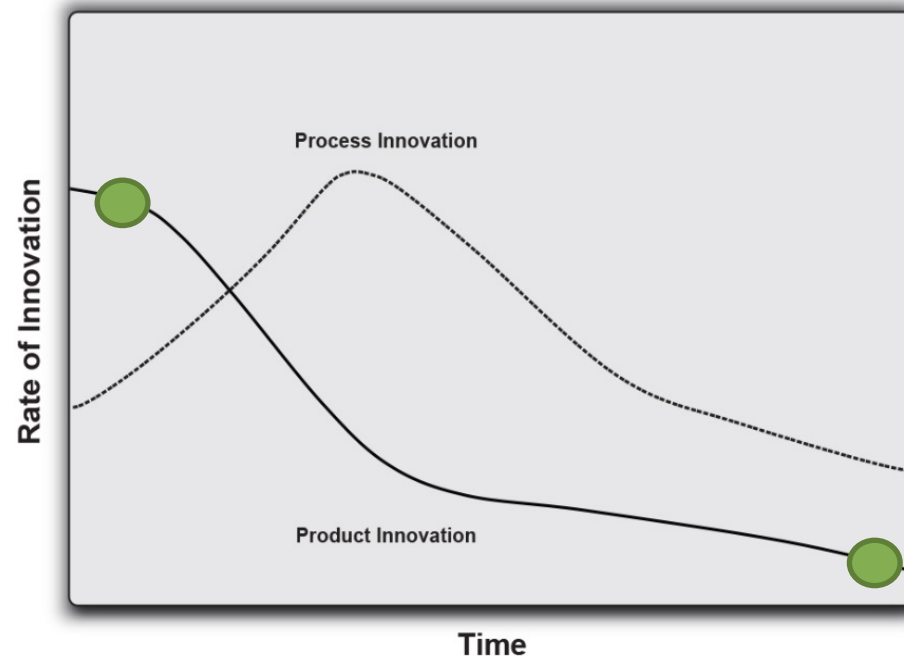


Smart – wood - ICT?



Hansen, E: Responding to the Bioeconomy: Business Model Innovation in the Forest Sector

Envisioning how forest products can interact with other products via the **Internet of Things** is a prime avenue for **cross-sector, cross-company collaboration** and **innovation**.



Its is much more then



www.pinterest.com



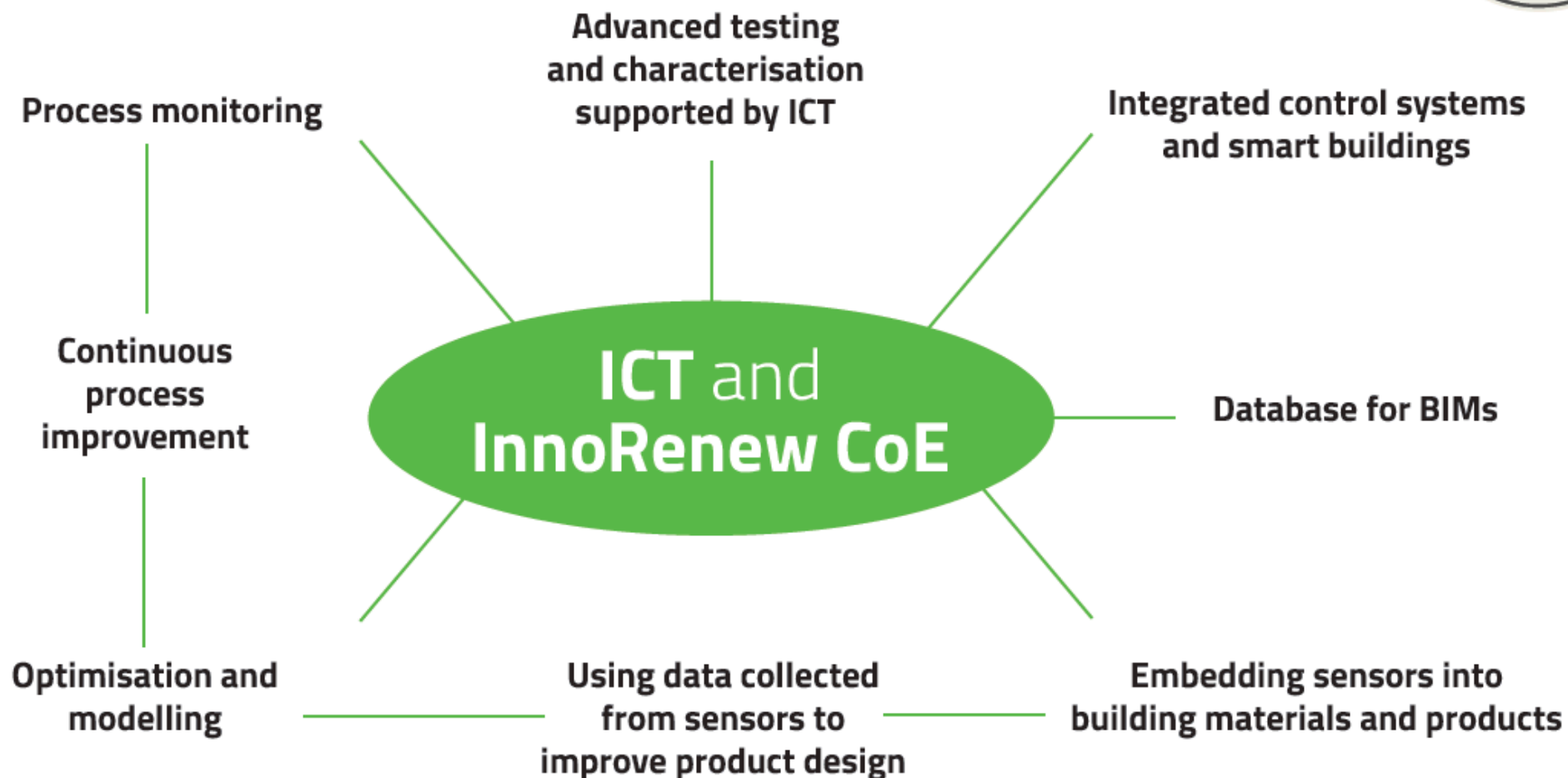
shown in walnut

www.shop.lazerwood.com



www.fineandfeathered.me

InnoRenew and ICT



CEI's 40 Storey Wood Tower Model

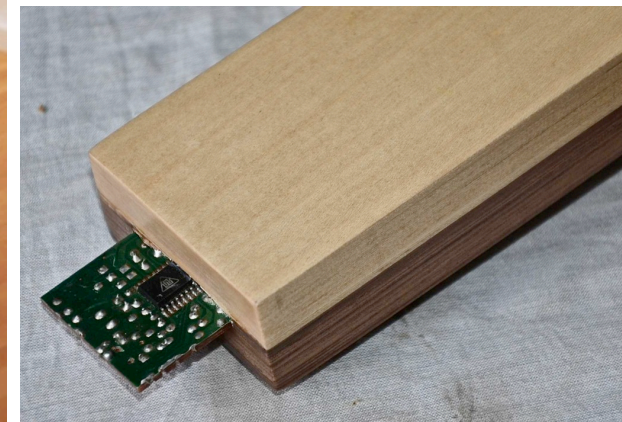


<http://bim4scottc.blogspot.si/2014/06/ceis-40-storey-wood-tower-model.html>

3D printing - additive manufacturing



Company 4 XYZ



<http://3dprinting.com/news/future-talk-3d-printing-wooden-furniture/>

Smart furniture – internet of things



Ikea - Phone chargers

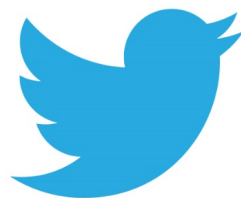


South Korea - SK Telecom and Hyundai Livart

InnoRenew on Social Media



- Communicate with partners, stakeholders, public
- Disseminate project results
- Promote InnoRenew CoE



Facebook – 423

Twitter – 381

LinkedIn - 331

Join us, follow us, and like us on social media and help us with establishment of the InnoRenew CoE



THANK YOU

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