

Studio di prospettiva del JRC sulle eco-industrie

Helping to understand the systemic aspects of
the transition towards a sustainable economy

Laurent BONTOUX, PhD

**ECOINNOVAZIONE E COMPETITIVITA' DELLE
IMPRESE ITALIANE**

**Lo sviluppo delle imprese della green
economy per uscire dalla crisi italiana**

Ecomondo

Rimini, 5 Novembre 2014

*Serving society
Stimulating innovation
Supporting legislation*



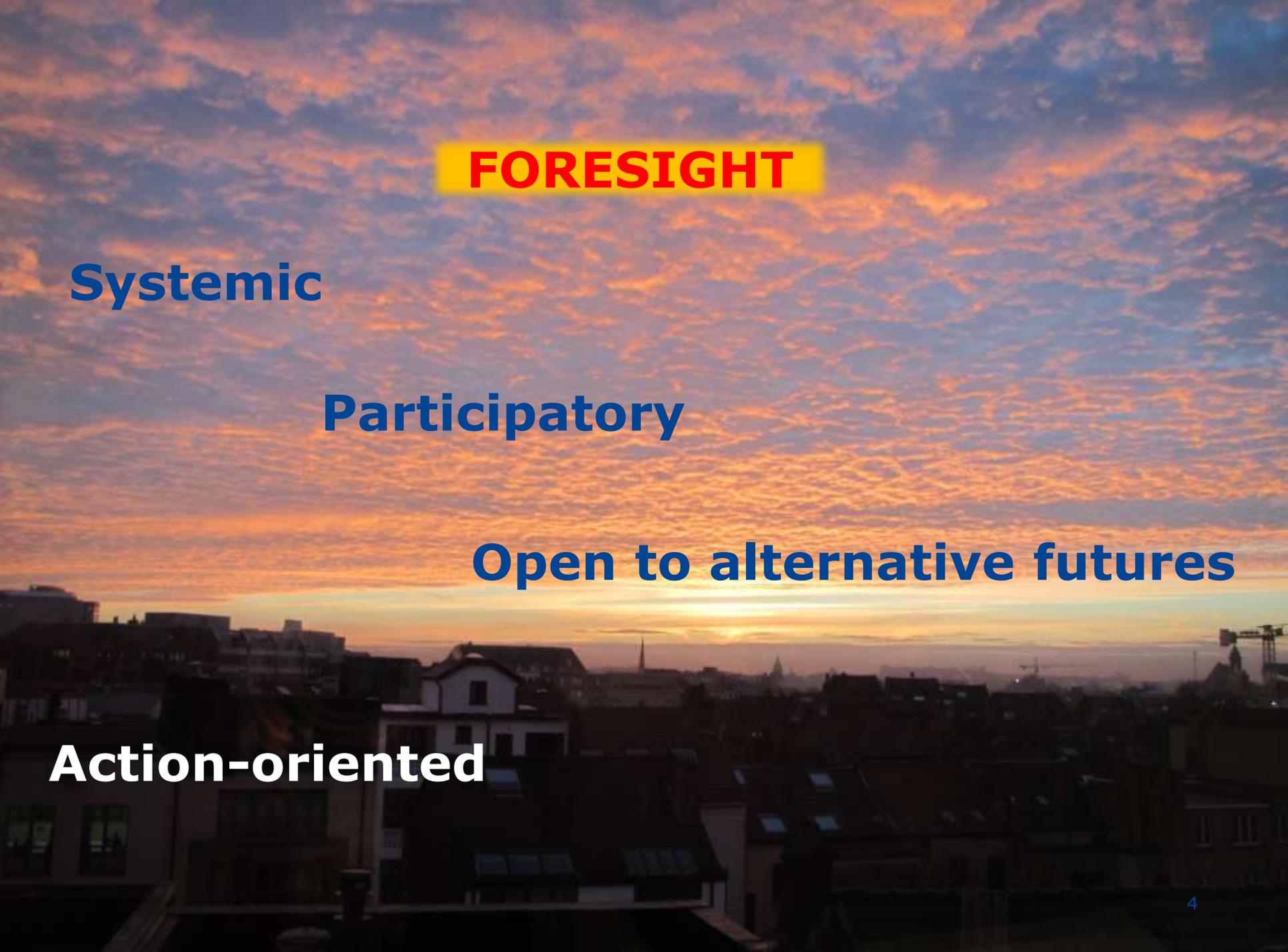
A European (and Italian...) challenge

"Europe needs a narrative that shows the possibilities in reducing global emissions, fighting climate change locally, securing energy supplies, promoting wider socio-economic interests and increasing competitiveness – all at the same time."

Annika Ahtonen-Hedberg

Comment on the EU 2030 framework on climate and energy
EPC, January 2014





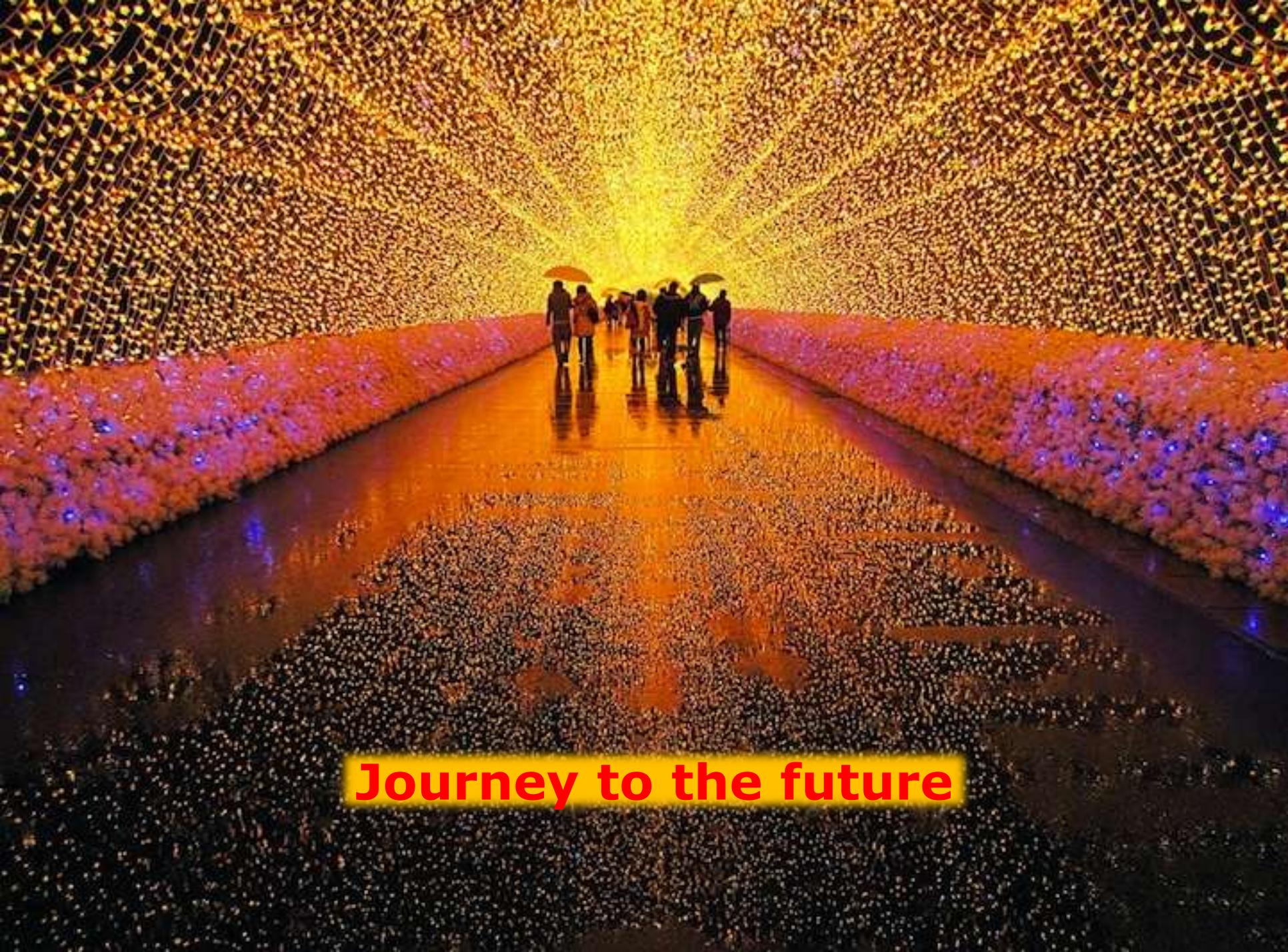
FORESIGHT

Systemic

Participatory

Open to alternative futures

Action-oriented



Journey to the future

Defining "eco-industries"

all socio-economic activities that make the transition to a green economy possible

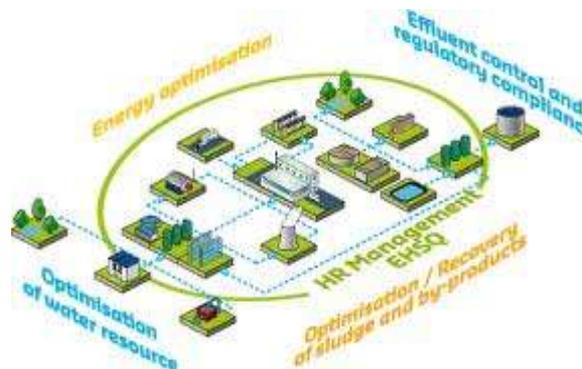
UNEP's working definition of a green economy:

"One that results in improved human well-being and social equity while significantly reducing environmental risks and ecological scarcities".



The 3 strands of "eco-industries"

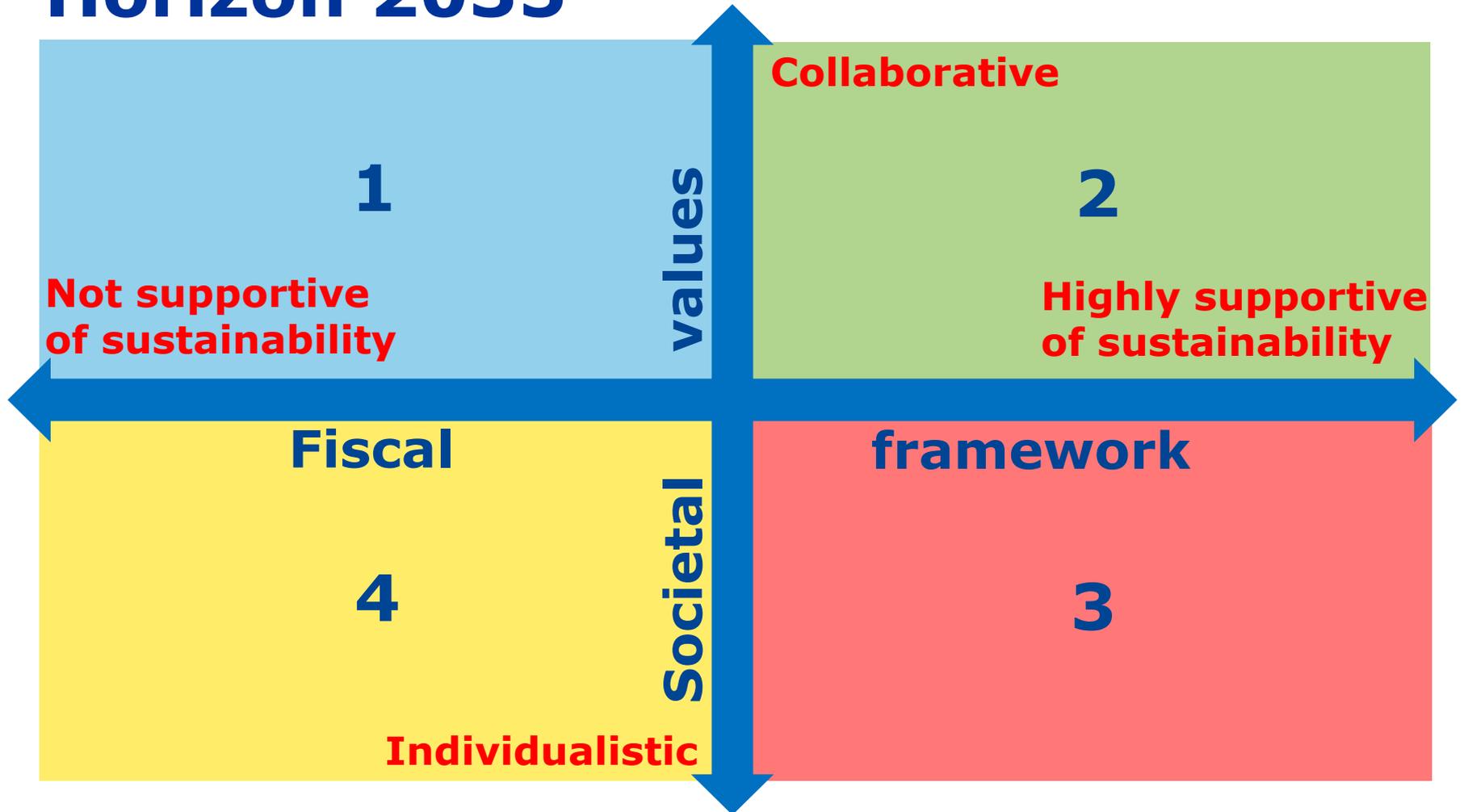
- "**Green industries**" - environmental industries
- "**Industries greening**" – other industries adopting eco-innovations
- "**Eco-innovative solution providers**" – R&D, new business models, organisational/social innovation, integrators



Scenario logic



Horizon 2035

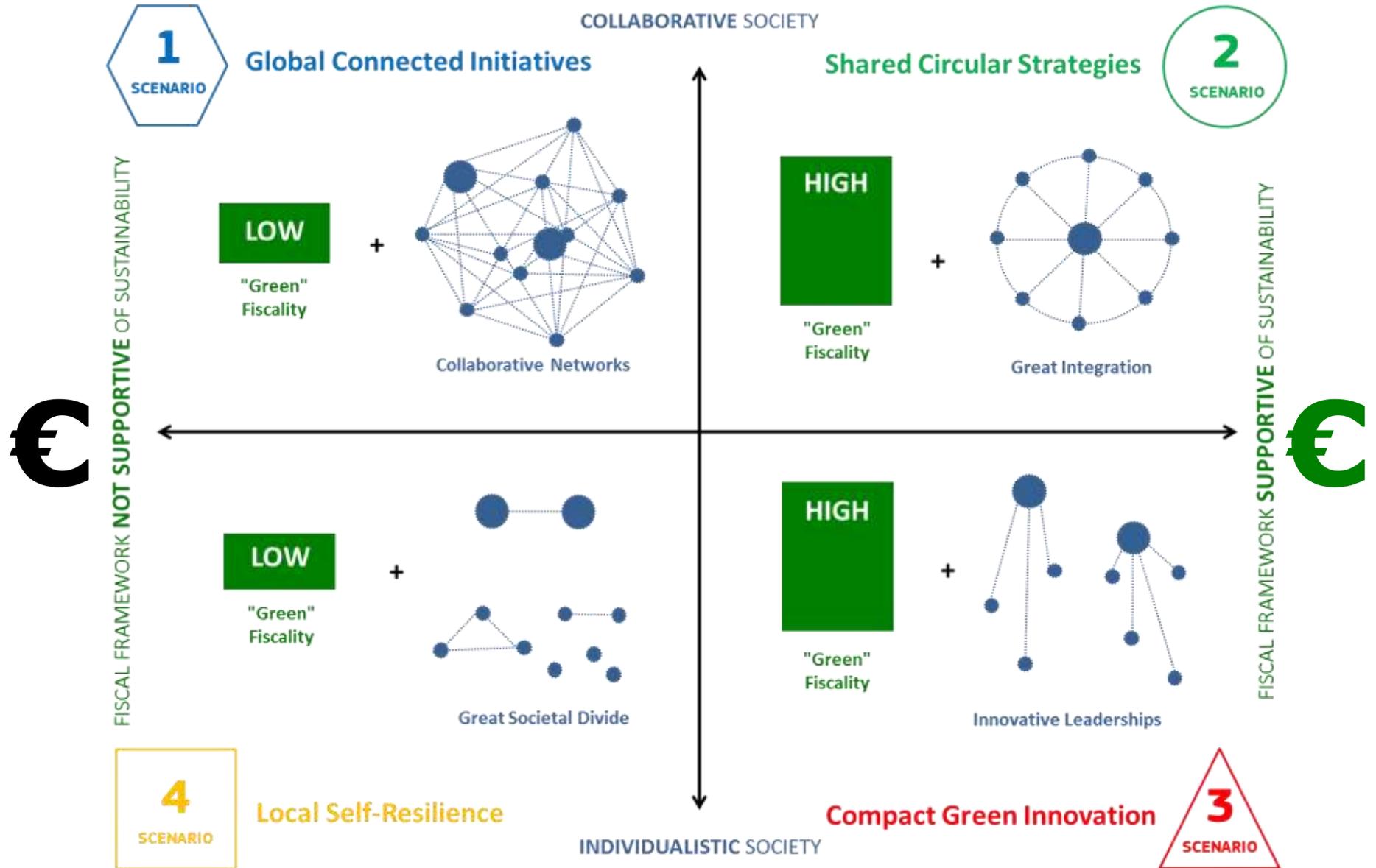


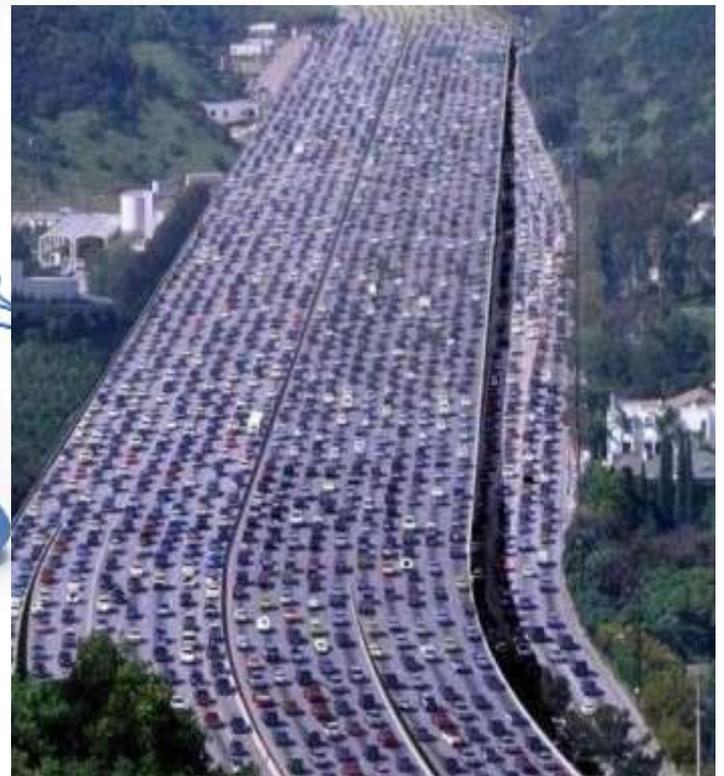
WARNING!

Scenarios are by definition imaginary!

They are a support for strategic reflection

Horizon 2035





Collaborative

Global connected initiatives

Shared circular strategies

Local
 Social Regional Inspired
 Involved Environmental-aware
 solutions Empathetic communities
 Collaborative Connected
 nature Creative Low-key
 Open

SHARING
EU SYSTEMS ORGANISED
INTEGRATION
LEADER STANDARDISED
POLICY COMMUNITY PROACTIVE
GOVERNING PLANNING

values

Highly supportive of sustainability

Fiscal

framework

Scattered
 Self-resilient Local
 Competitive Short-sighted
 Private Opportunity
 Profit Self-interest

Glocal
Performant Innovative
Ingenious High-tech
Tech-savvy
Neighborhood Competitive
Products Problem-solver
Services

Societal

Local self-resilience

Green technological innovation

Individualistic

Not supportive of sustainability

SCENARIO 1 – Global connected initiatives



Image source: UNStudio & EE&K

Scenario 1



Consequences for eco-industries

Collaborative business models, sharing, pooling, networking

Local, group-based sustainability initiatives

Local smart infrastructures, industrial symbioses

Publicly and crowd-funded green R&D

Consciousness of health and well-being

Open and social innovation

Trend towards integration

Increasing CSR





Eco-innovation

- **Scattered patterns, wide range of actors:**
 - ❖ Individual makers, community-based fab-labs, SMEs, large companies
 - ❖ Enabled by local innovation networks and new funding schemes
- **Social innovation at the source of most initiatives**
- **Firms practice open innovation a lot more than in the past:**
 - ❖ Actively engage with universities to find the needed skills
 - ❖ Create schools within their premises, supported by regions
- **Mix of open source and open innovation**
- **Collaborative product design and development:**
 - ❖ Ideas competitions, product/service/software co-development platforms
 - ❖ Open source communities act as innovation intermediaries.



SCENARIO 2 - Shared circular strategies

Consequences for eco-industries

Strong environmental standards

Price and societal signals aligned

*Strong **top-down** trend towards **integration**, societal resilience*

*Heavy investment in **smart infrastructures**, resource efficiency*

New business models based on sharing and efficient services

CSR at the core of business strategies (**no choice!**)

Social innovation, cooperative schemes

*Large role of **public** initiatives*

Strong dematerialisation

"Circularisation"





Eco-innovation

- **Overall framework very favourable to eco-innovation:**
 - ❖ Technological development
 - ❖ Regulatory initiatives
 - ❖ Economic incentives
 - ❖ Social acceptance.
- **Top-down integration of technological and social eco-innovation**
- **Eco-innovation supported by investments in infrastructure**
 - ❖ Adaptation and development at large scale
 - ❖ Sustainability objectives at macro level
- **Top-down sustainability objectives but:**
 - ❖ Financial and technical support
 - ❖ Openness for solutions adapted to local specificities

SCENARIO 3 – Green technological innovation



Scenario 3



Consequences for eco-industries

Market-led drive towards sustainability

Development of green infrastructures that make business sense

Collaborative solutions emerge driven by this fiscal framework

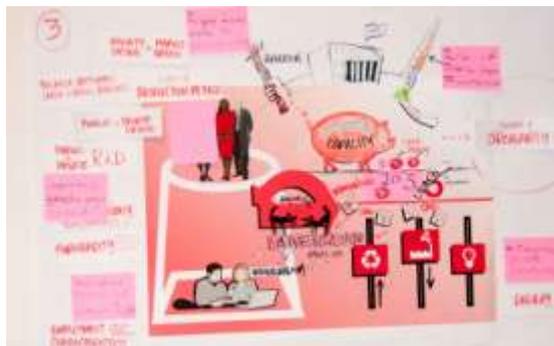
*Adaptation to climate change through **high-tech solutions***

Strong technology development for cost and resilience

Distributed manufacturing

Market-driven "circularity"

CSR developed ad hoc





Eco-innovation

- **Eco-innovation mostly shaped by the fiscal regime**
- **Green industries:**
 - ❖ Eco-efficiency, material saving and recovery most successful
 - ❖ Paradigm-shifting, longer-term, businesses mostly absent
- **Industry Greening:**
 - ❖ Occurs at the individual company level, some more, some less
 - ❖ Motivated by price signals
- **Eco-innovation dominated by private R&D on eco-efficiency to save costs**
- **Large companies dominate and buy small successful eco-innovative start-ups**



SCENARIO 4 – Local self resilience



Image source: Little Visuals

Consequences for eco-industries

Trend towards **individual resilience, short-term thinking**

Renewable energy **technologies for individual solutions**

Some improvement in resource efficiency – **cost-cutting**

New business models limited to a few profitable niches

Large companies and the **private sector dominate**

Little development of infrastructures

Reactive adaptation to CC

Little integration of systems

Low importance of CSR





Eco-innovation

- **The potential for eco-innovation depends largely on:**
 - ❖ Global prices of raw materials and energy
 - ❖ People's desire for autonomy/self-sustainability
- **Focus on short-term, cost- and eco-efficiency**
- **Little space for paradigm-shifting, longer-term eco-innovation**
- **Little public infrastructure investments**
- **Reactive, mostly private R&D on eco-innovation for**
 - ❖ Saving costs
 - ❖ Serving people's desires to be autonomous and resilient

CONCLUSION

- **The future is still undecided. Today's policy and business choices will have a large impact on eco-industries and eco-innovation**
- **Scenarios help create visions of how eco-innovation and eco-industries could develop in alternative worlds**
- **They are a stimulation to think systemically to help us build the future we want**
- **They are a tool to support strategy development and help identify threats and opportunities**



THANK YOU!

Want to know more?

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Scenario 1



What led to this scenario in 2035

Increasing effects of **climate change**

Weak international agreement on GHG by late 2010's

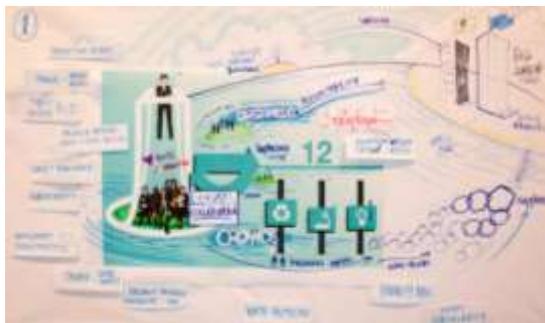
Early eurosceptic push reinforces **Euroregions**

Redistribution of subsidiarity

Strong social media and robotics

Manufacturing and low white collar jobs disappear

International governance adapts to global issues and **rise of "emerging" countries at UN**



Scenario 2



What led to this scenario in 2035

Catastrophic weather events shift public opinion

But still a minima int'l agreement

EU goes it alone: long-term vision agreed, radical change

Solidarity as a strong value, openness, sharing

Millenials in positions of influence

Redefinition of subsidiarity

EU in "**managed trade**" regime



Scenario 3



What led to this scenario in 2035

Slow EU economic recovery

Weakening social protection leading to individualistic society

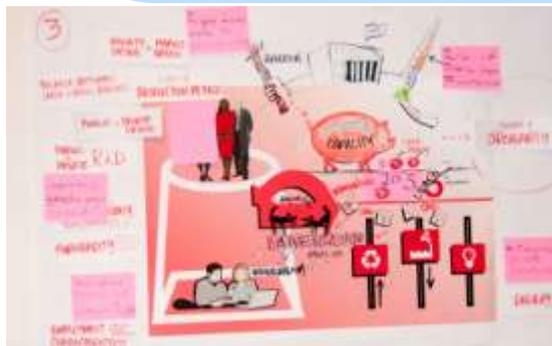
High unemployment, rising inequalities

Increasing pressures from **climate change and demography**

Need for a **radical tax reform** to get out of the slump

Sustainability seen as a sound economic paradigm

Frugal innovation unleashed, **technology is the solution**



Scenario 4



What led to this scenario in 2035

Slow progression of the effects of climate change

Slow and steady **decline of the EU**

Economic wisdom stuck in the 20th century

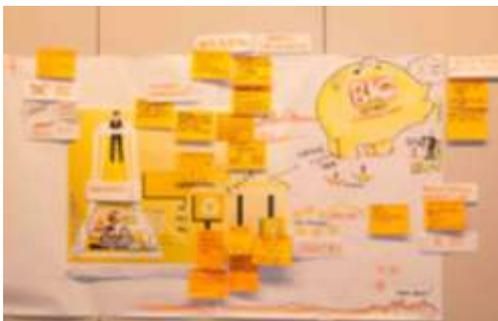
Social protection systems have become **unaffordable**

Rise of inequalities

Reform of the UN Security Council, only 1 EU seat out of 8

Strong global groups of interest

IT gives means to people to self-organise



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